Reserved Channel Master Plan Development

EEA# 16802



Draft Environmental Impact Report

Submitted to:
Executive Office of Energy and Environmental Affairs
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Submitted by:
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In Association with:
Skidmore, Owings & Merrill
Arup
DLA Piper
Haley & Aldrich
SCAPE Landscape Architecture
Stantec
Vanasse Hangen Brustlin (VHB)

May 28, 2026

Epsilon ASSOCIATES INC.

DRAFT ENVIRONMENTAL IMPACT REPORT
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Executive Summary

EXECUTIVE SUMMARY

Introduction

Oxford Properties Group and Pappas Enterprises, Inc. (collectively, the "Proponent"), propose a mixed-use redevelopment of approximately 41.66 acres of land (the "Master Plan Project") in South Boston, bounded generally by West First Street, Summer Street, E Street, and the Reserved Channel (the "Master Plan Site"). The Master Plan Site includes approximately 38.23 acres of land leased from the Massachusetts Port Authority ("Massport") and approximately 3.43 acres owned in fee by the Proponent. This Draft Environmental Impact Report ("DEIR") has been prepared in response to the Secretary of the Office of Energy and Environmental Affairs' Certificate (the "Certificate") issued on June 28, 2024 in response to the Environmental Notification Form ("ENF") submitted pursuant to the Massachusetts Environmental Policy Act ("MEPA") on April 30, 2024.

The DEIR evaluates the development of the Master Plan Site at two interrelated scales: (1) the Master Plan Project, which establishes a comprehensive framework for the full buildout over multiple phases; and (2) the Phase 1 Project, which represents the first phase of development proposed to advance permitting, construction, and operation.

The Master Plan Project is subject to a Special Review Procedure ("SRP") which will require all future phases and buildings to submit a Project Commencement Notice ("PCN") to satisfy MEPA review requirements.

Project Description

Master Plan Project Overview

The Master Plan Project proposes the redevelopment of the Master Plan Site into a resilient, mixed-use waterfront district, integrating residential, commercial research and laboratory, hotel, retail, maritime-industrial support uses, and an extensive network of publicly accessible open spaces. At full buildout, the Master Plan Project anticipates approximately 5,998,000 square feet ("sf") of new development across 11 development blocks and 24 buildings. The proposed program includes approximately 4,080,000 sf of commercial research and laboratory uses, approximately 1,500,000 sf of residential uses (approximately 1,578 dwelling units), approximately 205,000 sf of hotel space (approximately 224 keys), and approximately 218,000 sf of retail and amenity uses.

A defining element of the Master Plan Project is its long-term climate resilience strategy. The Master Plan Project is designed to address coastal flooding, sea level rise, inland stormwater flooding, and urban heat effects through the elevation of the Master Plan Site, buildings, and streets; integration of green infrastructure; and the substantial expansion of tree canopy and open space. The Master Plan Project proposes to raise much of the site from existing elevations to elevations at or above the projected 2070 design flood elevations, while maintaining public access and connectivity to the Reserved Channel waterfront and surrounding areas.

The Master Plan Project establishes a coordinated framework for land use, infrastructure, transportation, utilities, environmental remediation, and open space that allows future phases to proceed in a manner that allows for flexibility to meet market demands, avoids or minimizes environmental impacts, ensures regulatory compliance, and provides cumulative public benefits.

Phase 1 Project Overview

Development of the Master Plan Site will commence with Phase 1 (the "Phase 1 Project"), which is designed to establish the essential urban structure, public realm, and resiliency framework for the broader Master Plan Project. The Phase 1 Project will encompass approximately 12.86 acres of the Master Plan site and includes three development blocks—Blocks A, B, and C—generally located along West First Street and Pappas Way, adjacent to the Reserved Channel. The Phase 1 Project will consist of approximately 935 residential units, approximately 567,000 sf of commercial research laboratory space, and approximately 84,000 sf of retail and amenity space, along with new streets, utilities, and publicly accessible open space.

Changes Since the ENF

In response to feedback from the community, the City, and other stakeholders, the Master Plan Project has been revised since the ENF. The main changes include:

- A prioritization of residential space, in particular on Blocks A and B, which are proposed to be entirely residential with ground floor retail; an increase of 725 residential units.
- Shifting of buildings, including an increased setback along West First Street to allow for additional public realm improvements along West First Street, including a two-way bicycle lane.
- Reconfigurations of the ground floor of Building B3 to accommodate the potential of a future grocer tenant.
- A strategy for the eventual closure of a portion of Pappas Way between Road 1 and West First Street to allow for a new open space and deliver on a broader network strategy to change the character of Pappas Way.
- Continued to advance the development of F Street through design support and coordination related to its expansion to Summer Street.
- Development of Design Guidelines for Phase 1 that outline key principles related to building massing, ground floor activation, façade articulation, materiality, and public realm integration.

Phasing

The Master Plan Project is proposed to be constructed in phases, starting with the Phase 1 Project. Phase 2 includes Blocks D, J, I and K, and Phase 3 includes Blocks E, G, H, and modifications to Pappas Way at the intersections of Summer Street and West/East First Street. The development of individual blocks or buildings may differ from the phasing plan and will depend on market and other conditions. The development of the roadway and open space networks will be coordinated with the development of each block. Figure ES-1 provides an overview of how the development of the Master Plan Project components will be connected to the development of each block.

Public Benefits

The Master Plan Project is expected to generate substantial public benefits at both the phased and Master Plan scales. These benefits include:

- Redevelopment of a largely impervious, industrial waterfront site into a resilient, mixed-use district;
- Creation of approximately 11.5 acres of publicly accessible open space, including a continuous waterfront open space network;
- Creation of more than 12 acres of new right of ways, including sidewalks and roadways, accessible to the public;
- Improved multimodal connectivity between South Boston neighborhoods, the waterfront, and the regional transportation network;
- Creation of approximately 4,300 linear feet of new bicycle infrastructure;
- Implementation of climate resilience measures that reduce flood risk and improve long-term adaptability, while being able to connect to future regional climate resilience efforts;
- Strategic and flexible planning framework to preserve optionality to realize ambitious project goals;
- Support for economic development, job creation, and long-term tax base growth;
- Early delivery of housing, including a majority residential component in the Phase 1 Project; and
- Approximately 218,000 sf of retail and amenity uses serving the neighborhood.

Select improvements and outputs	New Open Space						New Resiliency						New Connectivity & Roadways												New Use Provisions			New Economic Development				
	West First Gateway	Landscaped Corridors	Interim Waterfront Improvements	Resiliency Park	Pappas Way Improvements	Open Space	Resiliency Strategy	Urban Tree Canopy	CSO E (72"), W (60'), NS (48")	Basin Loop Design $ for Design Doc.	New Trees	New Fill to Raise Site	Interim Pappas Way	Interim Roads A,B,C	Pappas Way	F Street Phase 1	F Street Balance	Road 1 Phase 1	Road 1 Balance, & Road 2	Road 3, & Anchor	Road 4, & Fargo St	Road 5	Transportation Demand Management	Bicycle Infrastructure	New Right of Ways – Public Access	Grocer Potential	Facility of Public Accommodation	MIW Use Potential	Jobs – Construction	Jobs – Permanent	Real Estate Taxes – Annual	Housing Linkage	Jobs Linkage
Phase 1						2.8 Acres					+200	18K CY												1,500 LF	4.2 Acres								
Block A	+					+	+	+			+	+	+			+		+					+	+	+				+	+	+		
Block B		+				+	+	+			+	+				+		+					+	+	+	+			+	+	+		
Block C		+	+			+	+	+		+	+	+		+									+	+	+		+		+	+	+	+	+
Future Phases						9.7 Acres					+800	135K CY												2,800 LF	8.0 Acres								
Block D				+	+	+	+	+	+		+	+			+				+				+	+	+				+	+	+	+	+
Block E				+	+	+	+	+	+		+	+					+		+	+			+	+	+			+	+	+	+	+	+
Block G				+	+	+	+	+	+		+	+					+		+	+			+	+	+			+	+	+	+	+	+
Block H				+	+	+	+	+	+		+	+					+		+	+			+	+	+			+	+	+	+	+	+
Block I					+	+	+	+			+	+			+					+		+	+	+	+				+	+	+	+	+
Block J					+	+	+	+			+	+			+						+	+	+		+				+	+	+	+	+
Block K					+	+	+	+			+	+			+								+		+		+		+	+	+	+	+
Total						11.5 Acres					+1K	153K CY												4,300 LF	12.2 Acres								

Draft Environmental Impact Report Overview

The DEIR includes a number of analyses, including analysis of alternatives, Environmental Justice ("EJ") impacts, public health, tidelands, wetlands, stormwater, transportation, utility infrastructure, site soil conditions, climate change, greenhouse gas emissions and construction impacts. These analyses are briefly summarized below.

Alternatives Analysis

The alternatives analysis evaluated alternatives to the Master Plan Project to assess whether alternative configurations could reduce environmental impacts while meeting the Master Plan Project's fundamental objectives. Specifically, the DEIR evaluated a Reduced Build Alternative, a Reduced Height Alternative, a Raised Elevation Alternative, a Future Traffic Operations Alternative, and a Climate Resiliency Alternative. Each alternative is assessed with respect to environmental impacts, resilience performance, Master Plan Project goals, public benefits, and economic feasibility. The Certificate requested an analysis of additional residential space in Phase 1; the Phase 1 Project now proposes only residential space with ground floor retail on Blocks A and B, the impacts of which are analyzed throughout the DEIR.

The alternatives analysis concludes that the Master Plan Project, as proposed, represents the most appropriate balance of environmental performance, climate resilience, public benefits, and feasibility, and that the identified alternatives would not achieve the Master Plan Project's objectives to the same degree or would introduce greater long-term environmental or resiliency risks. Understanding that the Master Plan Project will be built out over decades and that uses other than those proposed may be more appropriate in the future, alternative development scenarios for each block beyond Phase 1 have been provided.

Environmental Justice

The EJ analysis identifies the designated geographic area, documents public outreach and engagement efforts, and evaluates baseline environmental and public health conditions affecting nearby EJ communities in compliance with the MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations.

The analysis included a baseline health assessment addressing vulnerable health criteria, including childhood asthma, childhood blood lead levels, heart attack hospitalizations, and low birth weight. While certain EJ populations in the area exhibit elevated baseline health indicators, the analysis concluded that the Master Plan Project would not disproportionately or unfairly increase environmental burdens on EJ populations.

A review of existing sources of pollution within the EJ area determined that the Master Plan Project would not introduce new regulated sources that would exacerbate existing conditions.

An air quality analysis related to the Phase 1 Project's transportation impacts was completed. The air quality analysis shows that the small increase in emissions from the Phase 1 Project traffic is

not expected to have adverse air quality impacts that would result in an exceedance of health-protective National Ambient Air Quality Standards and therefore the Phase 1 Project would not disproportionately impact EJ communities near the Phase 1 Project site.

Public Health

Potential public health impacts, with a focus on vulnerable populations, are evaluated to consider any long-term operational impacts and short-term construction that could pose a risk to public health.

Long-term public health impacts are expected to be minimal and short-term construction impacts will be temporary and mitigated through Construction Management Plans, dust control measures, noise controls, and coordination with Massport and the City of Boston. The Master Plan Project includes beneficial public health elements, including increased open space, reduced impervious area, expanded tree canopy, climate-focused design, and enhanced recreational opportunities. The Master Plan Project is not anticipated to result in material adverse impacts to public health.

Chapter 91 / Tidelands

The Master Plan Project's relationship to Chapter 91 Waterways jurisdiction is evaluated, including landlocked and flowed tidelands, and a description of the anticipated licensing pathways for Phase 1 and future phases is discussed. Block C, specifically, is analyzed for compliance with baseline Chapter 91 standards, including height, open space, public access, and facility of public accommodation requirements. Additionally, the anticipated regulatory pathways for future blocks, including the potential preparation of a Waterfront Development Plan is discussed. The evaluation shows that Block C will comply with applicable Chapter 91 standards. The approach to Chapter 91 licensing for future phases has been evaluated but will ultimately be determined when those buildings proceed into design and future permitting.

Wetlands and Stormwater Management

Existing wetland resource areas, including Land Subject to Coastal Storm Flowage, are described and how the Master Plan Project will comply with applicable wetlands regulations and stormwater management standards is evaluated. The Master Plan Project proposes elevating the Master Plan Site and implementing a comprehensive stormwater management system designed to retain and treat runoff, comply with state stormwater standards, and improve water quality.

Transportation

A transportation analysis of existing and future conditions associated with the Master Plan Project, as well a detailed approach to the Phase 1 Project specifically, evaluates vehicular traffic, pedestrian and bicycle connectivity, transit access, parking, and freight operations. Traffic operations under existing, no-build, and Phase 1 build scenarios are analyzed; site access, truck routing, and multimodal connectivity are assessed; and transportation improvements and transportation demand management strategies are discussed.

The Project introduces a new street network, multimodal improvements, and transportation demand management measures intended to reduce single-occupancy vehicle use and improve safety and accessibility. The analysis demonstrates that, with proposed mitigation measures, the Phase 1 Project transportation impacts can be accommodated within the surrounding roadway network with signalized and unsignalized intersections continuing to operate at acceptable conditions.

Future phases will be subject to additional transportation analyses pursuant to the Special Review Procedure.

Infrastructure

Existing and proposed water supply, wastewater, and utility infrastructure serving the Master Plan Site are evaluated. The evaluation includes projected water demand, wastewater generation, and system capacity, and describes infiltration and inflow mitigation commitments. It is anticipated that utility infrastructure will be built out on a building-by-building or block-by-block basis and connect to existing systems in the surrounding area. The evaluation concludes that adequate utility infrastructure can be provided to support the Phase 1 Project and future development phases, and that required mitigation measures will ensure compliance with applicable infrastructure and wastewater regulations.

Hazardous Waste

Historic site contamination, documented as Massachusetts Contingency Plan ("MCP") disposal sites, and existing Activity and Use Limitations ("AULs") within the Master Plan Site are evaluated. A description of anticipated soil and groundwater management practices, coordination with a Licensed Site Professional, and response actions that will occur as redevelopment advances, are discussed.

Prior to the start of construction activities, an LSP will evaluate site conditions and conduct additional soil, groundwater, and/or soil gas sampling as appropriate. Construction activities which disturb contaminated soil or groundwater will be conducted in accordance with the provisions of MGL c.21E (and, potentially, C.21c), the Massachusetts Contingency Plan (310 CMR 40.0000), and all other applicable federal, state, and local laws, regulations, and bylaws.

Climate Change

The Master Plan Project's vulnerability to climate-related hazards is evaluated, including coastal flooding, sea level rise, storm surge, inland flooding, and extreme heat. Existing and projected climate conditions are discussed, applicable climate planning frameworks are summarized, and how the Master Plan and Phase 1 designs respond to future risk scenarios is analyzed. Emphasis is placed on site-wide resilience strategies, including site and street elevation, flood-resilient building design, green infrastructure, heat-related mitigation measures, planting over 1,000 new trees, and coordination with regional and City-led coastal resilience initiatives.

In addition, a comprehensive hydrodynamic modeling analysis assesses potential flooding changes (flood extent and flood depth) and changes in flood velocity (redirection and concentration of flood flows) associated with the Master Plan Project. The analysis shows that overall, the potential velocity increases that are predicted to occur would happen far into the future, under a full-build condition, and at an extremely low probability. As such, the risk is considered low and can be mitigated under future development phases, should sea level rise reach the projected elevations.

Greenhouse Gas Emissions

The Master Plan Project will be designed to minimize energy use to the maximum extent practicable, and with an understanding of the need to reduce greenhouse gas ("GHG") emissions. Commitments are made to energy conservation measures for the Phase 1 Project consistent with best practices provided by the Department of Energy Resources; future phases will be evaluated in future filings. A mobile source GHG emissions analysis is also included and shows that there will be a minimal increase in GHG emissions from Phase 1 Project traffic.

Construction Impacts

Construction impacts were evaluated in relation to demolition and construction, including noise, dust, traffic, air quality, and waste management. The Proponent has committed to Construction Management Plans, traffic coordination, emissions controls, recycling programs, and public safety measures. Construction impacts are expected to be temporary and appropriately mitigated.

Mitigation and Draft Section 61 Findings

A Draft Section 61 Finding is provided, along with a table that outlines proposed mitigation measures, timing of implementation, cost (if available), and responsible party.

Response to Comments

Comments letters received in response to the ENF are reproduced and specific comments are responded to in Chapter 14.

Chapter 1

Project Description

1.0 PROJECT DESCRIPTION

1.1 Introduction

Oxford Properties Group and Pappas Enterprises, Inc. (collectively "OxP" or the "Proponent") proposes a master plan for a mixed-use development (the "Master Plan Project") on approximately 41.66 acres of land in South Boston north of West First Street, east of E Street, south of Summer Street, and west of the Reserved Channel (the "Master Plan Site"). The Master Plan Site includes approximately 38.23 acres of land ground leased from the Massachusetts Port Authority ("Massport"), with the remaining approximately 3.43 acres owned in fee by the Proponent.

OxP partnered to form a joint venture in 2019 related to the Master Plan Site. OxP operates the Master Plan Site under a long-term ground lease with Massport that Pappas Enterprises, Inc. has held through various affiliates since 1965, as well as by fee ownership of certain adjoining land areas.

Approximately 12.86 acres of the Master Plan Site is proposed to be developed first (the "Phase 1 Site"). The development of the Phase 1 Site is proposed to include primarily residential uses along West First Street with ground floor retail, and commercial uses within a block to the north along Pappas Way (the "Phase 1 Project").

The Proponent (or an affiliate entity to be formed) will undertake the Master Plan Project which proposes to redevelop the Master Plan Site with a shared community vision for creating an inclusive and vibrant development that connects to the neighborhood in thoughtful ways and invests in creating spaces where new and current neighbors and businesses can thrive. The Master Plan Project envisions improved and expanded public sidewalks along West First Street, which borders the existing residential area, with thoughtfully designed open spaces, high quality landscaping, and new building heights and massing that respect and connect with the adjacent South Boston residential neighborhood. Pappas Way, with frontage along the Reserved Channel, will be reimagined to support improved access to the waterfront. Within the Master Plan Site, new roadways will connect from east to west between E Street and Pappas Way, and from north to south from West First Street toward Summer Street. The Master Plan Project will include a mix of uses to provide a dynamic district, including residential, retail, commercial, maritime industrial, and research and development, complemented by a mixture of open space types from small plazas to large open spaces. Building massing and heights are proposed to respect the surrounding neighborhood along West First Street and the residential section of South Boston, with increasing building heights moving north, away from West First Street.

This Draft Environmental Impact Report ("DEIR") responds to the June 28, 2024 Secretary of Energy and Environmental Affairs' Certificate (the "Certificate") issued with respect to the Environmental Notification Form ("EENF") submitted on April 30, 2024.

1.2 Project Overview

1.2.1 Site Description

Master Plan Site

The Master Plan Site contains approximately 41.66 acres and is located in South Boston north of West First Street, south of Summer Street, and west of the Reserved Channel (the "Master Plan Site"). The Master Plan Site is located between the South Boston Waterfront and the well-established South Boston residential neighborhood, in close proximity to the expansive industrial and commercial facilities of the Raymond L. Flynn Marine Park ("RLFMP"), the Thomas M. Menino Convention & Exhibition Center ("MCEC"), the historic Fort Point district, and the Reserved Channel area. The Master Plan Site consists of approximately 38.23 acres of land, ground-leased by the Proponent from the Massachusetts Port Authority ("Massport"), with an additional approximately 3.43 acres owned in fee by the Proponent.

Phase 1 Site

An approximately 12.86-acre area within the Master Plan Site (the "Phase 1 Site") is proposed to be developed first and is made up of two separate areas, primarily consisting of impervious area including surface parking lots and staging areas, as well as industrial buildings. The first area, located on the northeastern side of West First Street between Pappas Way and E Street, includes a fee-owned parcel containing approximately 1.97 acres and approximately 5.68 acres which are ground leased from Massport, all of which are currently paved parking and construction lay down space; this area is herein referred to as Block A and Block B, further described below. The Yankee Line company currently occupies an approximately 9,900 square foot ("sf") building used for bus maintenance, storage, and ancillary office space within this first area. The second area, located at 647B Summer Street, is ground leased from Massport and consists of approximately 5.21 acres. The second area is located northeast of the first area, crosses Pappas Way and includes an area of watersheet within the Reserved Channel, and is herein referred to as Block C, further described below. Block C consists of an approximately 62,800 sf building, which is currently occupied by UPS and includes warehouse, shipping, and ancillary office space. There is a small, existing publicly accessible green space that is part of the waterfront shared-use path located along the southeastern portion of the Master Plan Site, which runs adjacent to the Reserved Channel.

1.2.2 Area Context

The Master Plan Site is located along the Reserved Channel within the South Boston neighborhood. The Master Plan Site is generally surrounded by commercial and industrial uses to the north and west, the MCEC and Lawn on D further west, residential properties to the south, and the Reserved Channel to the east. Parcels along the perimeter of the Reserved Channel and Boston Harbor are owned primarily by Massport, making up the majority of the Master Plan Site. Several parcels near the MCEC are owned by various city and government agencies.

Following an analysis of the existing building stock along key streets adjacent to the Master Plan Site, these properties exhibit conditions such as industrial uses with blank walls, large building setbacks, vacant storefronts, surface parking lots, and inactive ground floors with non-public facing uses, resulting in a largely fragmented experience for members of the public that limit connections to the South Boston Waterfront and the Boston Harbor. With the exception of the residential area south of the Master Plan Site, the existing conditions do not allow for an active public realm that provides residents or members of the public access this area of South Boston in a pleasant and safe manner.

The Master Plan Site is strategically located at a gap within this expansive network of open spaces that span the city, and is an opportunity to increase access and connectivity for the local communities and residents, connecting the traditional South Boston residential community with the newly developed Seaport area.

There are approximately 12 miles of accessible waterfront within a 30-minute walking radius of the Reserved Channel, however, for existing area residents in close proximity to the Master Plan Site there are limited accessible waterfront opportunities due to the industrial context present under existing conditions.

1.2.3 Master Plan Vision

The overarching vision for the Master Plan Project is a highly resilient, socially responsive, and dynamic urban transformation that creates long-term value, stitches the Seaport District with the residential South Boston neighborhoods, and establishes the Reserved Channel as the heart of an enduring waterfront focused on research, innovation and industry that is complemented by new housing opportunities. The driving vision is an evolution of today's predominantly industrial land into a mature, thriving urban nexus energized by its surroundings and their unique assets. Beyond the land use transformation, the Master Plan Project is conceived to leverage its unique relationship to the Reserved Channel and deliver on the Planning Principles identified through the many years of stakeholder engagement that precede this filing – among them:

1. A waterfront for all: transform the Reserved Channel into a distinctive waterfront which fosters community and well-being.

2. From an edge to a center: expand and internalize the benefits of an enlivened edge into the interior of the Master Plan Site.

3. A welcoming place: set the stage for moments of discovery, chance encounters and a variety of experiences.

4. Springboard for success: establish a launching pad for opportunity; a place for diverse home grown business to experiment and thrive.

5. A global leader in resilience: a long-term outlook with a view generations into the future.

6. A showcase for the best of South Boston: a place for local talent to shape the future of the neighborhood.

7. A partner in it together: a collaborative effort with ambitions to meet the evolving needs and aspirations of all neighbors.

Contextually, the Master Plan Project will complement and connect to its distinct neighboring districts, including the Seaport District, the established South Boston and Telegraph Hill residential neighborhoods, the expansive industrial complexes of Massport and the Raymond L. Flynn Marine Park, and the historic and creative Fort Point Channel neighborhood.

The long-term vision includes new and diverse open spaces, multimodal connections, resilient infrastructure, and public benefits for both the new residents, visitors, and tenants, as well as surrounding neighbors. The Master Plan Site design proposes 11 development blocks ranging in size from approximately 0.6 acres to 3.8 acres, with most blocks anticipated to be between 2 and 3 acres. This combination of smaller, mid-sized, and larger development blocks will provide a range of development opportunities capable of accommodating market-responsive building footprints.

Along the Reserved Channel waterfront, an approximately 3.04-acre active open space is proposed, ringed by programmed uses and interconnected pathways, incorporating wildlife habitat, storm surge protection, and direct physical access to the water. Additional public realm spaces, totaling approximately 8.46 acres, include larger open spaces for public gathering and stormwater management, a network of walkable, high-performance streets and sidewalks, and a series of landscaped pathways, active plazas, parklets, and courtyards.

The Master Plan Project design incorporates a long-term climate resilience strategy addressing coastal flooding, sea level rise, urban heat, and stormwater flooding. Based on the best available climate science and sea level rise projections, the primary adaptation strategy is the elevation of the Master Plan Site, new buildings, and new streets, while integrating new development into the existing urban fabric and enabling future connections to city-scale resilience initiatives. The resilience strategy also includes comprehensive stormwater management and tree planting programs. Given that approximately 95% of the Master Plan Site is currently impervious, redevelopment presents a significant opportunity to reduce impervious surface area and introduce green infrastructure. Collectively, these measures will reduce risks associated with stormwater flooding, coastal flooding due to storms and sea level rise, and urban heat island effects.

1.2.4 Project Description

1.2.4.1 Master Plan Project

The Master Plan Project will redevelop approximately 38.23 acres of land ground-leased by the Proponent from Massport, as well as approximately 3.43 acres owned in fee by the Proponent. The Master Plan Project is anticipated to include a total of approximately 5,998,000 sf of development across 11 blocks.

The Master Plan Project program is proposed to include approximately 4,079,000 sf of commercial office and research laboratory uses, approximately 205,000 sf of hotel space (approximately 224 keys) planned with facilities of public accommodation anticipated to include a public marina, approximately 1,496,000 sf of residential uses (approximately 1,578 residential units), and approximately 218,000 sf of retail and/or amenities uses. The anticipated distribution of the Master Plan Project program is as follows (Table 1-1 provides a program summary):

Block A: Three buildings with approximately 407,000 sf of residential uses containing approximately 400 residential units. Across the three buildings will be approximately 13,000 sf of retail and/or amenity space.

Block B: Three buildings with approximately 501,000 sf of residential uses containing approximately 535 residential units. Across the three buildings will be approximately 30,000 sf of retail and/or amenity space, including a space designed to be able to accommodate a small grocery.

Block C: Two buildings with approximately 567,000 sf of commercial research laboratory uses and approximately 41,000 sf of retail and/or amenity space.

Block D: Two buildings with approximately 541,000 sf of commercial research laboratory uses and two residential buildings with approximately 190,000 sf of residential use containing approximately 207 residential units. Across the four buildings on this block, there will be approximately 30,000 sf of retail and/or amenity space.

Block E: Two buildings with approximately 944,000 sf of commercial research laboratory uses and one residential building with approximately 212,000 sf of residential use containing approximately 232 residential units. Across the three buildings will be approximately 30,000 sf of retail and/or amenity space.

Block F: No buildings are proposed for this block.

Block G: One building with approximately 325,000 sf of commercial research laboratory uses and approximately 5,000 sf of retail and/or amenity space, as well as an approximately 5,000 sf amenity building.

Table 1-1 Master Plan Project Program

Block	Building	Height (ft)[1]	Commercial Research Laboratory[2] (sf)	Hotel (sf)	Residential (sf)	Residential Units	Retail/ Amenity (sf)
Block A	A1	77	-	-	73,000	66	8,000
	A2	183	-	-	229,000	221	2,000
	A3	107	-	-	105,000	113	3,000
Block B	B1	72	-	-	75,000	77	7,000
	B2	183	-	-	270,000	291	3,000
	B3	145	-	-	156,000	167	20,000
Block C	C1	64	121,000	-	-	-	36,000
	C2	153	446,000	-	-	-	5,000
Block D	D1	132	254,000	-	-	-	10,000
	D2	100	-	-	88,000	96	5,000
	D3	148	287,000	-	-	-	10,000
	D4	121	-	-	102,000	111	5,000
Block E	E1	164	424,000	-	-	-	10,000
	E2	141	-	-	212,000	232	10,000
	E3	164	520,000	-	-	-	10,000
Block F (Park)			-	-	-	-	-
Block G	G1	164	325,000	-	-	-	5,000
	G2	20	-	-	-	-	5,000
Block H	H1	141	-	-	186,000	203	4,000
	H2	164	373,000	-	-	-	10,000
	H3	148	376,000	-	-	-	5,000
Block I	I1	164	407,000	-	-	-	15,000
	I2	148	339,000	-	-	-	10,000
Block J	J1	132	207,000	-	-	-	10,000
Block K	K1	145	-	205,000	-	-	10,000
Master Plan Total			**4,079,000**	**205,000**	**1,496,000**	**1,578**	**218,000**
Phase 1 Total (Blocks A, B, C)			**567,000**	**0**	**908,000**	**935**	**84,000**

1 Height is measured from the building's design flood elevation ("DFE") to the top of the last occupiable floor. The DFE for residential buildings is 24.3 feet BCB (17.8 feet NAVD88). The DFE for all other buildings is 23.3 feet BCB (16.8 feet NAVD88).

2 The term "research laboratory" is defined under Article 2 of the Boston Zoning Code. Research laboratory space may be used by organizations in the fields of life sciences, biotechnology, engineering, and related fields. Uses within this space may include, but not be limited to, scientific experimentation, wet laboratory, dry laboratory, engineering, office, storage, and manufacturing.

Block H: Two buildings with approximately 749,000 sf of commercial research laboratory uses and one residential building with approximately 186,000 sf of residential use containing approximately 203 residential units. Across the three buildings will be approximately 19,000 sf of retail and/or amenity space.

Block I: Two buildings with approximately 746,000 sf of commercial research laboratory uses and approximately 25,000 sf of retail and/or amenity space.

Block J: One building with approximately 207,000 sf of commercial research laboratory uses and approximately 10,000 sf of retail and/or amenity space.

Block K: One hotel building containing approximately 205,000 sf of hotel use (approximately 224 keys) and approximately 10,000 sf of retail and/or amenity space which are anticipated to be facilities of public accommodation. A public marina is also anticipated.

Building Massing

The Master Plan Project proposes 24 distinct building volumes, ranging in height from one to 19 stories. Commercial office and research laboratory buildings will range from approximately four to ten stories, while residential buildings will range from approximately six to 19 stories. Building heights will generally step up from the Reserved Channel waterfront toward the interior of the Master Plan Site, creating a dynamic skyline while placing taller volumes inland. To respond to the existing neighborhood context, a row of lower-rise residential buildings (approximately six stories) will front West First Street, providing a transition in scale to the adjacent South Boston neighborhood. Refer to Figures 1-1 to 1-6 for an aerial locus map, existing conditions, full build plan, full site development sequencing, and Phase 1 Site development sequencing with interim conditions.

Buildings heights across the Master Plan Site are primarily regulated by two main factors: Boston - Logan International Airport Composite of Critical Airspace Surfaces Map ("Critical Airspace Map") height limitations and height limitations as set forth in M.G.L. c. 91 and the regulations promulgated thereunder as set forth at 310 CMR 9.00 et seq. ("Chapter 91") (which may be modified through certain mechanisms, such as a Waterfront Development Plan). In addition, the Fee Simple parcels are subject to zoning height limitations. All proposed building heights, including rooftop equipment, remain within the height limits established by the Critical Airspace Map, ranging from approximately 190 feet Boston City Base ("BCB") (approximately 183.5 feet North American Vertical Datum of 1988 ["NAVD88"]) to approximately 246 feet BCB (approximately 239.5 feet NAVD88) across the Master Plan Site. Where applicable, proposed building heights will also comply with 310 CMR 9.51(3)(e) and the Boston Zoning Code ("Zoning Code")[1].

[1] Land owned by Massport is not subject to the Zoning Code.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

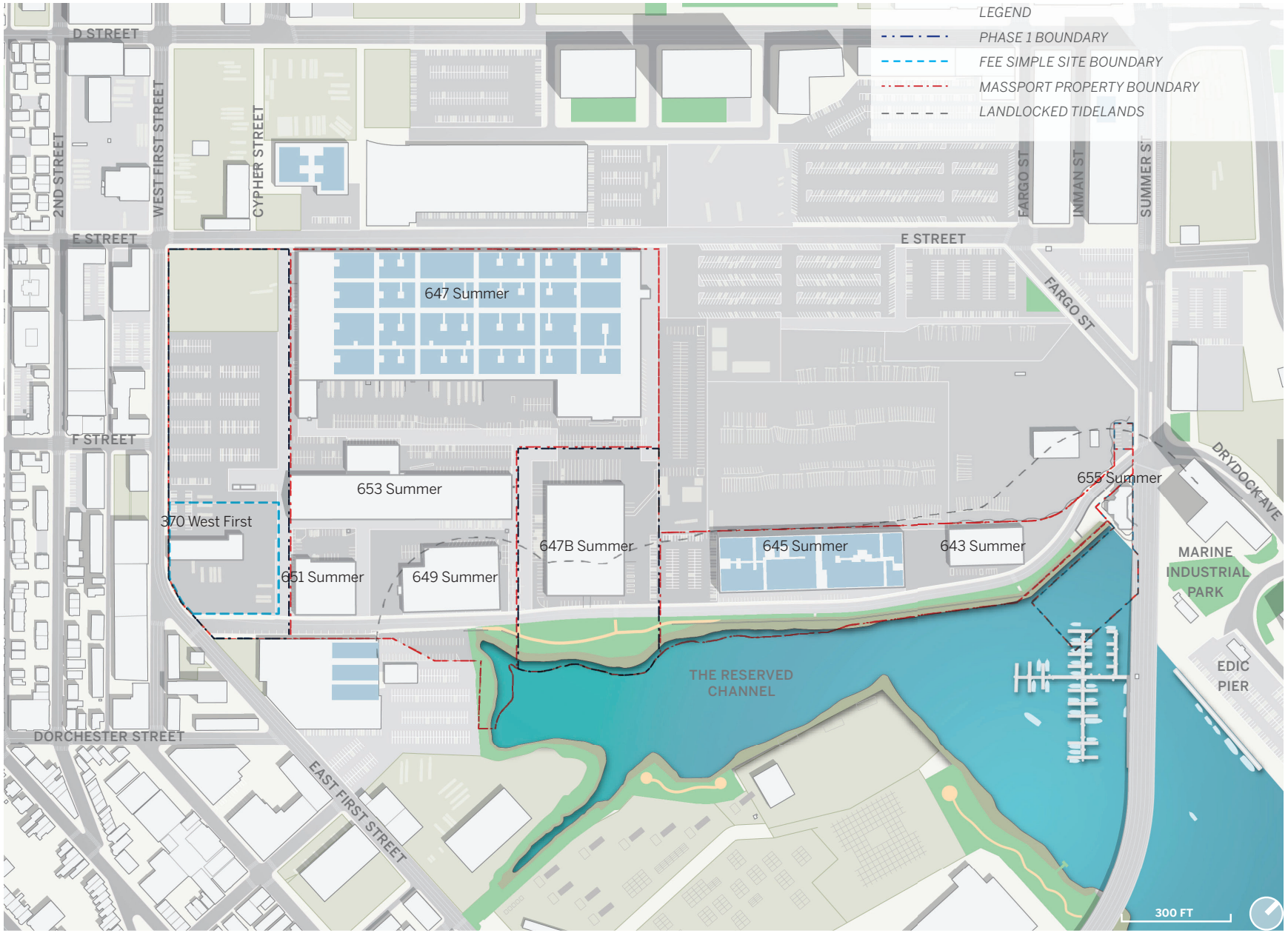


Reserved Channel Development Boston, Massachusetts

Epsilon Associates Inc.

Figure 1-1

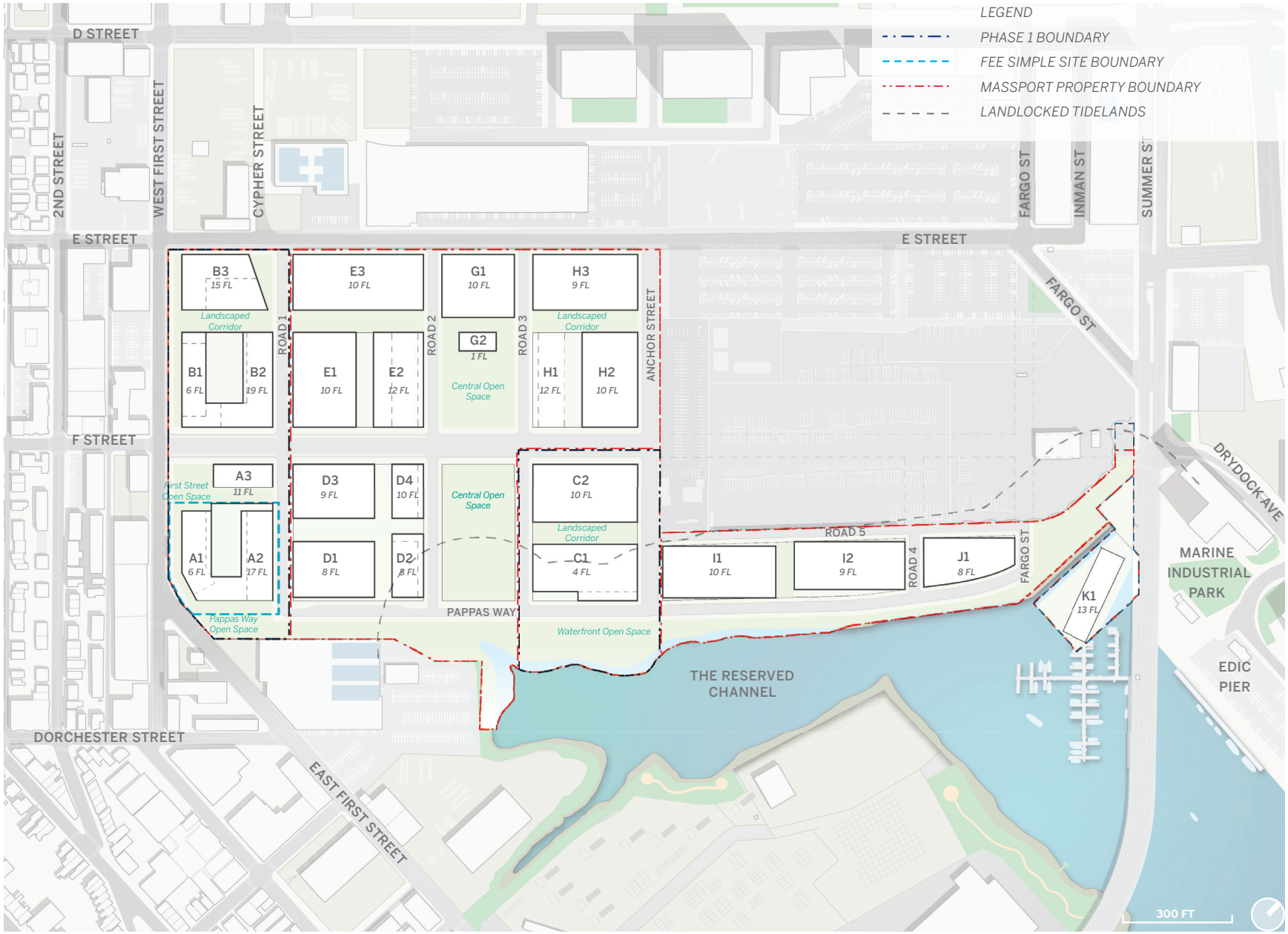
Aerial Locus Map



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

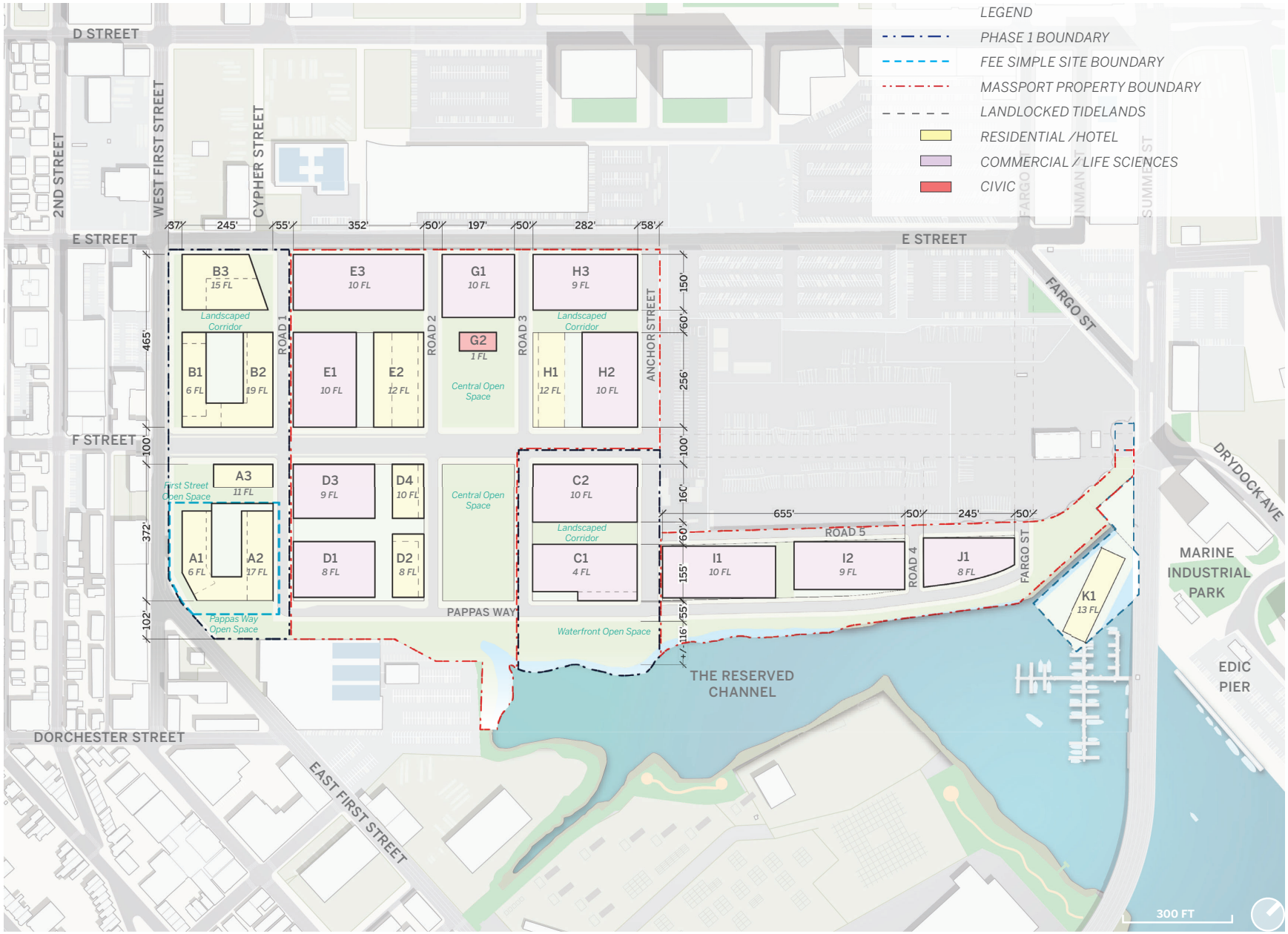
Figure 1-2
Existing Project Site



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

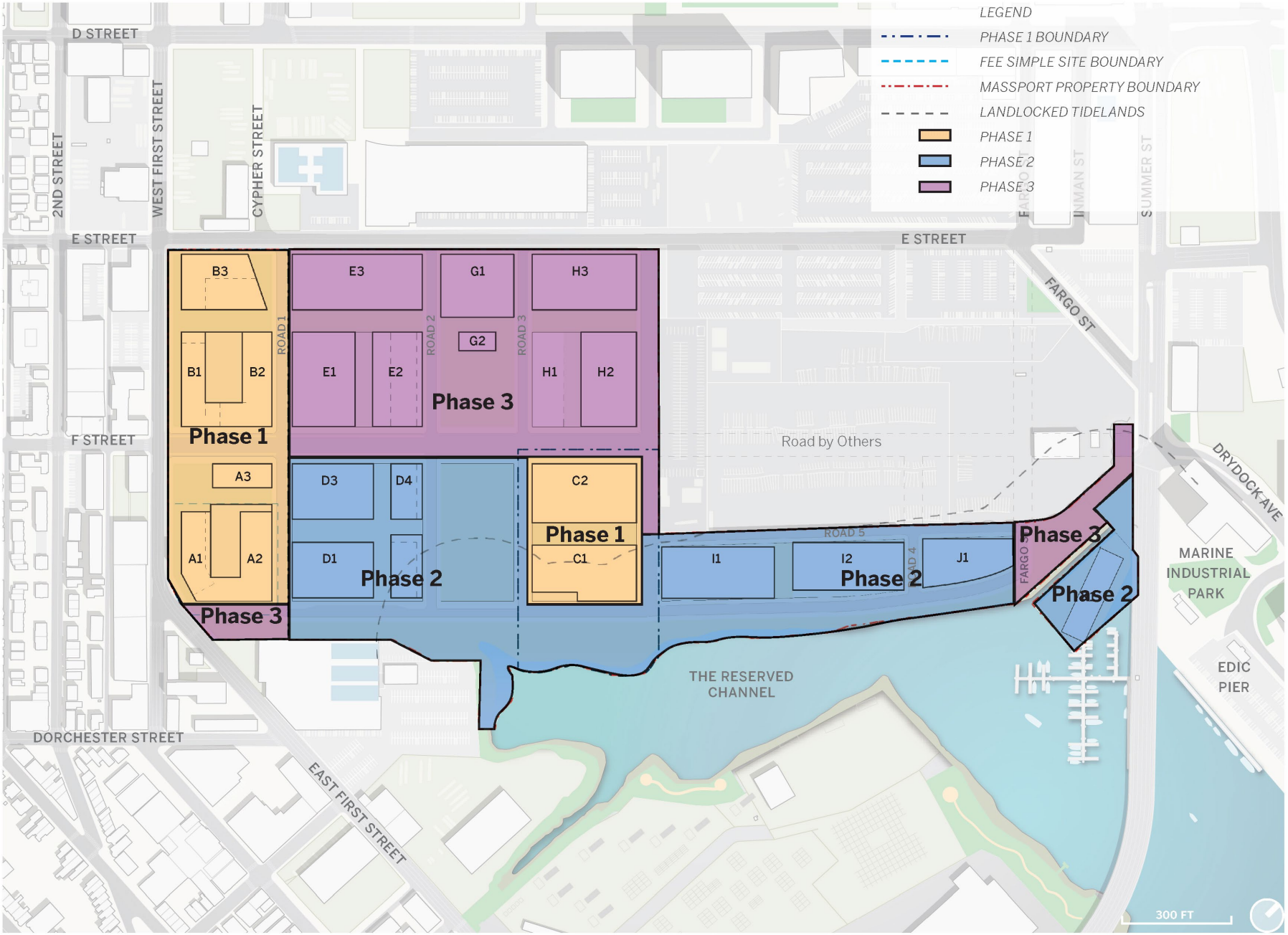
Figure 1-3
Full Built Plan



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

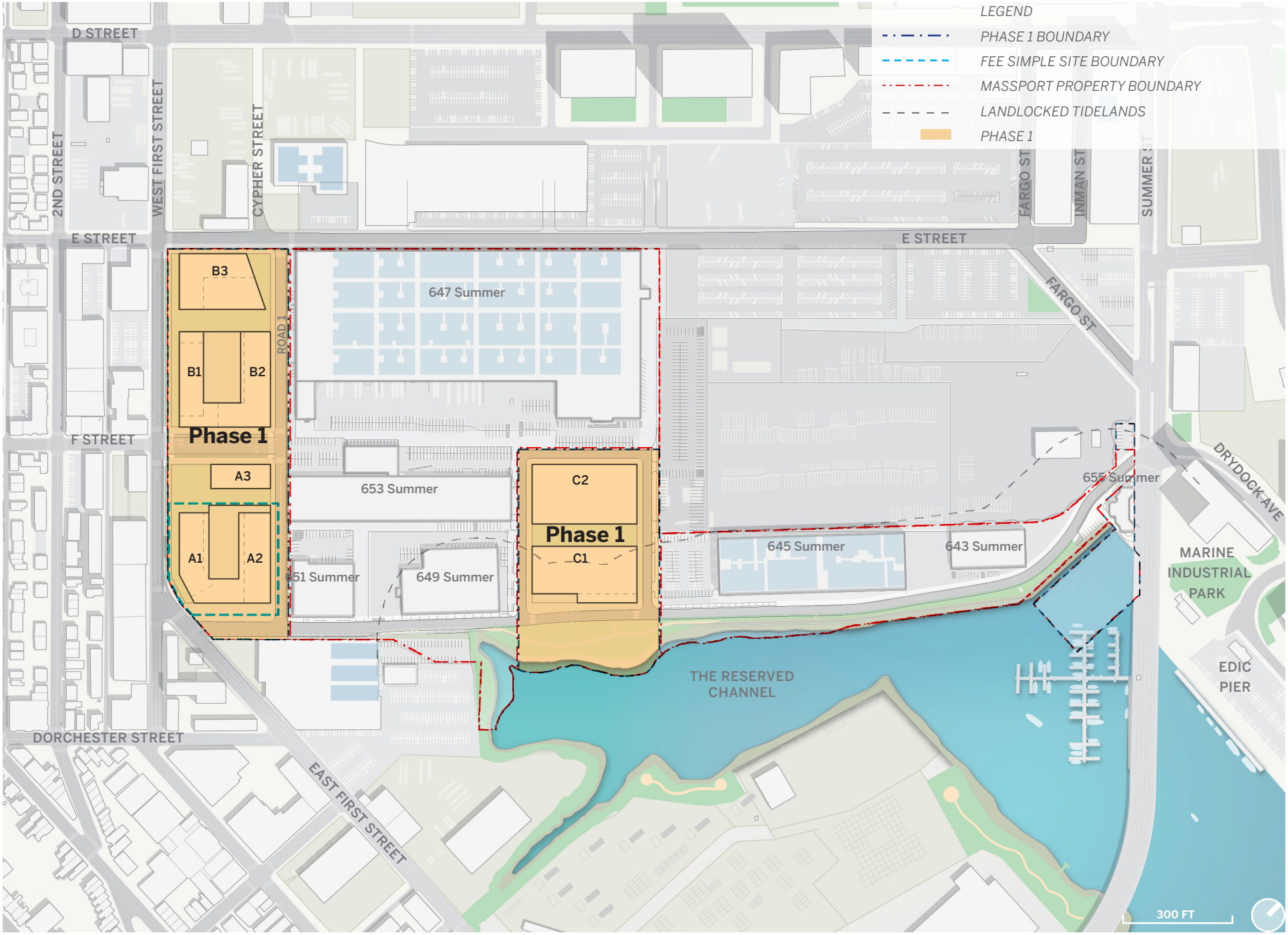
Figure 1-4
Full Site Building Plan with Programs



Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 1-5
Full Site Development Sequencing



Reserved Channel Development Boston, Massachusetts

Source: SOM

Figure 1-6

Phasing and Interim Conditions for Phase 1

Roads and Block Structure

The Master Plan Site currently functions as an isolated superblock with limited connectivity but significant freight traffic. Several surrounding streets terminate at the Master Plan Site boundary, and existing access easements primarily serve logistical functions rather than public circulation. The sole pedestrian connection through the Master Plan Site is the north-south Pappas Way.

The Master Plan Project framework introduces a rational and efficient street grid designed to reconnect the Master Plan Site to the surrounding urban fabric through both streets and pedestrian and bicycle networks. By extending several existing streets that currently terminate at the Master Plan Site edge, the Master Plan Project will improve access and enhance broader urban connectivity. This approach has been carefully balanced with consideration of regional logistics traffic and Massport's operational planning. Informed by broader area traffic patterns and planning, particularly critical freight routes serving adjacent industrial and port-related uses, the Master Plan Project's street grid has been deliberately configured to avoid introducing logistical traffic into the Master Plan Site and surrounding residential neighborhoods.

The Master Plan Project includes eight new streets, reconstruction of Pappas Way, and significant improvements to West First Street along the Master Plan Site frontage. Proposed rights-of-way include:

- **F Street (north-south):** Extends from West First Street to Anchor Street and functions as the commercial spine of the Master Plan Project, accommodating protected bike lanes, bus service, and active ground-floor uses, with generous landscaping and integrated stormwater management. Ultimately, Massport plans to further extend F Street northward to meet Summer Street and further to Northern Avenue.

- **Pappas Way (north-south):** Reconstructed as a low-volume, pedestrian-oriented waterfront street, vehicularly disconnected from Summer Street and West First Street, extending from Road 1 to Fargo Street.

- **Road 5 (north-south):** Extends from Anchor Street to Fargo Street, primarily serving Blocks I and J.

- **Roads 1, 2, and 3 (east-west):** Extend from E Street to Pappas Way.

- **Anchor Street (east–west):** Extended from E Street to Pappas Way, strengthening connections to the MCEC and Lawn on D.

- **Road 4 (east–west):** Extends from Road 5 to Pappas Way.

- **Fargo Street (east–west):** Extended from Road 5 to Pappas Way, with potential for future westward extension.

- **West First Street:** Approximately 1,110 feet of improvements including widened right-of-way, bi-directional bike lanes, expanded sidewalks, new landscaping, planters, and street furniture.

Streets and sidewalks are conceived as integral components of the public realm, prioritizing pedestrian comfort, safety, and activity while functioning as high-performance landscapes that provide shade, seasonal interest, and stormwater management. All rights-of-way will be designed taking into consideration the Boston Complete Streets guidelines and ultimately be subject to Massport approval.

Beyond the public rights-of-way, a network of pedestrian passageways and courtyards is integrated within development blocks to enhance permeability and facilitate movement toward the waterfront. These spaces will provide opportunities for retail activity, outdoor gathering, and respite. The Reserved Channel waterfront is planned as a continuously accessible open space that connects the Master Plan Site to the broader Harborwalk network.

Parking

Parking structures are proposed to be located below buildings on all of the blocks except Block K which is anticipated to include surface parking. It is anticipated that parking will be shared amongst the uses on each block. In total, the Master Plan Project proposes approximately 4,079 parking spaces. Parking is discussed further in Sections 7.3.6.3 and 7.3.7.3.

Open Space

A series of publicly-accessibly open spaces, plazas, pedestrian connections, and other upland and waterfront spaces, totaling approximately 11.50 acres (approximately 27% of the Master Plan Site area) are proposed[2].

Open space planned throughout the Master Plan Project includes several sub categories, including:

- **Primary Open Space:** Designated parks and other major community outdoor spaces that may include recreational programming, gathering areas, and community amenities.

[2] The term "open space", and related calculations, used throughout this DEIR typically refer to public realm consisting of publicly-accessibly, primarily outdoor areas intended for recreation, gathering, environmental functions (such as bioswales), landscape amenities, or visual relief within the built environment. Open space is separate from the road right-of-way and does not include sidewalks located within the right-of-way. Open space may be located on publicly or privately owned property, provided it remains open and accessible to the public. It should be noted that open space is defined differently in certain regulatory contexts, such as Chapter 91. Where appropriate in this DEIR, such as Chapter 5, "open space" may have a different definition and that definition is noted.

- **Landscaped Corridor:** Pedestrian corridors, generally located within a development block, that provide outdoor space, pedestrian circulation, and broader connectivity.

- **Landscaped Setback:** Landscaped areas located between planned buildings and the right-of-way, primarily intended to accommodate grade transitions, buffering, and streetscape enhancement.

- **Secondary Open Space:** Smaller-scale open spaces, including plazas, pocket parks, and minor pedestrian corridors.

- **Pier over Water:** Publicly accessible structure proposed over existing watersheet.

See Figure 1-7 for the proposed network of open spaces by type.

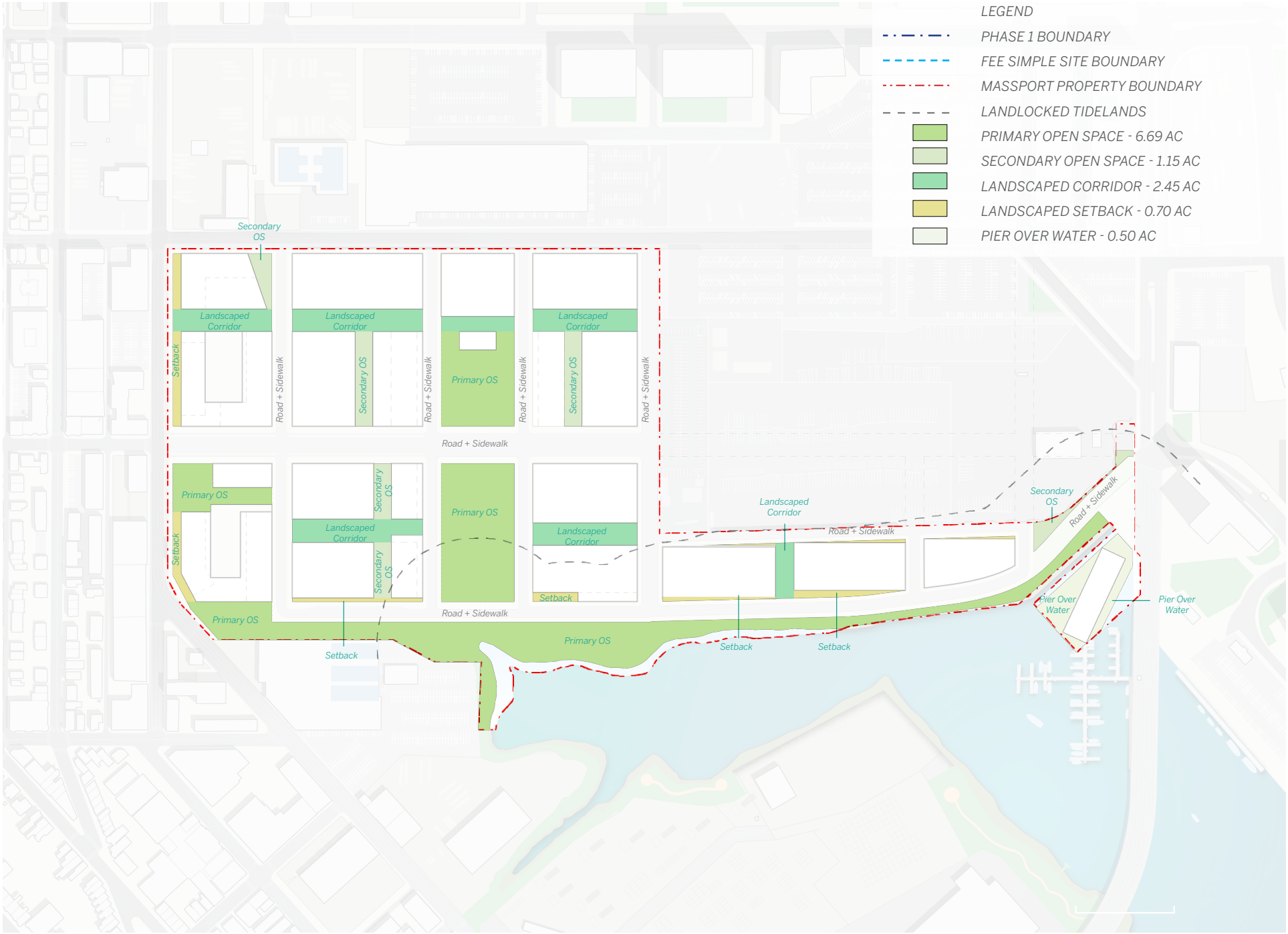
The main open space will be the Central Open Space which will cover the entirety of Block F (approximately 1.68 acres) and almost half of Block G (approximately 1.04 acres). The open space along the waterfront will be a linear open space connecting Summer Street down to the Pappas Way Open Space, a new space that will be created following the closer of the southern end of Pappas Way in the full-build condition. Additional open spaces include landscaped corridors between many of the buildings and the First Street Open Space located at the intersection of F Street and West First Street. Additional information about the Phase 1 open spaces, which will guide the development of the open spaces in other phases, is included in Appendix A.

Phasing

Figure 1-5, above, provides the conceptual development sequencing. The Master Plan Project is expected to be developed over an approximately 30-year period. The development of individual blocks and buildings may differ from the proposed sequencing and will depend on market and other conditions.

1.2.4.2 Phase 1 Project

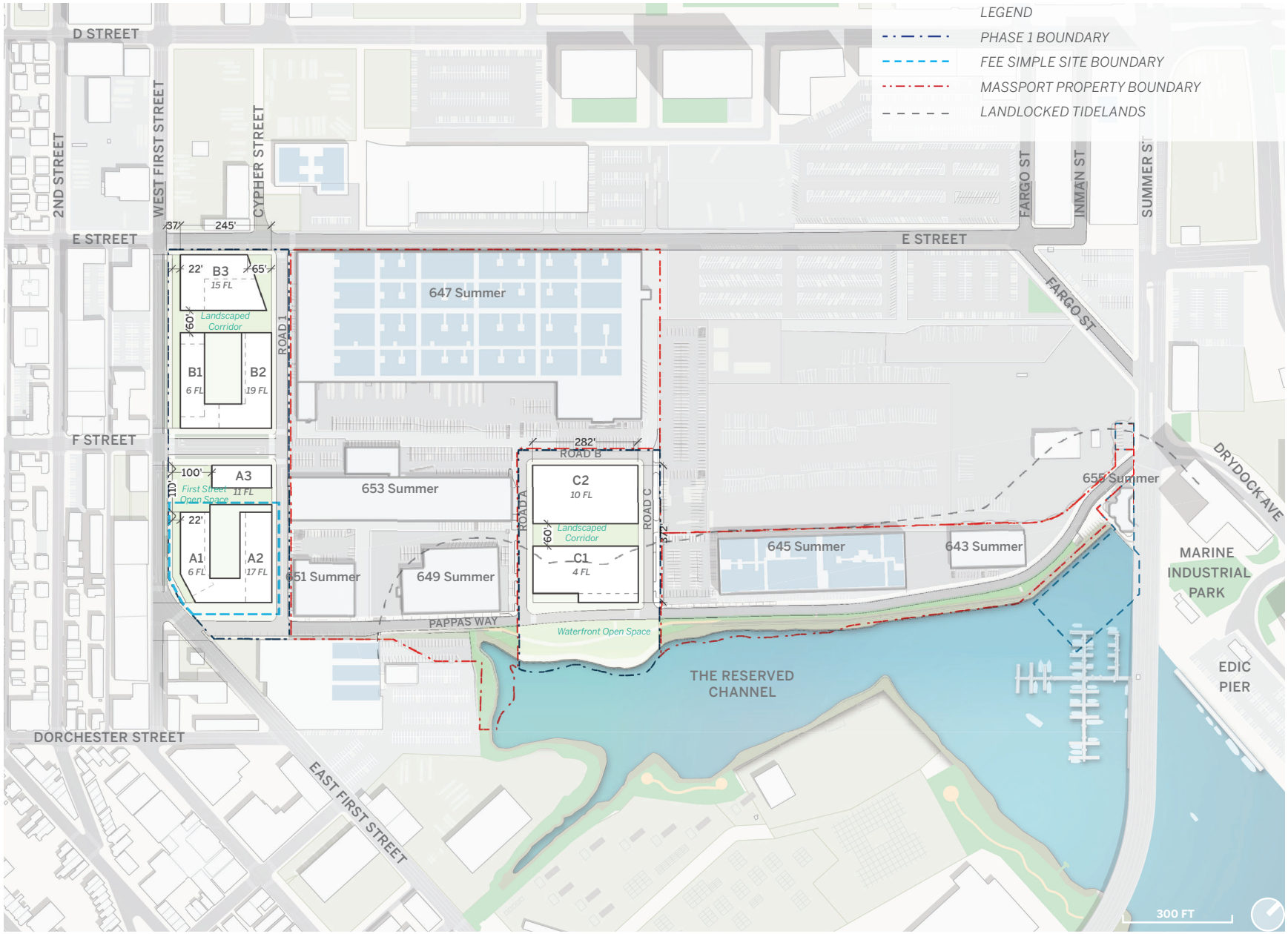
The approximately 12.86-acre Phase 1 Site consists of approximately 5.74 acres of building footprints, approximately 2.76 acres of open space including an approximately 1.00-acre waterfront open space, approximately 4.15 acres of road rights-of-way, and approximately 0.21 acres of watersheet area. Please refer to Figures 1-8 and Figure 1-9 for the Phase 1 plans.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

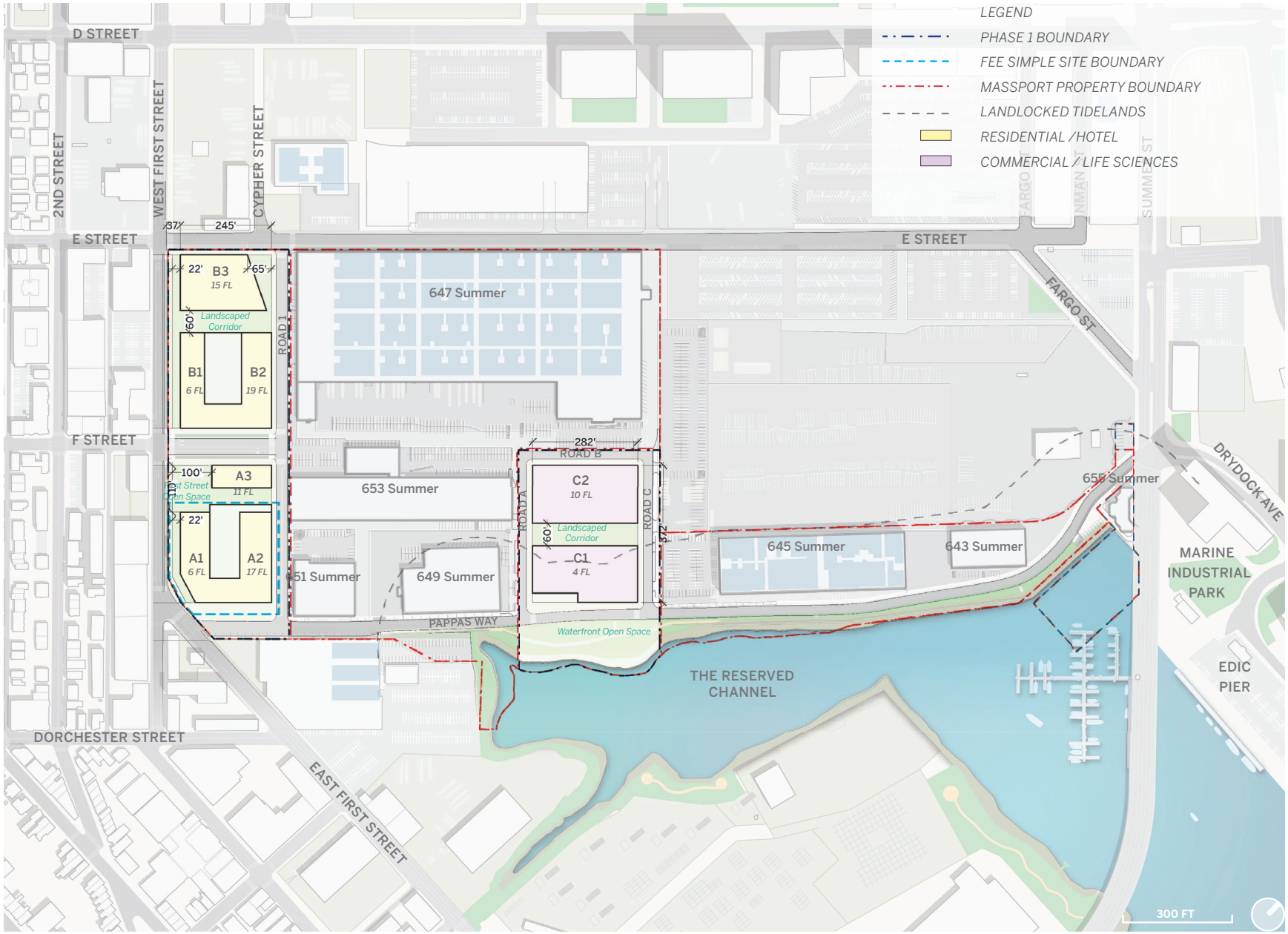
Figure 1-7
Master Plan Open Space



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 1-8
Phase 1 Plan



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 1-9
Phase 1 Building Plan with Programs

The Phase 1 Site will contain three new city blocks. Blocks A and B are situated along West First Street, and Block C is located along Pappas Way and the Reserved Channel.

- Block A is bound by West First Street, Pappas Way, the new F Street extension, and a new roadway identified herein as "Road 1."
- Block B is bound by West First Street, E Street, the new F Street extension, and Road 1.
- Block C is bound by Pappas Way, and new roadways identified herein as "Road 2," "Road 3," and "Road 4."

Phase 1 includes the construction of eight new buildings, totaling 1,559,000 sf ("the Phase 1 Project" or "Phase 1"). Primarily residential uses are proposed on Blocks A and B to complement the residential neighborhood to the south, while new retail spaces and open spaces will create activity and welcome neighbors onto the Phase 1 Site. On Block C, new commercial space will complement the surrounding commercial uses and provide additional uses to create activity during the day. Anticipated design details for the Phase 1 blocks including: program, building heights, and open space relationships can be found in the Design Guidelines included as Appendix A. The eight new buildings will include:

Buildings A1 and A2: Two residential buildings that will be built above a shared podium that will include retail/amenity space and parking. Building A1 will be located adjacent to West First Street with six levels above the podium containing approximately 66 residential units. Building A2 will be set back from West First Street and will include 16 levels above the podium with approximately 221 residential units. The roof of the podium will also include tenant spaces.

Building A3: A 11-story residential building with approximately 113 units and ground floor retail and/or amenity space. The First Street Open Space is proposed to the south of Building A3, and a Landscaped Corridor is proposed between Building A3 and Buildings A1 and A2.

Buildings B1 and B2: Two residential buildings that will be built above a shared podium that will include retail/amenity space and parking. Building B1 will be located adjacent to West First Street with six levels above the podium containing approximately 77 residential units. Building B2 will be set back from West First Street and will include 16 levels above the podium with approximately 291 residential units.

Building B3: A residential building with seven stories along West First Street, increasing to 15 stories containing approximately 167 units. The ground floor is being designed to be suitable for a grocer. A Landscaped Corridor is proposed between Building B3 and Buildings B1 and B2.

Building C1: A five-story mixed-use commercial building along Pappas Way, in front of the approximately one-acre waterfront open space, which is proposed to be revitalized. A portion of this building is located within Commonwealth Tidelands, the use and improvement of which are subject to licensing and use requirements set forth under Chapter 91 and licensing thereunder undertaken by the Massachusetts Department of Environmental Protection ("MassDEP"). The

building and related site will meet the regulatory provisions of Chapter 91, including building height, open space standards, and ground floor usage requirements.

Building C2: A 10-story commercial research laboratory building located west of Pappas Way. A landscaped corridor is also proposed between Buildings C1 and C2

Parking for Phase 1 will be located below grade within each block and the intent is that each garage will support the parking needs of the entire block. Phase 1 is proposed to include approximately 1,095 parking spaces, of which approximately 64% will support residential uses and 36% will support commercial uses. Further parking planning details can be found in the Design Guidelines included as Appendix A.

Roads

Phase 1 includes the construction of portions of roadway that will be expanded as future phases are developed. Road 1 (excluding its northern sidewalk) will be constructed between E Street and Pappas Way. F Street will be constructed between West First Street and Road 1. Roads A, B, and C will be temporary roadways constructed on the southern, western, and northern edges of Block C.

1.2.5 Changes Since the ENF

In response to feedback from the community, City of Boston ("City") and other stakeholders, the Master Plan Project has been revised in the following ways:

- Blocks A and B, which previously proposed a mix of commercial and residential space, will be entirely residential with ground floor retail. With this change in use, the program of the Phase 1 Project has been reduced by approximately 179,500 sf.

- The buildings on Blocks A and B have been moved further to the north away from West First Street; the buildings closest to West First Street have been set back an additional 12 feet, while the buildings further back have been moved an additional 63 feet further away from West First Street.

- Additional space has been provided on the Proponent's property to allow for a two-way bicycle lane on West First Street and additional space for pedestrians and landscaping.

- The area of the First Street Open Space has been slightly reduced to allow for a new residential building.

- Phase 1 planning has been adjusted to facilitate the addition of a new open space in the full-build condition. In the future, the southern portion of Pappas Way between Road 1 and West First Street will be closed and improved as a new open space.

- The ground floor of Building B3 is proposed to be designed to allow for a future grocer tenant.

- Building B3 has been modified in shape to not preclude a future direct connection from Road 1 to the west in the future if such a connection is determined to be appropriate.

- The new portion of F Street from West First Street to Summer Street has been planned in the context of Massport's planning ambitions to extend F Street beyond the Master Plan Site through to Summer Street and beyond.

- To support the Phase 1 increase in residential space, six future-phase buildings have increased in square footage: D1, D3, E1, H3, I1, and I2; to accommodate this increase in square footage, five of these buildings have increased in height by one floor. In addition, two buildings (H2 and J1) are proposed to decrease in square footage and Building K1 is proposed to increase by one floor. Overall, the commercial research laboratory square footage has increased by approximately 192,000 sf. Additional program changes include a 500 sf decrease in building D4, the addition of approximately 10,000 sf of retail space in building K1, and an overall increase in retail/amenity square footage of approximately 4,000 sf. Overall, the square footage of the Master Plan Project has increased by approximately 0.15% or 9,000 sf.

- The location and sizes of the proposed open spaces have been modified. The combination of these changes results in a total open space area of approximately 11.5 acres, with greater emphasis placed on the continuity of open spaces in closer proximity to the waterfront within a context most conducive to public enjoyment.

1.3 Permits and Approvals

Table 1-2 sets forth a preliminary list of permits and approvals from governmental agencies and authorities that are expected to be required for the Master Plan Project. It is possible that only some of these permits and approvals will be required, or that additional permits or approvals will be required.

Table 1-2 List of Anticipated Permits and Approvals

Agency	*Permit / Approval*
Local (Fee Parcels)	
Boston Civic Design Commission	Design Review
Boston Conservation Commission	Order of Conditions & Permit under the Boston Wetlands Ordinance
Planning Department and Boston Planning & Development Agency	Zoning Amendment approval Large Project Review PDA Development Plan approval Cooperation Agreement(s) Affordable Housing Agreement(s) Certifications of Consistency and Compliance
Boston Zoning Commission	Zoning Amendment approval PDA Development Plan approval
Boston Fire Department	Fuel Storage Permit(s)
Boston Transportation Department	Transportation Access Plan Agreement(s) Construction Management Agreement(s)
Public Improvement Commission and Department of Public Works	Sidewalk approvals
Boston Water and Sewer Commission	Site Plan Approval Temporary Construction Dewatering Permit Cross Connection/Backflow Prevention Approval Storm Drainage Approval
Interagency Green Building Committee	Article 37 (Green Buildings) review
Inspectional Services Department	Building Permit(s) Certificate(s) of Occupancy
Local (Massport Parcels)	
Boston Civic Design Commission (voluntary)	Design Review
Boston Conservation Commission (voluntary)	Order of Conditions & Permit under the Boston Wetlands Ordinance
Boston Planning & Development Agency (voluntary)	Large Project Review Cooperation Agreement(s)
Boston Transportation Department (voluntary)	Transportation Access Plan Agreement(s) Construction Management Agreement(s)
Public Improvement Commission and Department of Public Works	Sidewalk approvals (on City-owned property)
Boston Water and Sewer Commission	Site Plan Approval Temporary Construction Dewatering Permit Cross Connection/Backflow Prevention Approval Storm Drainage Approval
Interagency Green Building Committee (voluntary)	Article 37 (Green Buildings) review

Table 1-2 List of Anticipated Permits and Approvals (Continued)

Agency	*Permit / Approval*
State	
Massachusetts Department of Environmental Protection	Approval of Massport Waterfront Development Plan Chapter 91 License Notification of demolition and construction Notice of asbestos abatement activities (if required)
Massachusetts Historical Commission	State Register Review (via the MEPA process)
Massachusetts Water Resources Authority	Sewer Use Discharge Permit (tenant dependent)
Massachusetts Port Authority	Section 61 Findings under MEPA Flammable Storage License (Massport Fire Rescue/Fire Marshall)
Office of Public Safety and Inspections	Building Permit(s) (with respect to the portion of the Master Plan Project to be located on the Massport Parcel) Certificate of Occupancy (with respect to the portion of the Master Plan Project to be located on the Massport Parcel)
Federal	
U.S. Environmental Protection Agency	Notice of Intent – Construction General Permit
U.S. Army Corps of Engineers	General Permit Pre-construction Notification
Federal Aviation Administration	Determination of No Hazard (cranes and building)

1.3.1 Local Permit and Approvals (Fee Parcels)

Boston Civic Design Commission – Design Review

The development of the Fee Parcel is subject to Boston Civic Design Commission ("BCDC") review pursuant to Articles 28 and 80B of the Zoning Code. Two presentations to the BCDC have been made to date, with the first held on September 10, 2024 and a second on February 24, 2026. Review will continue as Phase 1 is reviewed by the City.

Boston Conservation Commission – Order of Conditions under the Boston Wetlands Ordinance

The development of the Fee Parcel involves work within wetlands resource areas defined under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and Boston Wetlands Protection Ordinance Regulations. The Proponent anticipates submitting a Notice of Intent to the Boston Conservation Commission.

Planning Department and Boston Planning & Development Agency – Large Project Review and Execution of Related Agreements; Certificates of Consistency and Compliance

Large Project Review provides a procedure for the comprehensive review of large development projects before and during the schematic design stage and affords the public the opportunity for

review and comment. The purpose of this review is to assess a project's impact on its surroundings and on City resources, and to identify necessary mitigation measures. The development of the Fee Parcel will be more than 50,000 square feet and therefore is subject to Large Project Review.

The Proponent submitted a Project Notification Form ("PNF") to initiate Large Project Review on November 17, 2023 for Phase 1, and a Scoping Determination was issued on December 11, 2024.

The Proponent will work with the City of Boston Planning Department and Boston Planning & Development Agency ("BPDA") to negotiate and execute the various agreements for the Master Plan Project, including one or more Cooperation Agreements and Development Impact Project Agreements as may applicable. A Certificate of Compliance is issued once the Proponent transmits to the BPDA a copy of the building permit application, including each plan, drawing, and specification. The Proponent will submit the necessary documentation to obtain a Certificate of Compliance.

The Director of the BPDA will issue a Certification of Consistency within 60 days after the BPDA has received the complete building, use, or occupancy permit. The Proponent will submit the necessary permit documentation to obtain a Certification of Consistency for the Fee Parcel development.

Boston Planning & Development Agency/Boston Zoning Commission – Zoning Amendment and Planned Development Area Development Plan

The Proponent will submit a PDA Development Plan to the City of Boston Planning Department for review and approval specific to the Fee Parcel (Block A). Following BPDA Board approval, the PDA Development Plan will be sent to the Boston Zoning Commission for approval. In connection with the PDA Development Plan, the Proponent will seek an amendment to the Zoning Code to permit additional height and FAR within the PDA Development Plan area.

Boston Fire Department – Fuel Storage Permit(s)

The Boston Fire Department issues permits allowing the storage of flammable fluids. The Proponent will apply for one or more Fuel Storage Permit(s) prior to relevant occupancy.

Boston Transportation Department – Transportation Access Plan Agreement(s), Construction Management Plan(s)

The Proponent will prepare for approval by the Boston Transportation Department, one or more Transportation Access Plan Agreement(s) to memorialize the mitigation measures that the Proponent will undertake to address the Master Plan Project's impact on the area transportation network.

The general contractor for the Proponent will prepare for review and approval by Massport and the Boston Transportation Department, one or more Construction Management Plan(s) identifying the impact from the timing and routes of truck movement and construction deliveries

for the Master Plan Project, including temporary street interruptions to allow for the proposed intersection improvements, and other matters. The Construction Management Plan(s) will provide a plan for implementing measures to mitigate, limit, or minimize, to the extent economically feasible, the construction impact of the Master Plan Project on the transportation network in the area. The Construction Management Plan(s) will also be reviewed and approved by Massport.

Public Improvement Commission/Department of Public Works – Sidewalk Approvals

The Boston Public Improvement Commission ("PIC") has care and control of Boston's public space, including public rights-of-way. In connection with the Master Plan Project, the Proponent anticipates that several PIC related actions may be necessary for work on City-owned rights-of-way. If required, the Proponent will petition the PIC to obtain approval for these actions.

Boston Water and Sewer Commission – Site Plan Approval, Temporary Construction Dewatering Permit, Cross Connection/Backflow Prevention Approval, Storm Drainage Approval

Site Plan approval by Boston Water and Sewer Commission's ("BWSC") Chief Engineer (or designee) is required in connection with any proposed connection or reconstruction, repair or modification of a water service pipe or fire pipe which connects to the BWSC's water distribution system, sanitary and combined sewers, and storm drain system. The Proponent will submit a Site Plan to the BWSC for approval.

Storm drainage approval is required to construct, effect, maintain, modify, or use a sewer system or connection. The Proponent will obtain this approval in connection with the Site Plan Approval. The sewer system connection permit is issued for a total flow quantity as determined through the permit application process. Additional connections contributing flow within the approved volume are not subject to a separate application. A sewer system connection permit may contain monitoring requirements to assure compliance with permit limitations. A permit may also contain requirements to report monitoring results. The Proponent will retain monitoring records as required.

BWSC must approve all plans for the installation of backflow prevention devices and, after installation, must perform the initial inspection and test of the backflow prevention devices. The Proponent will seek BWSC approval and inspection of backflow prevention devices.

BWSC issues a Construction Site Dewatering Permit allowing discharges to BWSC's wastewater or storm drainage systems. If required, the Proponent will obtain the requisite BWSC approvals prior to the anticipated date of initial discharge.

Interagency Green Building Committee – Article 37 Review

Article 37 (Green Buildings) of the Zoning Code requires all projects subject to Large Project Review to be certifiable under the LEED rating system. A Design Green Building Report will be submitted to the Interagency Green Building Committee prior to the Building Permit application.

Inspectional Services Department — Building Permit(s) and Certificate(s) of Occupancy

The Proponent will apply for the appropriate permits prior to construction and occupancy, including Use of Premises, Foundation, Occupancy, Erect/New Construction, and Garage permits as required by the Boston Inspectional Services Department as may be applicable.

1.3.2 Local Permit and Approvals (Massport Parcels)

Boston Civic Design Commission –Voluntary Design Review

The Proponent will subject the Master Plan Project to voluntary design review by BCDC pursuant to Articles 28 and 80B of the Zoning Code. An initial presentation to the BCDC was made on September 10, 2024, with a second made on February 24, 2026.

Boston Conservation Commission – Order of Conditions under the Boston Wetlands Ordinance

The Master Plan Project involves work within wetlands resource areas defined under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00). The Proponent anticipates submitting a Notice of Intent to the Boston Conservation Commission.

Boston Planning & Development Agency – Voluntary Large Project Review and Execution of Related Agreements

Large Project Review provides a procedure for the comprehensive review of large development projects before and during the schematic design stage and affords the public the opportunity for review and comment. The purpose of this review is to assess a project's impact on its surroundings and on City resources, and to identify necessary mitigation measures. The Proponent anticipates submitting the Master Plan Project components located on Massport land to voluntary Large Project Review by the BPDA.

The Proponent submitted a Project Notification Form (”PNF”) to initiate Large Project Review on November 17, 2023 for Phase 1, and a Scoping Determination was issued on December 11, 2024. Additional review is anticipated as buildings progress into design.

The Proponent will work with the City of Boston Planning Department and BPDA to negotiate and execute the various voluntary agreements for the Master Plan Project, including one or more Cooperation Agreements, and Development Impact Project Agreements as may be applicable.

Boston Transportation Department – Voluntary Transportation Access Plan Agreement(s)

The Proponent will voluntarily prepare one or more Transportation Access Plan Agreement(s) for approval by the Boston Transportation Department; such agreement(s) will memorialize the mitigation measures that the Proponent will undertake to address the Master Plan Project's impact on the area transportation network.

Boston Transportation Department – Voluntary Construction Management Plan(s)

The general contractor for the Proponent will prepare, on a voluntary basis, one or more Construction Management Plan(s) for review and approval by Massport; such plans(s) will identify the impact from the timing and routes of truck movement and construction deliveries for the Master Plan Project, including temporary street interruptions to allow for the proposed intersection improvements, and other matters. The Construction Management Plan(s) will provide a plan for implementing measures to mitigate, limit, or minimize, to the extent economically feasible, the construction impact of the Master Plan Project on the transportation network in the area. The Construction Management Plan(s) will also be reviewed by the Boston Transportation Department.

Public Improvement Commission/Department of Public Works – Sidewalk Approvals

The PIC has care and control of Boston's public space, including public rights-of-way (if any). In connection with the Master Plan Project, the Proponent anticipates that several PIC related actions may be necessary for work on City-owned rights-of-way. If required in connection with the Master Plan Project components located on the Massport Parcels, the Proponent will petition the PIC to obtain approval for these actions.

Boston Water and Sewer Commission – Site Plan Approval, Temporary Construction Dewatering Permit, Cross Connection/Backflow Prevention Approval, Storm Drainage Approval

Site Plan approval by the BWSC's Chief Engineer (or designee) is required in connection with any proposed connection or reconstruction, repair or modification of a water service pipe or fire pipe which connects to the BWSC's water distribution system, sanitary and combined sewers and storm drain system. The Proponent will submit a Site Plan to the BWSC for approval.

Storm drainage approval is required to construct, effect, maintain, modify or use a sewer system or connection. The Proponent will obtain this approval in connection with the Site Plan Approval. The sewer system connection permit is issued for a total flow quantity as determined through the permit application process. Additional connections contributing flow within the approved volume are not subject to a separate application. A sewer system connection permit may contain monitoring requirements to assure compliance with permit limitations. A permit may also contain requirements to report monitoring results. The Proponent will retain monitoring records as required.

BWSC must approve all plans for the installation of backflow prevention devices and, after installation, must perform the initial inspection and test of the backflow prevention devices. The Proponent will seek BWSC approval and inspection of backflow prevention devices.

BWSC issues a Construction Site Dewatering Permit allowing discharges to the BWSC's wastewater or storm drainage systems. If required, the Proponent will obtain the requisite BWSC approvals prior to the anticipated date of initial discharge.

Interagency Green Building Committee – Voluntary Article 37 Review

Article 37 (Green Buildings) of the Zoning Code requires all projects subject to Large Project Review to be certifiable under the LEED rating system. The Proponent will voluntarily provide documentation to the IGBC.

1.3.3 State Permit and Approvals

Massachusetts Department of Environmental Protection – Approval of Massport Waterfront Development Plan; Chapter 91 License, Notification of Demolition and Construction, Notice of Asbestos Abatement Activities (if required)

The Master Plan Project will require one or more Chapter 91 licenses from MassDEP. That application process will commence after the issuance of a Certificate on the Final Environmental Impact Report under MEPA. Certain parcels are expected to be subject to a Waterfront Development Plan which will be reviewed and approved by MassDEP. The Proponent will also provide MassDEP with a Notification of Demolition or Construction and a Notice of Asbestos Abatement Activities (if required), prior to the commencement of construction.

Massachusetts Historical Commission

Projects that require state licenses, permits and/or approvals, or utilizing state financing are subject to review by the Massachusetts Historical Commission ("MHC") in accordance with M.G.L. Chapter 9, sections 26-27C, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00). The submission of the Environmental Notification Form to the MHC initiated State Register Review. MHC did not provide a comment on the ENF, which completes MHC review.

If any federal funding, licenses, permits and/or approvals are required, such as an Army Corps of Engineers General Permit, the Master Plan Project will also be subject to review under Section 106 of the National Historic Preservation Act.

Massachusetts Water Resources Authority - Sewer Use Discharge Permit (tenant dependent)

The Master Plan Project will comply with all requirements of the MWRA, which may include issuance of a Sewage Use Discharge Permit in accordance with Title 40 of the Code of Federal Regulations Part 403, Section 403.14 and M.G.L. c.21 and 27. The Proponent will obtain a sewer use discharge permit as needed for particular tenant use.

Massachusetts Port Authority –Flammable Storage License (Massport Fire Rescue/Fire Marshal)

The Proponent will comply with all Massport requirements related to the development of the Master Plan Project, including obtaining a flammable storage license.

Massachusetts Port Authority – Section 61 Findings under MEPA

The Proponent will comply with all Massport requirements related to the development of the Master Plan Project. Proposed Section 61 Findings are provided in Chapter 13.

Office of Public Safety and Inspections – Building Permit; Certificate of Occupancy

The Proponent will submit an application for all necessary permits for development on Massport land from the Office of Public Safety and Inspections upon Massport's approval thereof, and obtain one or more new Certificate(s) of Occupancy for the Master Plan Project upon construction completion.

1.3.4 Federal Permit and Approvals

U.S. Environmental Protection Agency – Notice of Intent – Construction General Permit

The NPDES Construction General Permit requirements involve: (1) the filing of a Notice of Intent identifying the general operator of a project site and providing information on the project site itself, (2) the development and implementation of a Stormwater Pollution Prevention Plan with appropriate best management practices ("BMPs") to minimize discharge of pollutants from the project site, and (3) the submittal of a Notice of Termination when a development site has achieved final stabilization or stormwater is no longer being discharged.

The Proponent will file a Notice of Intent at least 14 calendar days prior to commencing earth-disturbing activities at a construction site. In addition, the Proponent will implement a Stormwater Pollution Prevention Plan as required by the NPDES program in connection with building construction.

U.S. Army Corps of Engineers – Massachusetts General Permits

Under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, the New England District of the U.S. Army Corps of Engineers ("Corps") administers both Nationwide Permits ("NWPs") and Regional General Permits ("RGPs") for certain activities subject to Corps jurisdiction in waters of the U.S., including navigable waters, within the boundaries of, and off the coast of, the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands.

Certain proposed activities may require review by the Corps under the NPWs, RGPs, and depending on the type and scale of the activity within Corps jurisdiction, could be subject to an

Individual Permit ("IP") issued by the Corps. To that end, prior to the commencement of construction activities, the Proponent will evaluate whether Corps' authorization(s) are needed and will comply with any applicable notification and review procedures.

Federal Aviation Administration – Determination of No Hazard to Air Navigation

The Federal Aviation Administration ("FAA") requires that parties proposing construction or alterations in close proximity to Logan Airport that meet specific criteria must submit Form 7460-1, "Notice of Proposed Construction or Alteration", so that the FAA can determine whether or not the proposed structure or other obstruction will potentially pose a hazard to air navigation. The Notice will include information regarding the alterations and attachments showing the type and location of the alterations.

The Proponent will submit Form 7640-1 for each building at least 45 days before the start date of the proposed construction or the date an application for a construction permit is filed, whichever is earliest, and will not commence construction until an FAA determination of no adverse impact to air navigation is received. The Proponent will also submit Form 7640-1 for the construction crane(s).

The Master Plan Project will be designed to comply with the Critical Airspace Map, which is expected to result in determinations from the FAA that there will be no hazard to air navigation.

1.4 Area Planning Context

1.4.1 Local Plans and Policies

1.4.1.1 Imagine Boston 2030

Imagine Boston 2030 is the City of Boston's first comprehensive citywide plan in 50 years, which was created with input from more than 15,000 residents. It provides a long-term framework to guide the City's growth through 2030 and beyond, focusing on affordability, equity, economic opportunity, sustainability, and resilience. The Plan is used as a policy and planning guide to shape decisions about housing, land use, transportation, and infrastructure, ensuring that Boston's future development supports vibrant neighborhoods and benefits all residents.

The Plan discusses several initiatives and goals that will help guide and align the Master Plan Project with the surrounding area. Specifically, it emphasizes increased housing production, supply, and affordability to enhance neighborhoods as well as the importance of a mixed-use core that contains a dense, walkable, mixed-use area. The vision for the South Boston Waterfront, and other adjacent areas, is identified as places where people can live, work, and gather with calls for expanding the inventory of affordable and market-rate housing, improving streetscapes and open spaces, and investing in transit and infrastructure to support growth.

The Master Plan Project shares many of the goals of Imagine Boston 2030, including the integration of new housing units, both market rate and affordable, commercial uses,

transportation connectivity, and open spaces that will create an inclusive environment that integrates with the surrounding areas. The design will re-imagine a largely industrial area with minimal public space, transportation connectivity, and amenities into a vibrant mixed-use development that supports a myriad of housing options, job creation, multi-modal transportation, and public benefits that have been encouraged throughout Imagine Boston 2030. Additionally, the Master Plan Project has thoughtfully planned for density while also creating significant new open space that will create the type of dense, walkable urban area sought in the plan.

1.4.1.2 Housing Boston 2030 (Housing a Changing City: Boston 2030)

The City of Boston's 2018 Housing Boston 2030 plan is an update to its original 2014 housing plan, "Housing a Changing City: Boston 2030." The update responds to faster-than-expected population growth and ongoing housing affordability challenges. Boston's population projection for 2030 increased from 709,000 to approximately 760,000, prompting the City to raise its housing production goal from 53,000 to 69,000 new units by 2030.

One of the focus areas within the document is on new construction and specifically mixed-use development to expand housing supply and meet the increase in population growth while ensuring affordability, equity, and sustainability. Of particular interest is the *Boston's Middle Class* section which discusses support of projects and planning that creates additional density near areas with good transit and infrastructure. With close proximity to several transportation hubs and MBTA services, as well as the new housing that is proposed, the Master Plan Project will directly promote this goal.

Additionally, the *Boston's Middle Class* section provides an action item of identifying and making available City- and State-owned real estate to build mixed-income housing. The Master Plan Project is being developed on Massport land that will bring new housing, including approximately 935 units in the Phase 1 Project, to the South Boston area supporting this initiative.

1.4.1.3 Raymond L Flynn Marine Park Master Plan

The Raymond L. Flynn Marine Park Master Plan ("RLFMP"; updated in 2022) is a comprehensive planning document that evaluates how the 191-acre marine park can preserve its industrial and marine industries while accommodating new types of economic activity and addressing infrastructure, environmental, and land use challenges. The plan emphasizes transportation improvements, climate resilience, and sustainability, aligning with Boston's broader goals under Imagine Boston 2030 and the Coastal Resilience Solutions for South Boston plan.

The Master Plan Site is not within the RLFMP, but is located across Summer Street from it. To ensure the Master Plan Project does not negatively impact the RLFMP, in particular related to transportation to and from the RLFMP, Massport and the City have undergone extensive planning to minimize and mitigate any potential impacts to this area. The Master Plan Project has proposed a site plan and infrastructure design to appropriately direct truck traffic to and from the RLFMP, while enhancing the transportation network for individuals that travel to and from the RLFMP.

The potential uses within the Master Plan Project may also complement the uses in the RLFMP, continuing the commercial activity that already exists in this area of South Boston.

1.4.1.4 South Boston Transportation Action Plan

Although not final, the South Boston Transportation Action Plan Draft Recommendations ("SBTAP"), currently dated April 4, 2025, is a comprehensive planning document that outlines a detailed strategy for improving transportation safety, accessibility, and mobility in the South Boston neighborhood. The plan proposes key recommendations such as rightsizing nine streets, redesigning over twenty intersections, expanding the bike network to 12.5 miles, adding sixteen new Bluebikes stations, and improving bus routes and accessibility. The SBTAP study area borders the Master Plan Site at West First Street.

The SBTAP specifically analyzed East First and West First streets and the various intersections the streets cross, including the intersection with Pappas Way. The long-term vision for these streets is to extend a two-way bike lane between L Street and B Street and to create a wider sidewalks, along with other improvements to support safety. In addition, the plan recommends working with the Proponent to redesign the intersection of Pappas Way, East First Street and West First Street.

The Master Plan Project has been revised since the ENF to provide for additional area along West First Street to support a two-way bike lane and additional sidewalk area. In addition, at full build-out (completion of all phases), Pappas Way is proposed to be closed on its southern end, eliminating the intersection of Pappas Way, West First Street, and East First Street.

1.4.1.5 PLAN: South Boston Dorchester Avenue

PLAN: South Boston Dorchester Avenue is a comprehensive planning report developed in 2015 by the BPDA to guide the long-term redevelopment of the Dorchester Avenue corridor between Andrew Square and Broadway Station in South Boston. Although the Master Plan Project does not fall within the study area of the plan, it is considered to be a transition zone between the residential and mixed-use areas that lie east of Dorchester Avenue and the heavy industrial uses within the RLFMP. The Master Plan Project has taken into account the role it plays within the greater context of the South Boston neighborhood and how the Master Plan Project will be relied upon as a bridge between the two land uses. The Master Plan Project seeks to improve connections to the areas surrounding it, provide new development that complements its surroundings, including new residential uses to the south and commercial uses to the north, and provide a plan that enhances the variety of uses and interests around the Master Plan Site.

1.4.1.6 East | West First Street Planning and Rezoning

The East|West First Street Planning and Rezoning Initiative established zoning amendments (Article 68 of the Zoning Code) that envisioned the First Street corridor as a vibrant, walkable mixed-use district. The Plan's priorities focused on transforming both East First and West First streets into pedestrian-friendly, residential-scale streets through the use of setbacks that create wider sidewalks and accommodate street trees to enhance the public realm. The initiative also

identified First Street as a transitional zone connecting adjacent residential areas with nearby commercial and industrial uses.

The Master Plan Project has reinforced this goal by situating residential uses with ground floor retail uses within Blocks A and B, thereby supporting the mixed-use character of West First Street while also providing significant open space and public amenities that align with the stated plans of making West First Street a multi-modal design corridor. The Master Plan Project has been designed to create a transition between the existing residential developments to the south and west and the larger-scale commercial/industrial uses to the north and east. The Master Plan Project's design mediates this shift in character through a graduated approach to massing, materiality, and program. Ground-floor active uses and generous landscaping create a pedestrian-friendly edge that softens the transition between the two areas, while maintaining visual and functional continuity across the West First Street corridor. In addition, the Master Plan Project proposes significant pedestrian and bicycle improvements on the edges and within the Master Plan Site.

1.4.1.7 South Boston Seaport Strategic Transit Plan

The South Boston Seaport Strategic Transit Plan (December 2023) was developed by the BPDA and Boston Transportation Department to improve multimodal transportation throughout the South Boston Seaport area. The plan responds to rapid growth in the Seaport, an area expected to nearly double in total square footage from 2018, and the mismatch between this development and limited transit capacity.

The Transit Plan discusses the addition of several potential transit options that could make the Reserved Channel Development and surrounding area more accessible, including the addition of neighborhood bus/shuttles connections, and dedicated bus/truck lanes and bicycle lanes.

The Proponent will continue to coordinate with the City and state to satisfy the Master Plan Project and City's shared goals for improved access to transit in South Boston. The Master Plan Project includes new infrastructure to create connections between the Seaport and South Boston neighborhood to the south, including F Street which is proposed to be a major transportation corridor.

1.4.1.8 Coastal Resilience Solutions for South Boston

The Coastal Resilience Solutions for South Boston report (October 2018) developed by the City outlines a comprehensive approach to protect South Boston's neighborhoods, infrastructure, and waterfront from sea level rise and coastal flooding. The Plan provides a blueprint for transforming Boston's vulnerable waterfront into a resilient, adaptive, and accessible landscape through a phased, district-wide approach combining near-, mid-, and long-term solutions. The Plan aligns with Imagine Boston 2030, Go Boston 2030, and Resilient Boston, aiming to integrate climate adaptation into citywide planning and regulation.

The Master Plan Project has taken recommendations from the Coastal Resilience Solutions for South Boston Plan by implementing several design recommendations, including the use of elevated waterfront parks and harborwalks, improved pedestrian access and open space, and coastal infrastructure improvements, all of which are encouraged to help offset the anticipated impacts from climate change. The Master Plan Project also proposes raising the Master Plan Site and building first floor elevations above predicted flood levels.

1.4.2 Regional Plans and Policies

1.4.2.1 MBTA Focus40

Focus40 was developed to respond to rapid technological, demographic, and environmental changes expected to reshape Greater Boston over the next two decades. The Plan aims to position the MBTA to meet the region's evolving mobility, economic, and environmental needs through a sustainable, data-driven, and community-informed approach. Building upon the vision and goals outlined in the Focus40 Plan, the Master Plan Project will support the MBTA's vision by providing new connections that support transit and creating development in areas that are supported by transit.

For additional information on the Master Plan Project's transit goals and improvements, please refer to Section 7.8.

1.4.2.2 MetroCommon 2050

MetroCommon 2050 is Greater Boston's long-range regional plan prepared by the Metropolitan Area Planning Council ("MAPC"). The intent of the Plan is to make the Greater Boston area more equitable and sustainable. The plan outlines 10 categories of goals around a vision of an idealized future: Getting Around the Region; Homes for All; A Climate-Resilient Region; A Net Zero Carbon Region; Dynamic and Representative Governments; Healthy Environment; Economic Security; Economic Prosperity; Healthy and Safe Neighborhoods; and, Thriving Arts, Culture, and Heritage.

The Master Plan Project shares many of the same goals as MetroCommon 2050, including:

- Integration of all modes of transportation in a way that creates a safe environment.
- Robust transportation infrastructure for bicyclists, pedestrians, and other personal mobility modes.
- New housing in a walkable area with access to transit and services that is available for a range of individual needs.
- Development that can withstand the impacts of climate change.
- Green infrastructure that provides multiple co-benefits, such as stormwater filtration, shade, etc.
- Development that seeks to minimize energy use.

- Development of an open space network to provide ecological benefit, recreational opportunities, and a visually appealing landscape.
- Revitalization of underutilized land to create new jobs, and also provide housing near new employment opportunities.
- Urban design that contributes to a human-centered public realm.

1.5 Public Benefits Summary

The Master Plan Project will generate many public benefits for the surrounding neighborhood and the City of Boston as a whole, both during construction and on an ongoing basis following completion. The discussion of public benefits below provides an overview of anticipated benefits; however, the Proponent looks forward to more discussion with the broader community as part of a comprehensive benefits package.

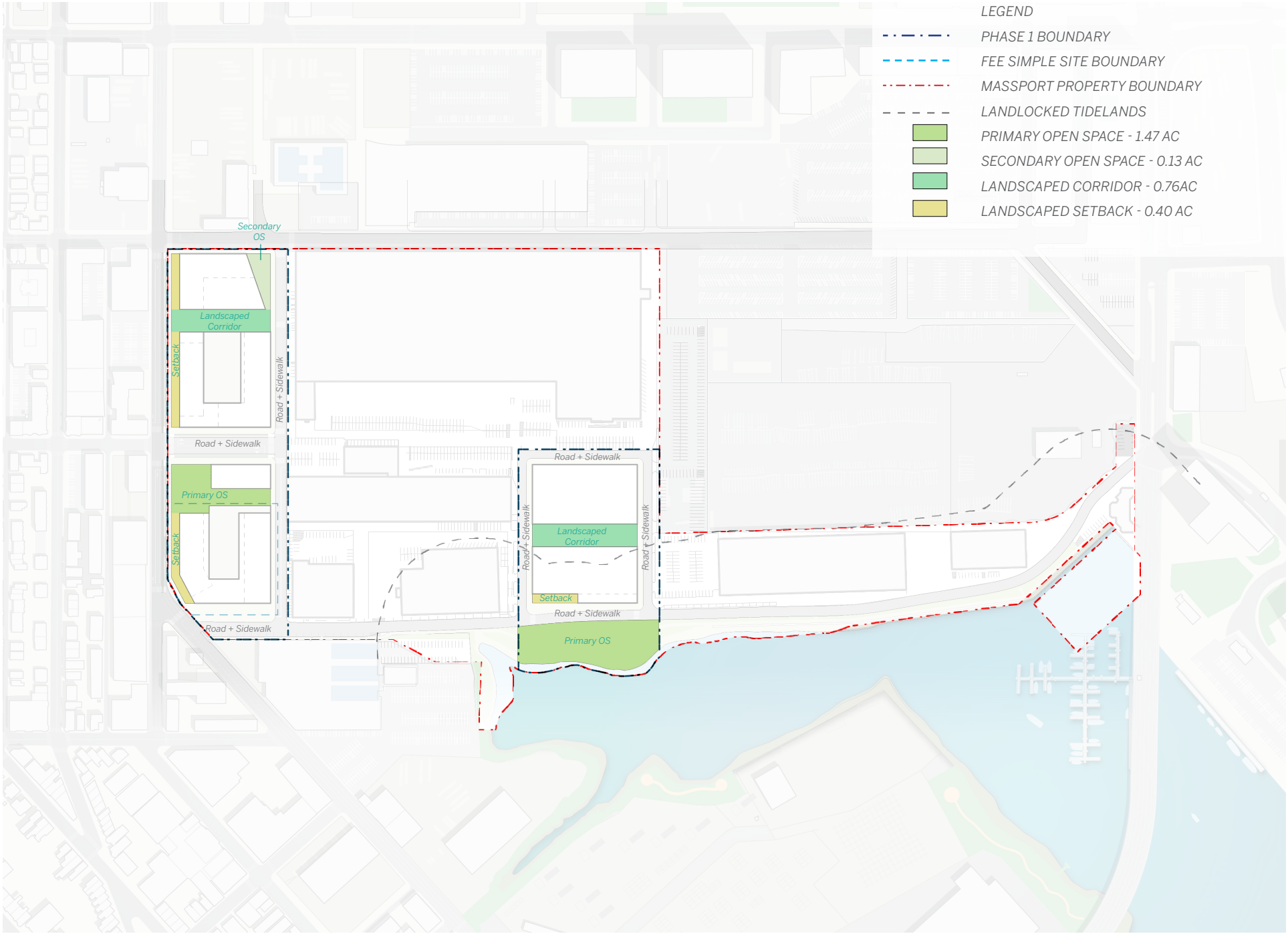
Open Space

The Phase 1 Project open space network is proposed to include approximately 2.76 acres of new publicly-accessible open space, including an approximately one-acre revitalized waterfront open space. The Master Plan Project proposes approximately 11.50 acres of open space when complete (see Figure 1-10). The Master Plan Project will include a new open space on the east side of Block A, adjacent to Pappas Way, which in the full-build condition will be expanded in place of the southern section of Pappas Way, creating a new community open space in a location preferred by the neighborhood. In addition, the Master Plan Project has an anticipated goal to have at least 25% canopy coverage within the first five years of tree planting on the Master Plan Site.

Improved Pedestrian Environment

The Master Plan Project will play an important part in the long-term aspiration for the Reserved Channel to connect the surrounding area to the water, and improve the public pedestrian experience, to serve as an important new leisure anchor to the South Boston community. It will also demonstrate a firm commitment towards the Master Plan Project's goals by accelerating investment, enhancing connections, and expanding amenities in the existing waterfront landscape and continuing to enhance its seasonal programming.

Under existing conditions, the Master Plan Site is an industrial and commerce hub that does not provide for a high-quality pedestrian experience. With connections limited to the singular north-south length of Pappas Way, there are currently no penetrating pedestrian connections through the Master Plan Site. The proposed Master Plan Project will transform the pedestrian experience and develop an increased urban connectivity to the surrounding South Boston neighborhoods as the Master Plan Project continues to develop and refine its approach within the broader neighborhood context. The proposed improvements will provide an engaging and inclusive urban environment.



Reserved Channel Development Boston, Massachusetts

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Source: SOM

Figure 1-10

Phase 1 Open Space

The Master Plan Project proposes to accomplish this through extending and creating several new streets that will break up this large portion of industrial land into smaller, more synchronized blocks with new sidewalks. The roadways and mid blocks that will be created as a part of this effort will all be designed taking into consideration the Boston Complete Streets guidelines and ultimately be subject to Massport approval. Active ground floor uses, including neighborhood-oriented retail and food establishments, will contribute to an active and vibrant streetscape, while space designed to support a grocery store is intended to provide convenient access to fresh produce and other staples.

In addition, the Master Plan Project will focus on meaningful public realm improvements outside of the Master Plan Site boundary to amplify short-term benefits to visitors, residents, and tenants, while fostering long-term community benefits and social equity. Improvements along Pappas Way and the new roads accessed off Pappas Way, include landscape plantings, bike lanes, site furnishings, signage, and safe pedestrian pathways to improve safety and enhance the pedestrian and bicycle experience between South Boston and the Reserved Channel waterfront.

New publicly-accessible open spaces, as well as a revitalized waterfront open space, are proposed as a part of the Master Plan Project. These new and improved open space areas will provide greenspace in an area that is primarily impervious with no public amenities. These improvements will allow for increased open space while also breaking up large, inaccessible blocks that currently exist.

Housing

The Master Plan Project proposes a significant contribution to address the City and Massport's shared goal of increasing housing options within the community. The Master Plan Project proposes approximately 1,578 residential units within ten buildings, an increase of over 730 residences (approximately 86%) compared to the project proposed in the ENF. The Proponent will work with the City, Massport, and community to determine the appropriate residential types, which may include market rate housing, workforce housing, and senior housing as individual buildings are developed.

Neighborhood and Site Resiliency

The Master Plan Site is uniquely situated in an area that will require careful consideration for present and future resiliency. The Master Plan Project has developed a resilience approach that addresses the risks of coastal flooding, sea level rise, urban heat, and stormwater flooding. The proposed primary resilience adaptation measure is to elevate most of the Master Plan Site, new buildings, and new streets, while blending the new development into the existing urban fabric and enabling future connections to city-scale adaptation plans.

The Master Plan Project is also committing to the City of Boston's carbon neutrality goal by 2050 through targeting LEED Gold certification and exceeding the minimum requirements of the new Stretch Energy Code.

Increased Employment

The Master Plan Project will create significant new construction and permanent jobs, both of which will include opportunities at a variety of skill levels.

New Property Tax

The Master Plan Project will result in increased tax revenues compared to the existing condition.

1.6 Community Outreach

1.6.1 Citizens Advisory Committee

The Citizens Advisory Committee ("CAC") was established in April 2024 through coordination with the MEPA office and City. The first meeting with the CAC was held virtually on April 22, 2024. CAC members attended additional public meetings, including the MEPA Site Visit on May 22, 2024. During these meetings, information about the Master Plan Project was presented followed by the opportunity for the CAC and other members of the public to provide comment and ask questions.

The comments and questions during these meetings, as well as the comment letters from CAC members (included in Chapter 14), were primarily on the following topics:

- Location of the open space on West First Street;
- Height of buildings;
- West First Street design;
- Flood resilience;
- Proposed uses; and
- Future of Pappas Way.

These comments have been addressed throughout this DEIR.

On September 25, 2024, MEPA held a meeting with the CAC to discuss the role of the CAC and allow for a conversation with the CAC to determine best practices.

Consistent with the Public Involvement Plan ("PIP") for the Master Plan Project, on October 8, 2025, the Proponent held a meeting with the CAC and public to provide an update on the Master Plan Project. The meeting was organized with the feedback and comments received on the previous ENF filing in mind, and in advance of the filing of this DEIR. During this meeting the Proponent shared proposed plan changes made in response to comments received from project stakeholders. Further, the CAC provided additional comments that have further informed the content of this filing.

At the CAC meetings, the PIP has been discussed. The PIP was provided in the ENF and has been made available on the Proponent's website for the Master Plan Project. The Proponent is not aware of comments or proposed changes to the PIP from the CAC. However, the PIP will continue to be a living document that allows for changes in the future.

1.6.2 Community Outreach

Following the Secretary's Certificate on the ENF, the Proponent spent time evaluating the Master Plan Project, its program, site design, and building forms. The Proponent has continued their ongoing community engagement strategy as outlined in the PIP. Specifically, the Proponent has continued to meet with public officials to provide updates and keep those officials apprised of future plans. Recurring community-based outreach efforts have also been maintained throughout the planning period. Most recently on September 18, 2025, the Proponent sponsored and attended a free Pappas Way Event to provide information on the Master Plan Project and talk to community members who were interested in the Master Plan Project. Over 150 participants took part in the event and 26 new names were added to the Master Plan Project's outreach list. The Proponent is actively planning similar community events to be held in 2026.

As it relates to more formal engagement and as noted above, a CAC/Public Meeting was held on October 8, 2025 to provide an update on the Master Plan Project.

The Proponent will continue to comply with the PIP which was provided in the ENF and provided separately to the CAC and community through the Master Plan Project's website. The PIP requires outreach to the CAC and members of the public during the review process, with the intent to continue a positive dialogue between the Proponent, community, City and state agencies. The Proponent has used best efforts to be proactive in keeping the CAC apprised of parallel public meetings respecting the Master Plan Project (e.g., BCDC) as they arise and has remained consistent in the distribution of Master Plan Project materials associated with meetings held. With submission of this filing for regulatory review and public comment, the Proponent has concurrently provided it to the CAC.

Chapter 2

Alternatives Analysis

2.0 ALTERNATIVES ANALYSIS

2.1 Introduction

The Secretary's Certificate requested program, height, and climate resiliency alternatives be analyzed. Since the review of the ENF, and as described in Section 1.2.5, the Master Plan Project has evolved based on market conditions and feedback received on the ENF. The Master Plan Project presented in this DEIR incorporates many of the alternatives that the Secretary's Certificate asked to be evaluated. Additionally, the Special Review Procedure for the Master Plan Project requires that the Phase 1 Project be severable from the remainder of the development of the Master Plan Site to not preclude alternatives for the remainder of the buildout in the future. To this end, the Proponent worked collaboratively with City of Boston's Planning Department to explore alternative outcomes that the framework could support. The result of this effort returned the identified 'other potential uses' listed for each block further described in Section 2.6 below.

To provide context for the explored alternatives, this chapter begins with a discussion of the Planning Principles for the Master Plan Project that served to inform the proposal. The chapter concludes with the criteria by which future parcel-specific proposals will demonstrate programmatic consistency with this DEIR.

2.2 Planning Principles

The Master Plan Project has been shaped by a set of powerful urban design drivers that respond to the Master Plan Site's maritime legacy, strategic waterfront location, and role within South Boston and the broader city context. These drivers inform both Phase 1 development and the long-term buildout of the approximately 41.66-acre district, ensuring that near-term improvements and investments contribute meaningfully to a resilient mixed-use neighborhood, a lasting civic presence, and a valuable economic asset.

- **Resiliency: Complete and Enhance an Exceptional Waterfront**

  Resilience is a core driver of the Master Plan Project and is integrated across site planning, open space, and building design. The Master Plan Project addresses coastal flooding, sea level rise, storm surge, urban heat island effect, and inland stormwater flooding, supporting the redevelopment prospects and long-term viability of this approximately 41.66-acre waterfront site.

  The primary resilience strategy involves building resilient infrastructure systems and elevating significant portions of the Master Plan Site, as well as elevating all new buildings and new streets within the Master Plan Site. For the buildings, which will be compliant with the Massport Floodproofing Design Guidelines, the finished floor elevations will align with City of Boston 2070 flood projections - approximately 23.3 feet BCB (16.8 feet NAVD88) for non-residential uses and approximately 24.3 feet BCB (17.8 feet NAVD88) for residential uses. Along the waterfront, Pappas Way will be realigned/shifted further

away from the water's edge and elevated to approximately 22.3 feet BCB (15.8 feet NAVD88). In addition, elevation of the Master Plan Site will be accommodated through sloped areas, landscaped terraces, steps, ramps, and other landscaped transitions that are integrated into the open space design to maintain accessibility, provide amenities (i.e., planting, seating, etc.) and enhance connectivity to surrounding neighborhoods. The tiered flood protection strategy will maintain waterfront access while providing robust flood protection against regular future tidal flooding and more extreme coastal flood events.

The plan establishes a continuous, publicly accessible waterfront, including approximately 3.04 acres of active waterfront open space, strengthening connections to the Harborwalk network. Existing conditions—currently approximately 95% impervious—are substantially improved through the introduction of landscaped areas, canopy tree plantings, permeable surfaces, and green infrastructure that support stormwater retention and infiltration and provide shade and cooling of the urban environment.

All new buildings are anticipated to exceed Stretch Energy Code requirements, be solar-ready, and target Leadership in Energy and Environmental Design ("LEED") Gold certification, consistent with Massport sustainability objectives.

- **Mobility: Extend South Boston's Street Network into a New, Walkable District**

The Master Plan Project improves access and enhances connectivity by extending existing South Boston streets into the Master Plan Site and introducing eight new public streets where none currently exist. Over the long term, the Master Plan Site's longest frontage of Pappas Way will be reconstructed and realigned to maximize public realm area adjacent to the waterfront, while in the nearer term, approximately 1,110 linear feet of West First Street will be reimagined across the Phase 1 Site in the east-west direction with the delivery of new bicycle infrastructure, wider sidewalks, and landscaping. Together, these improvements will provide pedestrian orientation and enhanced walkability between the South Boston neighborhood and the Reserved Channel.

Within the Master Plan Site, the new street network creates smaller, walkable blocks—generally 200 to 320 feet wide—enhancing permeability, improving pedestrian circulation, and strengthening connections to adjacent neighborhoods and employment centers—all while providing a breadth of public realm experiences for residents and visitors alike.

New streets prioritize pedestrian safety and multimodal mobility, incorporating generous sidewalks, bicycle accommodations, street trees and landscape plantings, and integrated stormwater infrastructure. Active ground-floor uses, including neighborhood retail and health and wellness amenities totaling approximately 218,000 sf, are concentrated along key corridors to support street activity and accommodate community needs and everyday uses.

- **Open Space: Create a Network of Upland Parks, Plazas, and Waterfront Destinations**

  Open space is a defining element of the Master Plan Project, with approximately 11.50 acres of publicly accessible open space distributed across the Master Plan Site (see Figure 1-7). This network includes an approximately 3.04-acre revitalized waterfront, approximately 2.7-acre central open space / upland park, approximately 0.5-acre First Street open space, and other smaller plazas, landscaped corridors, and high-performance streets that support a wide range of daily and seasonal activities.

  The open space network incorporates distinct places into an interconnected system—including parks, plazas, activity areas, streetscapes, and boardwalks—designed to accommodate recreation, support community events, and encourage informal gathering while enhancing pedestrian comfort and improving accessibility. The open space and landscape design draws from the Master Plan Site's industrial and maritime heritage, while responding to contemporary ecological, cultural, and social conditions.

  A robust tree planting strategy is integral to the open space framework, with a goal of achieving at least 25% tree canopy coverage within the first five years of planting. The full plan will add approximately 1,000 new trees and dramatically enhance the public realm. This expanded tree canopy helps to mitigate urban heat island effects, improves air quality, enhances stormwater performance, and supports long-term public health and well-being.

- **Implementation: Phasing and Long-Term Adaptability**

  The Master Plan Project is designed for thoughtful, incremental implementation, ensuring that early phases deliver meaningful public benefits and establish a durable framework for long-term buildout while accommodating existing businesses and honoring existing tenant lease obligations. Phase 1 introduces the essential urban structure—including new streets, publicly accessible open spaces, active ground floor uses, and a mix of residential and commercial research laboratory uses—setting the tone for future development.

  Beyond the approximately 1.7 million square foot Phase 1 (3 blocks, 8 buildings, approximately 2.76 acres of open space, and 5 streets), the broader approximately 41.66-acre Master Plan Project anticipates approximately 5,998,000 sf of development across 11 blocks and 24 buildings, delivered over multiple phases in alignment with existing lease expirations, market conditions, and infrastructure readiness. Each phase reinforces the core planning principles—resilience, connectivity, mixed-use vitality, and design excellence—while allowing flexibility to respond to evolving community needs, economic trends and market dynamics, and climate conditions.

  This phased approach supports Massport's long-term stewardship objectives by balancing near-term activation with sustained economic value, maintaining compatibility with ongoing industrial and port operations, and ensuring that the Reserved Channel evolves

into a resilient, inclusive, and productive waterfront district that is distinctly South Boston.

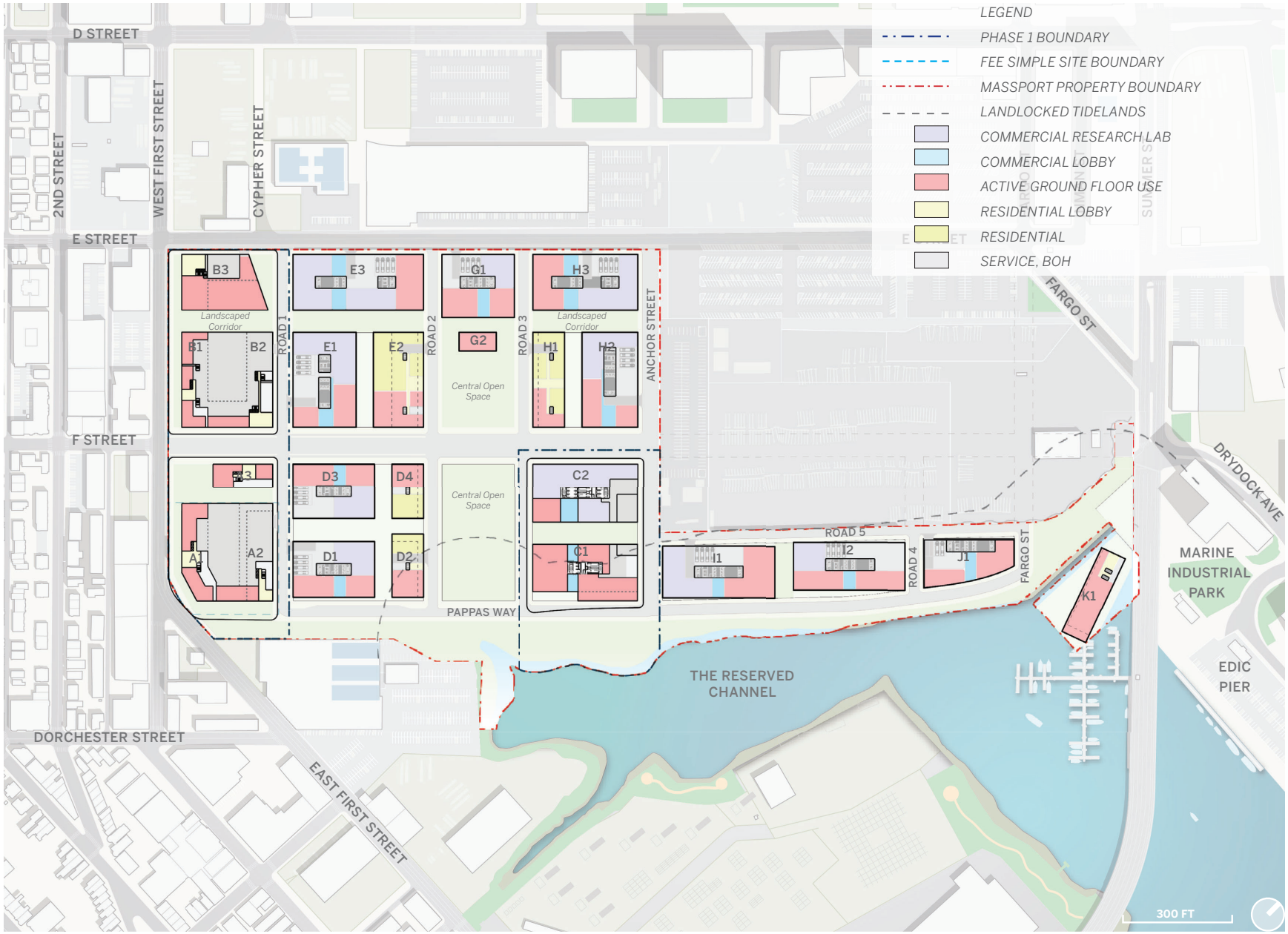
- **Create a Balanced Mixed-Use District**

  The Master Plan Project establishes a carefully calibrated mixed-use district across approximately 41.66 acres, designed to support a vibrant, inclusive, and economically resilient waterfront neighborhood conceived to complement and connect to the emergent Seaport District, the established South Boston and Telegraph Hill neighborhoods, and the expansive industrial complexes of Massport and the RLFMP. The Master Plan Project anticipates approximately 6.0 million square feet of development across 11 development blocks and 24 buildings, integrating research, innovation, and the potential of maritime industrial uses with housing, hospitality, retail, community-serving amenities, and a robust and resilient public realm.

  Anchored by approximately 4.1 million square feet of commercial research laboratory space, and maritime/industrial uses, the Master Plan Project reinforces Massport's broader mission to support job creation, economic development, and innovation tied to the area's heritage as a working waterfront and Massport's robust and on-going maritime and port operations. Residential uses total approximately 1.5 million square feet, delivering approximately 1,578 dwelling units across a range of building types and heights to support long-term neighborhood vitality, affordability objectives, and a true live—work environment. Complementary uses include approximately 205,000 sf of hotel space (approximately 224 keys) and approximately 218,000 sf of retail, cultural, and amenity space, concentrated at ground floors to animate and enliven streets, open spaces, and the waterfront (see Figure 2-1).

  The Master Plan Project is carefully calibrated to locate and distribute uses in response to the Master Plan Site's complex context, the proposed open spaces, and to ensure activity throughout the day and across seasons. Research and commercial uses are generally located within mid- to larger-scale blocks and along primary corridors, maritime/industrial uses are located along the existing E Street freight corridor, and the hospitality use is prominently situated along Summer Street on the redeveloped "watersheet," while residential buildings are strategically positioned to transition toward the existing South Boston neighborhood along West First Street. Retail, food and beverage, community facilities, and publicly accessible uses are embedded throughout the ground floors, reinforcing walkability and supporting daily needs.

  This mixed-use framework is intentionally designed to be delivered incrementally through phased development, beginning with Phase 1 which will deliver early housing, offer new employment opportunities, include neighborhood retail space, and generous open space, especially along West First Street. As subsequent phases build out, the district will mature into a fully realized waterfront neighborhood that balances economic productivity, residential and community life, and robust public access to the waterfront.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 2-1
Full Site Ground Floor Plan

- **Advocate Strong, Cohesive Urban Design**

  The Master Plan Project is guided by a clear and durable urban design framework that ensures long-term cohesion while allowing architectural excellence, flexibility, and innovation to evolve over time. The framework establishes a legible network of blocks, streets, and open spaces that transforms a formerly isolated industrial superblock into a connected, human-scaled urban district that integrates seamlessly with its surroundings. Informed by careful consideration of regional logistics, Massport's operational planning, critical freight routes serving adjacent industrial and port-related uses, the Master Plan Project's street grid is deliberately configured to avoid introducing logistics traffic into the future mixed-use development and surrounding residential neighborhoods. Instead, a rational and efficient street grid of well-designed streets, generous landscaped sidewalks, and a robust bicycle network frames flexible development blocks and large public open spaces at the center of the Master Plan Site.

  Across the Master Plan Project, 11 development blocks range from approximately 0.6 to 3.8 acres, with most blocks between 2 and 3 acres, offering development flexibility and supporting a variety of building footprints and typologies. Building heights range from one-story civic and pavilion structures to approximately 19 stories, with commercial research buildings generally ranging from 4 to 10 stories and residential buildings from 6 to 19 stories. Heights are carefully modulated to comply with Logan Airport airspace limitations and Chapter 91 waterfront requirements (which may be modified through a Waterfront Development Plan), while creating a dynamic and stepped skyline that rises from the waterfront and from the adjacent South Boston residential neighborhood toward the interior of the Master Plan Site.

  The Master Plan Project framework emphasizes contextual transitions, particularly along West First Street, where lower-rise residential buildings (approximately six stories) and landscaped setbacks provide a respectful scale transition to the existing South Boston neighborhood. Taller and denser building forms are strategically located toward the interior of the Master Plan Site, along the northern portion of the Reserved Channel, proximate to large open spaces, and along primary commercial corridors, reinforcing urban legibility while preserving access to light, air, and capitalizing on waterfront views.

  Importantly, the Master Plan Project is supported by Design Guidelines developed for Phase 1 (see Appendix A) that codify key principles related to building massing, ground-floor activation, façade articulation, materiality, and public realm integration. These guidelines are intended to ensure a high-quality and cohesive built environment from the outset, while providing a durable framework that can adapt to evolving architectural expression, market conditions, and community priorities in future phases.

- **Continued Inter-Agency Coordination**

  The Proponent will continue to actively share its planning goals, policies, and priorities for the Master Plan Site, developed in close coordination with Massport, with the City and regulatory agencies, as well as the South Boston community. The team seeks to ensure that present and future planning is the result of a collaborative effort that seeks to address the evolving needs and aspirations of all project stakeholders, while ensuring the Master Plan Project's viability to deliver on the breadth of goals outlined herein.

  With origins in the Master Plan Project planning effort, the Proponent is encouraged by the momentum the Master Plan Project has already afforded to adjacent area projects including the extension of F Street and the Basin Loop. Each of significant public benefit and expectant of continued close collaboration, these exemplify the greater potential of a shared vision that plans with the end in mind.

2.3 Master Plan Alternatives

2.3.1 Reduced Build Alternative

The ENF included a reduced build alternative that would include the construction of approximately 3,400,000 sf across 29 new buildings, while leaving the existing building at 655 Summer Street in place. Due to the smaller program, that alternative would result in fewer impacts. The Secretary's Certificate requested a new Reduced Build Alternative that results in a smaller program and more open space.

The Second Reduced Build Alternative modifies the Master Plan Project described in this DEIR in the following ways (see Figure 2-2 for a site plan for this alternative):

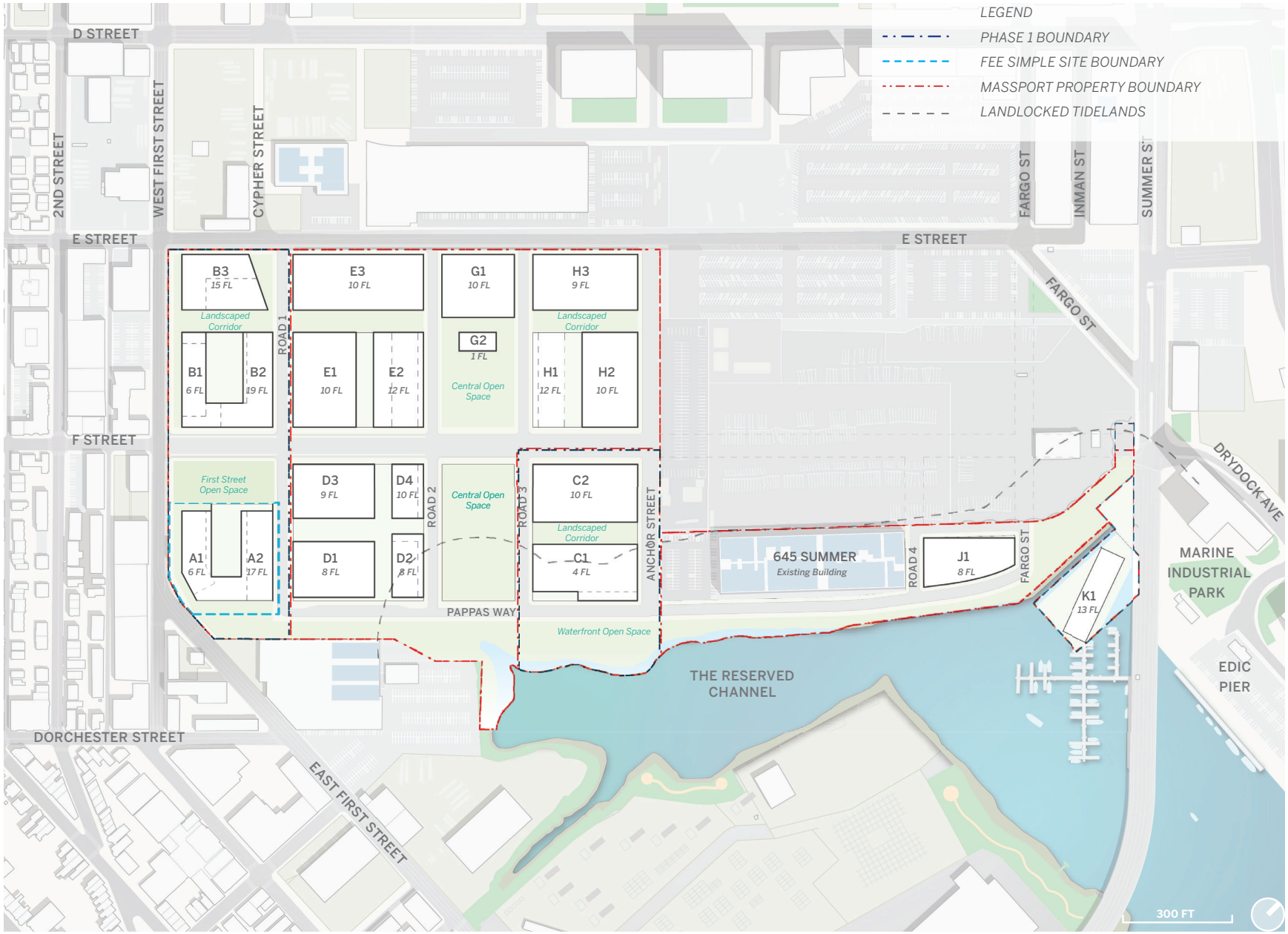
- Retains the existing building at 645 Summer Street and adjacent parking lot and site landscaping, reducing commercial square footage by approximately 621,000 sf and parking by approximately 437 spaces.

- Eliminates Building A3, resulting in a reduction of approximately 108,000 sf of building program (approximately 113 residential units and approximately 3,000 sf of retail space).

- Creates approximately 10,400 sf of additional open space with the elimination of Building A3.

- Eliminates the proposed increased elevation of the Master Plan Site.

This alternative would result in a program that is approximately 12% smaller, fewer parking spaces, and a small increase in open space. The number of vehicle trips and amount of wastewater generation and water use would be lower than the Master Plan Project. It is expected that there would be a small increase in pervious area. To reduce development costs, the site grade increase would be eliminated, leaving the Master Plan Site more susceptible to coastal storm surge.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: SOM

Figure 2-2
Alternative Study

However, with the lower site grade, other measures would be required, such as building-specific measures, which would add to the cost to develop those individual buildings. This building-by-building approach to climate resilience conflicts with the Master Plan Project's goals for create a resilient and adaptable development across the Master Plan Site.

In addition, the loss of a significant amount of commercial space would result in a financially infeasible development due to the significant loss of capital that is necessary to support residential development, open space, and other community benefits.

2.3.2 Reduced Heights Alternative

Buildings heights across the Master Plan Site are primarily regulated by two main factors: Critical Airspace Map height limitations for Boston Logan International Airport and Chapter 91 height limitations. In addition, the Fee Simple parcels are subject to zoning height limitations. The Critical Airspace Map which shows maximum heights that will not generate a hazard to air navigation shows that maximum heights can be highest on the southeastern corner of the Master Plan Site (approximately 246 feet BCB [239.5 feet NAVD88]) and decrease to the north and west (approximately 190 feet BCB [183.5 feet NAVD88]). Chapter 91 jurisdiction extends 250 feet inland from the Mean High Water Line covering most of the Master Plan Site from Summer Street to approximately 250 feet south of the southern edge of the Reserved Channel. Although there can be some flexibility in the placement of height within Chapter 91 Jurisdiction through the use of a Waterfront Development Plan ("WDP"), the Critical Airspace Map height limits typically cannot be exceeded.

The Secretary's Certificate requested an alternative that reduced height along West First Street and increased height in the central and northern areas of the Master Plan Site. The heights planned for the central and northern areas of the Master Plan Site have been moderately increased within the preferred alternative, an identifiable change from the ENF. While in several instances height could be increased further still before exceeding restrictions, to do so would compromise the intentional approach taken to variable heights along the length of the Master Plan Site. The Proponent and design team believe that variation in height provides a visual and urban design benefit to the development, compared to a monolithic approach. Along West First Street, variable building heights are also present. In addition, the design team is cognizant of the need for mechanical systems on rooftops which will not be designed until further in the future and could impact building heights.

Reducing the building heights on Blocks A and B would result in either a reduction in program square footage or the placement of buildings where proposed open spaces would be. For this analysis, the heights of the buildings on Blocks A and B were reduced to approximately 60 feet, while the heights of some buildings on other blocks were increased consistent with the Preferred Alternative. On the Phase 1 Site, the program would be reduced by approximately 560,000 sf; the Master Plan Project program would be reduced by approximately 361,000 sf. Although a reduced program would result in fewer vehicle trips, less wastewater generation and less water use, it would significantly impact the financial viability of the Master Plan Project. In addition, this

alternative would not include the primarily residential program now proposed for Blocks A and B which is the result of feedback from the community and the City.

Building additional buildings on the open spaces to make up for the lost program is not desirable because of the loss of pervious area, as well as the inherent benefits of the proposed open spaces (e.g., heat island effect mitigation, social benefits). The Proponent believes that the proposed open spaces and benefits are important for the Master Plan Project and the existing community.

Although a reduction in height across Blocks A and B is not feasible for the reasons stated above, the Master Plan Project includes changes from the ENF proposal that reduce the impact of the building heights. Blocks A and B will now include residential buildings which allow for smaller footprints and will result in a reduced development program. This program volume, reduced by approximately 180,000 sf, is also planned to be located further away from the neighborhood. The buildings along West First Street have been moved approximately 12 feet further from the street increasing separation from existing buildings on the opposite side of the street while the buildings along Road 1 have been moved an additional 63 feet further from West First Street. The revised placement of these buildings will reduce the visual impact of the building heights when viewed from West First Steet compared to the ENF proposal.

2.3.3 Raised Elevation Alternative

The Secretary's Certificate requested an alternative that raises the Master Plan Site by an additional one foot above what is proposed. The intent of the additional foot of elevation is to mitigate the potential impact of the 500-year storm surge event in 2070, which according to the Resilient Mass Action Team ("RMAT") Design Standards Tool output included in the ENF, would result in an average storm surge elevation of approximately 23.3 feet BCB (16.8 feet NAVD88). The Master Plan Project proposes to raise the existing elevation of the Master Plan Site to approximately 22.3 feet BCB (15.8 feet NAVD88) (some roadways, open spaces, and transition areas will be lower in elevation). The first floor elevation of non-residential buildings will be approximately 23.3 feet BCB (16.8 feet NAVD88), the water level of the predicted 500-year storm surge event in 2070, and the first floor elevation of residential buildings will be approximately 24.3 feet BCB (17.8 feet NAVD88). Floodproofing is proposed to ensure critical infrastructure will be protected.

The Master Plan Project has been designed to accommodate the proposed ground elevation of approximately 22.3 feet BCB (15.8 feet NAVD88), providing a reasonable slope from the surrounding area up to the Master Plan Site. This approach to resilience introduces a design challenge to ensure active and accessible connections between planned ground floor retail spaces and the Master Plan Project's perimeter. The Master Plan Project addresses these challenges through gentle and strategic sloping transitions. An increase in the ground level by one foot would require additional space for the transition between the Master Plan Site and the surroundings, which would result in a smaller developable area on the Master Plan Site. This smaller developable area would either result in less open space to accommodate the development program or a smaller development program. For the purposes of this analysis, it is assumed that the open space

would be reduced rather than the program. A significant reduction in open space would not only reduce pervious area, landscaping that helps mitigate the heat island effect, but would also result in fewer societal benefits for area residents. The cost of raising the Master Plan Site by an additional foot, even with a similar program, would result in an economically infeasible development. Taking into account the risk of such a storm surge event and the costs to raise the Master Plan Site compared to other flood mitigation strategies, it was determined that the current approach proposed for the Master Plan Project is the appropriate approach.

2.3.4 Future Traffic Operations Alternative

The Master Plan described in the ENF proposed that Pappas Way would continue to connect Summer Street to West First Street and East First Street. In response to feedback from the community and a request in the Secretary's Certificate that other options for Pappas Way be considered, the Master Plan Project team evaluated two options for Pappas Way: 1) closing Pappas Way on the east side of Block A to make a new, larger open space, and 2) closing Pappas Way to vehicle traffic.

The Proponent evaluated the closure of Pappas Way on the east side of Block A at Road 1, with the intent to lower the volume of vehicles on Pappas Way. This alternative also closes Pappas Way where it intersects with Summer Street, and instead directs traffic west toward the future F Street in alignment with Fargo Street. This configuration will reduce the amount of vehicle traffic on Pappas Way, improving the pedestrian experience along the Reserved Channel, while still providing necessary vehicular connections to Blocks C, D, I, and J for service and emergency access. Following this evaluation, the Proponent has decided to include this change to Pappas Way which will be implemented at full build-out of the Master Plan Project, once F Street provides a connection through to Summer Street.

The Proponent also evaluated the closure of Pappas Way in the full build condition. The closure of the roadway would increase the amount of open space along the Reserved Channel and provide more pervious area. Although there would be more pervious area, new open space would not meaningfully reduce impacts of storm surge or coastal flooding. The closure of Pappas Way would significantly complicate access to the buildings on the western side of the Master Plan Site for service and emergency access, in particular Buildings C1, D1, D2, I1, I2, and J1. If Pappas Way were to be closed, a new roadway would be needed for service and emergency access across Blocks C, D, I, and J. These roadways would replace the planned pedestrian open space planned for this stretch and would cut across the Central Open Space, breaking it into smaller pieces which the Master Plan Project team believes would negatively impact the programming possibilities for this open space and the planned resiliency component. Therefore, the Master Plan Project continues to include a portion of Pappas Way, which as noted above, is expected to carry limited vehicular traffic compared to the proposed condition in the ENF that would have continued to connect Summer Street to West First Street and East First Street.

2.3.5 Climate Resiliency Alternatives

Given its low-lying elevation, the Master Plan Site is vulnerable to both sea-level-rise-induced tidal flooding and storm surge flooding. Climate projections show flood pathways coming both from the Reserved Channel to the east, from Fort Point Channel through the adjacent neighborhood to the west and from the Seaport District to the north. The multiplicity of flood pathways coming from multiple directions makes a single line of protection intervention along the Reserved Channel ineffective until a flood protection system at the city scale is implemented.

To mitigate the risk of coastal flooding at the site level, the Master Plan Project proposes to elevate most of the Master Plan Site to a higher elevation (out of the 2100 1% floodplain) and to design buildings to a higher Design Flood Elevation consistent with the Massport Floodproofing Design Guidelines and City and state end of century recommendations accounting for future sea level rise and freeboard. The Master Plan Project proposes to raise most of the Master Plan Site to approximate elevation 22.3 feet BCB (15.8 feet NAVD88) which is consistent with guidance provided by the City in Climate Ready Boston. Elevating the waterfront and Pappas Way to approximately 22.3 feet BCB (15.8 feet NAVD88) would provide a tie back point for the City's flood defense system when implemented. Careful consideration has been given to the surrounding context and street network, as slopes, ramps, and transitions zones will facilitate connecting the raised Master Plan Site to its surroundings. The relocation of Pappas Way further away from the waterfront provides an opportunity for terraces and stepdowns that will offer access to the Reserved Channel. In addition to elevating the Master Plan Site, the Master Plan Project proposes a Design Flood Elevation ("DFE") of approximately 23.3 feet BCB (16.8 feet NAVD88) for non-residential buildings and a DFE of approximately 24.3 feet BCB (17.8 feet NAVD88) for residential buildings and critical facilities (see Chapter 10 for additional information). Those elevations are consistent with Massport Floodproofing Design Guidelines and exceed the City's requirements.

The Master Plan Project also proposes robust tree planting and a significant increase in tree canopy coverage to mitigate urban heat impacts. Stormwater management strategies will help capture and manage stormwater on-site. Provisions have been made to manage increased water volumes induced by climate change, including open spaces meant to absorb large volumes of stormwater.

Multiple alternatives were studied to make the Master Plan Project more resilient to tidal inundations and coastal flooding. Given its low-lying elevation and the presence of multiple flood pathways coming from multiple directions, a perimeter protection approach revealed itself ineffective as it would have been required to wall off the Master Plan Site on all sides. To comply with Massport's Design Flood Elevation requirements, building scale adaptation only would have put the ground floors seven to eight feet higher than the ground level making it difficult to navigate and creating an unpleasant public realm experience. Therefore, elevating the Master Plan Site to a higher elevation and allowing a future city-wide flood defense system to tie back to this higher ground has been selected as the preferred approach.

2.4 Phase 1 Alternative

The Secretary's Certificate requested an analysis of an alternative that includes a higher percentage of residential uses. Since the submission of the ENF, the Proponent has evaluated the program for the Phase 1 Project in consideration of market conditions, comments from the City and community input. The Master Plan Project presented in this DEIR now includes only residential buildings (with ground floor retail) on Blocks A and B, instead of a mix of residential and commercial buildings. The impacts of this program are described throughout this DEIR.

2.5 Summary of Alternatives

Table 2-1 provides a summary of the alternatives discussed in this chapter, with the exception of the Raised Elevation Alternative, Future Traffic Operations Alternative and Climate Resiliency Alternatives which do not impact the program.

Table 2-1 Increased Residential Alternative

	Preferred Alternative	No-Build	ENF Project Alternative	Second Reduced Build	Reduced Height
Building Program (approximate dimensions)					
Commercial/Industrial	4,079,000	791,000	4,768,500	3,483,000	4,436,500
Retail/Amenity	218,000	0	227,500	190,000	224,000
Residential	1,496,000 (1,578 units)	0	788,000 (847 units)	1,391,000 (1,464 units)	752,500 (809 units)
Hotel	205,000	0	205,000	205,000	205,000
Impacts					
Impervious Area (acres)	32.68	40.28	32.92	32.52	30.35
Vehicle Trips	44,630	5,096[1]	45,511[1]	40,776	45,610
Water Usage	802,417	25,749	682,570	751,185	607,374
Wastewater Generation	729,470	23,408	620,518	682,895	552,158

1 Trip generation updated to use formulas from ITE 12th Edition Trip Generation Manual, values differ from those provided in ENF which used the 11th Edition Manual.

2.6 Block Specific Descriptions

The following section includes block-specific information sheets for each of blocks within the Master Plan Project. These sheets have been prepared to describe factors and site characteristics which have informed the Proponent's evaluation of alternatives and the development of the Build Condition that is subject of this filing. Individual blocks are defined by the roadway network, and in most instances are comprised of multiple buildings. Blocks and Building descriptions can be cross referenced against Figure 1-3. The information sheets contain the following sections:

Narrative: This section provides an overview of each parcel including location, site characteristics, access and potential land use.

Characteristics: This section briefly highlights site-specific characteristics for each of the Master Plan Project's blocks.

Block Area: Describes the approximate size of each block.

Floor Area Ratio ("FAR"): Calculated by dividing the block area by the gross square footage of the DEIR Build program.

Site Availability: All Master Plan Project blocks maintain existing uses. This section presents the estimated date the site may be available for development.

Site Access: This section describes the anticipated pedestrian, automobile, and service vehicles access routes for each block.

Maximum Height: This section presents the proposed approximate maximum building height across each block.

DEIR Build: Presents program assumptions associated with each block. Where applicable, parcels associated with the block are broken out further.

Other Potential Uses: Represent appropriate alternative land uses that the framework planning would not preclude. Appreciating the long time horizon of the full Master Plan, these uses were identified through coordination with Massport and the City.

2.6.1 Block A (Buildings A1, A2, and A3)

Section	Description
Narrative	Three buildings with approximately 407,000 sf of residential uses containing approximately 400 residential units. Across the three buildings will be approximately 13,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Initial Phase Project 2. Corner block that defines SE interface with residential neighborhood 3. Active ground floor frontages at Pappas Way, West First, F Street 4. Interface with important arterial streets of West First Street and Pappas Way 5. Regular shaped block supports residential projects of various scales. 6. A3's proposed First Street Open Space defines beginning of F Street 7. North block edge defined by new Road 1 8. Pedestrian orientation along West First Street frontage 9. Curb cuts and vehicular access concentrated on Road 1 10. Varied land ownership- includes both Fee owned land (Parcels A1 and A2) and Massport Ground lease area (A3)
Block Area	98,093 sf (2.25 acres)
FAR	4.3 (420,000 sf)
Site Availability	Near term availability (site prep required)
Site Access Pedestrian Automobile Service Vehicles	 A1: West First Street, A2: Pappas Way Corner, A3: F Street A1-A2: Road 1 A1-A2: Road 1
Maximum Height	A1: 77 feet, A2: 183 feet, A3:107 feet
DEIR Build Condition	A1: 66 Units (73,000 sf) Residential, 8,000 sf General Retail A2: 221 Units (229,000 sf) Residential, 2,000 sf General Retail A3: 113 Units (105,000 sf) Residential, 3,000 sf General Retail Open Space: 21,000 sf (First and F Streets) Parking Supply: 301 spaces
Other Potential Uses	NA

2.6.2 Block B (Buildings B1, B2, and B3)

Section	Description
Narrative	Three buildings with approximately 501,000 sf of residential uses containing approximately 535 residential units. Across the three buildings will be approximately 30,000 sf of retail and/or amenity space, including a space designed to accommodate the potential of a grocer.
Characteristics	1. Contemplated as Initial Phase Project 2. Corner block that defines SW interface with residential neighborhood 3. Active ground floor frontages at West First and F Street 4. Interface with important arterial streets of West First Street and E Street 5. B3 Building geometry planned to not preclude alternative Road 1 alignment relative to the Cypher Street Extension Project 6. North block edge defined by new Road 1 7. Pedestrian orientation along West First Street frontage 8. Curb cuts and vehicular access concentrated on Road 1, E Street 9. Landscaped corridor breaks down scale of approx. 400-foot block length
Block Area	124,320 sf (2.85 acres)
FAR	4.3 (531,000 sf)
Site Availability	Near term availability (Site prep required)
Site Access Pedestrian Automobile Service Vehicles	 B1: West First Street, B2: F Street, B3: West First Street B2: Road 1, B3, E Street B2: Road 1, B3, E Street
Maximum Height	B1: 72 feet, B2: 183 feet, B3: 145 feet
DEIR Build Condition	B1:77 Units (75,000 sf) Residential, 7,000 sf General Retail B2: 291 Units (270,000 sf) Residential, 3,000 sf General Retail B3: 167 Units (156,000 sf) Residential, 20,000 sf potential Grocer Parking Supply: 401 spaces
Other Potential Uses	NA

2.6.3 Block C (Buildings C1 and C2)

Section	Description
Narrative	Two buildings with approximately 567,000 sf of commercial research laboratory uses and approximately 41,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Initial Phase Project 2. Central site position and adjacency to existing occupied and operating commercial property informs commercial program prioritization 3. Building's orient long dimensions parallel to waterfront 4. Planned heights reflect Chapter 91 regulatory constraints (C1), with scale stepping up and away from waterfront 5. Interface with important arterial streets of Pappas Way in the near term (C1) and Future F Street (C2) in the full buildout condition. 6. Interim roads (A, B, and C) navigate access needs of proposed building projects and operating business park context. 7. Vehicular and service access from 'Road C' 8. Active ground floor frontages at Pappas Way 9. Landscaped corridor breaks down scale of approx. 370-foot deep block
Block Area	104,827 sf (2.41 acres)
FAR	5.8 (608,000 sf)
Site Availability	Near term availability. Currently improved, must account for site preparation
Site Access Pedestrian Automobile Service Vehicles	 C1: Pappas Way, C2: Road A, Landscaped Corridor C1: Road C, C2: Road C C1: Road C, C2: Road C
Maximum Height	C1: 64 feet, C2: 153 feet
DEIR Build Condition	C1: 121,000 sf Commercial Office, 36,000 sf of Retail and Amenity C2: 446,000 sf Office / Life Science, 5,000 sf of Ancillary Retail Parking Supply: 393 spaces
Other Potential Uses	NA

2.6.4 Block D (Buildings D1, D2, D3, and D4)

Section	Description
Narrative	Two buildings with approximately 541,000 sf of commercial research laboratory uses and two residential buildings with approximately 190,000 sf of residential use containing approximately 207 residential units. Across the four buildings on this block, there will be approximately 30,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Future Phase project 2. Generous block width ideal for subdivision; flexible for development into mix of uses with Other Potential Uses explored, not precluded. 3. Adjacent to Central Open Space, planned to deliver long views from residential projects east to Reserved Channel 4. Active ground floor frontages (D3 and D4) support F Street as main commercial corridor 5. Interface with important arterial street of Pappas way in the near term (D1 and D2) and F Street (D3 and D4) in the full buildout condition 6. Defines southernmost future commercial opportunity 7. Maintains Road 1 Service prioritization, elevating front-facing characteristics of frontages at Pappas Way, Central Open Space, and F Street 8. Landscaped corridor breaks down scale of approx. 370-foot deep block
Block Area	131,038 sf (3.01 acres)
FAR	5.8 (761,000 sf)
Site Availability	Medium Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 D1: Pappas Way, D2: Road 2, D3: F Street, D4: Road 2 D1 and D3: Road 1, D2 and D4: Road 2 D1 and D3: Road 1, D2 and D4: Road 2
Maximum Height	D1: 132 feet, D2: 100 feet, D3: 148 feet, D4, 121 feet
DEIR Build Condition	D1: 254,000 sf Office / Life Science, 10,000 sf of General Retail D2: 96 Units (88,000 sf) Residential, 5,000 sf of General Retail D3: 287,000 sf, Office / Life Science, 10,000 sf of General Retail D4: 111 Units (102,000 sf) residential, 5,000 sf of General Retail
Other Potential Uses	D1: 241 Units (220,000 sf) Residential, 10,000 sf of General Retail D2: 194 Units (177,000 sf) Residential, 5,000 sf of General Retail D3: 381,000 sf Office / Life Science, 10,000 sf of General Retail D4: becomes 'D2'
FAR, Site Access and Maximum Height reflect the DEIR Build Condition.	

2.6.5 Block E (Buildings E1, E2, and E3)

Section	Description
Narrative	Two buildings with approximately 944,000 sf of commercial research laboratory uses and one residential building with approximately 212,000 sf of residential use containing approximately 232 residential units. Across the three buildings will be approximately 30,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Future Phase project 2. Generous block depth ideal for subdivision into mix of uses 3. Widest block at approx. 350 feet, suited to configure flexible commercial floor plates 4. Landscaped Corridor breaks down scale of block, delivers public realm North South to provide connectivity to Central Open Space 5. Interface with E Street, an important arterial street that supports area freight operations in the present and future. 6. Ground floor program and access planned to support potential Maritime Industrial and Water Dependent uses (E3) 7. Adjacent to Central Open Space north of F street, planned to afford long east towards waterfront from residential project. 8. Active ground floor frontages (E1 and E2) support F Street as main commercial corridor
Block Area	163,764 sf (3.76 acres)
FAR	7.2 (1,186,000 sf)
Site Availability	Long Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 E1: F Street, E2: Road 2, E3: Landscaped Corridor E1: Road 1, E2: Road 2, E3: E Street E1: Road 1, E2: Road 2, E3: E Street
Maximum Height	E1: 164 feet, E2: 141 feet, E3:164 feet
DEIR Build Condition	E1: 424,000 sf Office / Life Science, 10,000 sf of General Retail E2: 232 Units (212,000 sf) Residential, 10,000 sf of General Retail E3: 520,000 sf Office / Life Science, 10,000 sf of General Retail
Other Potential Uses	NA

2.6.6 Block F (Central Open Space)

Section	Description
Narrative	No buildings are proposed for this block.
Characteristics	1. Contemplated as Future Phase project 2. Flexible and programmable all-season Open Space 3. Maintains strategic relationship to Reserved Channel to deliver on resiliency strategy 4. Orthogonal Central Open Space bound by F Street and Pappas Way on West and East, and by Road 3 and Road 2 on north and south. 5. Role to internalize to the site the benefits of an enlivened waterfront edge at the Reserved Channel 6. Dimensional priority in the east and west directions, provides link from Waterfront Open Space at eastern edge to westernmost Open Space at Block G.
Block Area	73,361 sf (1.68 acres)
FAR	0.0
Site Availability	Medium Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 Road 2, F Street, Interim Road A and/or Road 3, Pappas Way NA NA
Maximum Height	NA
DEIR Build Condition	Improved as Open Space
Other Potential Uses	NA

2.6.7 Block G (G1, G2, and Open Space)

Section	Description
Narrative	One building with approximately 325,000 sf of commercial research laboratory uses and approximately 5,000 sf of retail and/or amenity space, as well as an approximately 5,000 sf amenity building, with orientation towards an Open Space that extends the balance of the block to F Street.
Characteristics	1. Contemplated as Future Phase projects 2. Flexible and programmable all-season Open Space complements larger contiguous space east of F Street. 3. Pavilion contemplated as civic use bookend to Central Open Space (G2) 4. Interface with E Street, an important arterial street that supports area freight operations in the present and future (G1). 5. Ground floor program and access planned to support potential Maritime Industrial and Water Dependent uses (G1) 6. Terminal view relationship from Channel toward west (G1) 7. Narrowest block dimension in north south direction of approx. 200 feet, bound by Road 2 and Road 3.
Block Area	91,723 sf (2.11 acres)
FAR	3.7 (335,000 sf)
Site Availability	Long Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 G1: Central Open Space, G2: Road 3 G1: E Street G1: E Street
Maximum Height	G1: 164 feet, G2: 20 feet
DEIR Build Condition	G1: 325,000 sf Office / Life Science, 5,000 sf of General Retail G2: 5,000 sf Amenity building Central Open Space of approximately 1 acre
Other Potential Uses	NA

2.6.8 Block H (Buildings H1, H2, and H3)

Section	Description
Narrative	Two buildings with approximately 749,000 sf of commercial research laboratory uses and one residential building with approximately 186,000 sf of residential use containing approximately 203 residential units. Across the three buildings will be approximately 19,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Future Phase project 2. Generous block depth ideal for subdivision; flexible for development into mix of uses with Other Potential Uses explored, not precluded. 3. Landscaped Corridor breaks down scale of block; bookends open space element that traverses from Anchor Street to West First Street 4. Interface with E Street an important arterial street that supports area freight operations in the present and future. 5. Ground floor program and access planned to support potential Maritime Industrial and Water Dependent (H3) 6. Adjacent to Central Open Space north of F street, planned to afford views south and west from residential project. 7. Active ground floor frontages (H1 and H2) support F Street as main commercial corridor
Block Area	131,280 sf (3.01 acres)
FAR	7.3 (954,000 sf)
Site Availability	Long Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 H1: Road 3, H2: F Street, H3: Landscaped Corridor H1: Road 3, H2 Anchor Street, H3, E Street H1: Road 3, H2 Anchor Street, H3, E Street
Maximum Height	H1: 141 feet, H2: 164 feet, H3: 148 feet
DEIR Build Condition	H1: 203 Units (186,000 sf) Residential, 4,000 sf General Retail H2: 373,000 sf Office / Life Science, 10,000 sf of General Retail H3: 376,000 sf Office / Life Science, 5,000 sf of General Retail
Other Potential Uses	H1: 324 Units (296,000 sf) Residential, 4,000 sf General Retail H2: 306 Units (280,000 sf) Residential, 10,000 sf General Retail
FAR, Site Access and Maximum Height reflect the DEIR Build Condition.	

2.6.9 Block I (Buildings I1 and I2)

Section	Description
Narrative	Two buildings with approximately 746,000 sf of commercial research laboratory uses and approximately 25,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Future Phase project 2. Subject of a future Waterfront Development Plan 3. Meaningful frontage along the Reserved Channel 4. Improves scale relative to existing conditions by replacing a long linear building with two unique buildings of unique heights. 5. Advantageous relationship to Pappas Way for principal access from transformed waterfront corridor 6. Benefits from clearly differentiated service side by way of Road 5
Block Area	97,366 sf (2.24 acres)
FAR	7.9 (771,000 sf)
Site Availability	Medium Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 I1 and I2: Pappas Way I1 and I2: Road 5 I1 and I2: Road 5
Maximum Height	I1: 164 feet, I2: 148 feet
DEIR Build Condition	I1: 407,000 sf Office / Life Science, 15,000 sf of General Retail I2: 339,000 sf Office / Life Science, 10,000 sf of General Retail
Other Potential Uses	NA

2.6.10 Block J (Building J1)

Section	Description
Narrative	One building with approximately 207,000 sf of commercial research laboratory uses and approximately 10,000 sf of retail and/or amenity space.
Characteristics	1. Contemplated as Future Phase project 2. Subject of a future Waterfront Development Plan 3. Meaningful frontage along the Reserved Channel 4. Advantageous relationship to Pappas Way for principal access from transformed waterfront corridor 5. Benefits from clearly differentiated service side by way of Road 5 6. Prominent location defines point of arrival to and from site at north 7. Captured by new east west roads of Road 4 and Fargo Street, aligned to provide network continuity through to neighborhood beyond
Block Area	28,010 sf (0.64 acres)
FAR	7.7 (217,000 sf)
Site Availability	Medium Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 J1: Pappas Way J1: Road 5 J1: Road 5
Maximum Height	J1: 132 feet
DEIR Build Condition	207,000 sf Office / Life Science, 10,000 sf of General Retail
Other Potential Uses	261 Unit (239,000 sf) Residential, 10,000 sf of General Retail
FAR, Site Access and Maximum Height reflect the DEIR Build Condition.	

2.6.11 Block K (Building K1)

Section	Description
Narrative	One hotel building containing approximately 205,000 sf of hotel use (approximately 224 keys) and approximately 10,000 sf of retail and/or amenity space which are anticipated to be facilities of public accommodation. A public marina is also anticipated.
Characteristics	1. Contemplated as Future Phase project 2. Subject of a future Waterfront Development Plan 3. Improvement of existing water-sheet area with grade level facilities of public accommodation 4. Northern most development project, characterized by a prominent location defines point of arrival to and from site at north 5. Organizing block and building to benefit from rationalized intersections with eventual decommissioning of Pappas Way at Summer Street 6. Focal point of long views from beyond the Site boundary: across Channel, Summer Street west and Summer Street Bridge (east). 7. Opportunity to play meaningful role in Basin Loop network over the long term
Block Area	59,581 sf (1.37 acres)
FAR	3.6 (215,000 sf)
Site Availability	Medium Term. Existing improvements and operations on site.
Site Access Pedestrian Automobile Service Vehicles	 K1: Summer Street K1: Pappas Way K1: Pappas Way
Maximum Height	K1: 145 feet
DEIR Build Condition	K1: 224 Key (205,000 sf) Hotel, 10,000 sf of Retail/Amenity with approximately 6,800 sf for Facilities of Public Accommodation
Other Potential Uses	NA

Chapter 3

Environmental Justice

3.0 ENVIRONMENTAL JUSTICE

3.1 Introduction

This chapter addresses the components of the MEPA Public Involvement Protocol for Environmental Justice Populations (the "EJ Involvement Protocol") and the MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations (the "EJ Analysis Protocol"), and follows the applicable sections of the protocols.

Consistent with the EJ Protocols, this chapter identifies the EJ communities within the designated geographic area ("DGA") around the Master Plan Project, discusses community and public outreach efforts, provides an assessment of any potential environmental health burdens experienced by EJ communities, as well as a discussion of the EJ specific mitigation measures.

3.2 EJ Outreach

3.2.1 Public Involvement Plan

In accordance with the Special Review Procedure ("SRP") for the Master Plan Project, the Proponent developed a Public Involvement Plan ("PIP") for the Master Plan Project (see Appendix B). The PIP provides a framework for public outreach, including EJ populations within the DGA of the Master Plan Site prior to initiating each phase of development under the Master Plan Project. The PIP is intended to be a living document that will be revisited periodically during the review of the Master Plan Project, and will be adapted, as necessary, through comments received and as implementation of the PIP takes place during the Master Plan Project's review. The PIP for the Master Plan Project, which has not changed since being included in the ENF, has been broken out into three distinct engagement approaches and are generally defined as:

- **Notification/Communication Strategy** - Implement a comprehensive community engagement program that ensures timely and effective public participation. This will include multilingual notification to members of the public through a broad range of communication channels. Community-based outreach will also be conducted to disseminate Master Plan Project information in accessible formats, to include a Master Plan Project website maintained to host all relevant filings, along with a comment portal to facilitate public input.

- **Public Meeting Strategy** - The Proponent will hold at least one public meeting prior to each Master Plan Project filing and subsequent submissions under the SRP, with particular attention to Environmental Justice populations. Meetings will include interpretation services, with oral interpretation provided for languages spoken by 10 percent or more of residents within one mile of the Master Plan Site, and all meeting materials and notices translated into these languages.

- **Ongoing Engagement strategy** - Ongoing communication will be maintained with public officials to provide Master Plan Project updates and coordinate future planning efforts. For each phase of the Master Plan, the Proponent will notify Community-Based Organizations, Tribes, and other stakeholders of upcoming Project Commencement Notices ("PCNs") at least 30 days in advance, using an up-to-date Environmental Justice Distribution List, or any successor form or required document maintained throughout the duration of the SRP.

3.2.2 Community Advisory Committee

As a part of the SRP procedure, the Proponent requested the Secretary establish a Community Advisory Committee ("CAC"). The CAC is intended to serve as a conduit for public input and review of the Phase 1 Project as well as for the Master Plan Project, including the parcels owned in fee by the Proponent. The CAC is made up of stakeholders nominated by Elected Officials, the Mayor's Office, the Proponent, and other review agencies, and consists of active neighborhood residents, business representatives, or members of community organizations whose interests represent the broader community impacted by the Master Plan Project. Additionally, the CAC was formed to serve as the advisory body for the City of Boston's Article 80 process and will serve in lieu of the City's customary Impact Advisory Group ("IAG") for the Article 80 process.

3.2.3 Public Engagement Efforts

Starting in 2020, the Proponent began outreach to local residents and property owners, neighborhood civic leadership and the South Boston community to introduce them to the Master Plan Site and seek their early input and guidance on long-term visioning and potential future master planning. This preliminary engagement process included over 50 meetings, workshops, events, and activities in the community. As part of this effort, the Proponent held five community-centered charrettes, focusing on public realm, resiliency, mobility, urban design, and how the community can connect to and benefit from simple interventions with open space through the potential transformation of this area. Public events held along Pappas Way and the addition of an all-season activity center have also helped to invite the community to participate in, and benefit from, new programming and amenities in the area.

Prior to submission of the ENF, a CAC and community meeting were held on April 22, 2024 and April 23, 2024, respectively. Following the submission of the ENF, meetings were held on May 8, 15 and 22, 2025. Consistent with the PIP for the Master Plan Project, the Proponent also held a CAC/public meeting in anticipation of a revised program presented in the DEIR on October 8th 2025 via Zoom. During this meeting, the Proponent shared proposed changes to the Master Plan Project made in response to comments received on the ENF from Master Plan Project stakeholders and to identify the modified plan and program that would be presented in the DEIR. Notification of the meeting was broadcast throughout the community through the distribution of public flyers at several locations throughout South Boston and Chinatown, placement of public notices in the Boston Herald newspaper, email correspondence with the CAC members, as well

as a notification on the Master Plan Project's website. All public distribution was translated into Spanish, Chinese, and Vietnamese.

Comments received as a part of the CAC meeting included among others: enthusiasm for the plan and program changes, interest in detailed transportation and resiliency analysis, West First Street right-of-way improvements, parking approach, land use justifications, and specificity around building height.

Moving forward, the Proponent anticipates undertaking a similar approach beyond the DEIR submission that will include holding several community meetings and events as outlined in the PIP, continuing to hold CAC meetings, posting relevant informational flyers, as well as continuing to maintain the Master Plan Project website with resources available for any stakeholders to communicate with the Proponent.

3.2.4 Consistency with EJ Public Involvement Protocol

The Proponent has offered several forms of public outreach/communication throughout the MEPA process and is committed to maintaining the same level of effort throughout review of the Master Plan. Extensive public outreach has been conducted to date, including the following activities that have been undertaken during the MEPA review process:

1. Maintaining a project website that provides a home page with applicable information regarding the Master Plan Project, visual representations of the Master Plan Site, an updates tab that lists upcoming and recent public meeting notices that have been translated, a feedback tab that allows for direct communication with the Proponent including a community discussions forum, and an info tab that provides general information as well as pertinent presentation materials and select recordings of previous meetings in chronological order for any member of the public to watch.

2. Several community meetings have been held to date, including the CAC meetings as discussed in Section 3.2.3. Public outreach for community meetings have included the following:

    a) Public Notice posting in the Boston Herald, including translations in Spanish, Chinese, and Vietnamese.

    b) Public Notice posting in Caught in Southie (digital news source) in addition to a social media posting from their account.

    c) A flyer posted around Boston at several locations informing the public of the meeting, including the applicable translations. The flyer was distributed in areas within the one-mile DGA with the approach of posting specifically in EJ census tracts, including at the South Boston Library, South Boston Community Health Center, The Fort Point Arts Community Center, The Laboure Center, Boston Chinatown Neighborhood Center, and the Chinatown YMCA. These flyers were

translated into the applicable languages that exceeded 5% or more of Limited English Proficiency by members of those communities.

d) Physical mailing to abutters that included the flyer and the Master Plan Project Fact Sheet.

e) Email distribution sent to all email addresses that commented on the ENF (if known), as well as to all stakeholders listed on the EJ Distribution List and a separate list maintained by the Proponent exceeding over 1,000 recipients.

f) Tabled Master Plan Project information at free community Pappas Way event on September 18, 2025, attended by over 150 area residents.

3.3 Baseline Health Assessment

Under the EJ Analysis Protocol, a three-step process has been developed for assessing whether EJ populations have experienced existing unfair or inequitable environmental burdens within the DGA. As part of this approach, a series of mapping tools have been developed that focus on: (1) the rates of four vulnerable health criteria as they relate to statewide averages; (2) existing, past, and current potential sources of pollution within the DGA; and (3) a review of the RMAT Climate Resilience Output Tool. This analysis has been completed for the Master Plan Project.

The Master Plan Project is not anticipated to have a disproportionate adverse effect on EJ populations within the DGA or have climate change effects that would impact nearby EJ populations. Figure 3-1 provides the EJ block groups within the DGA.

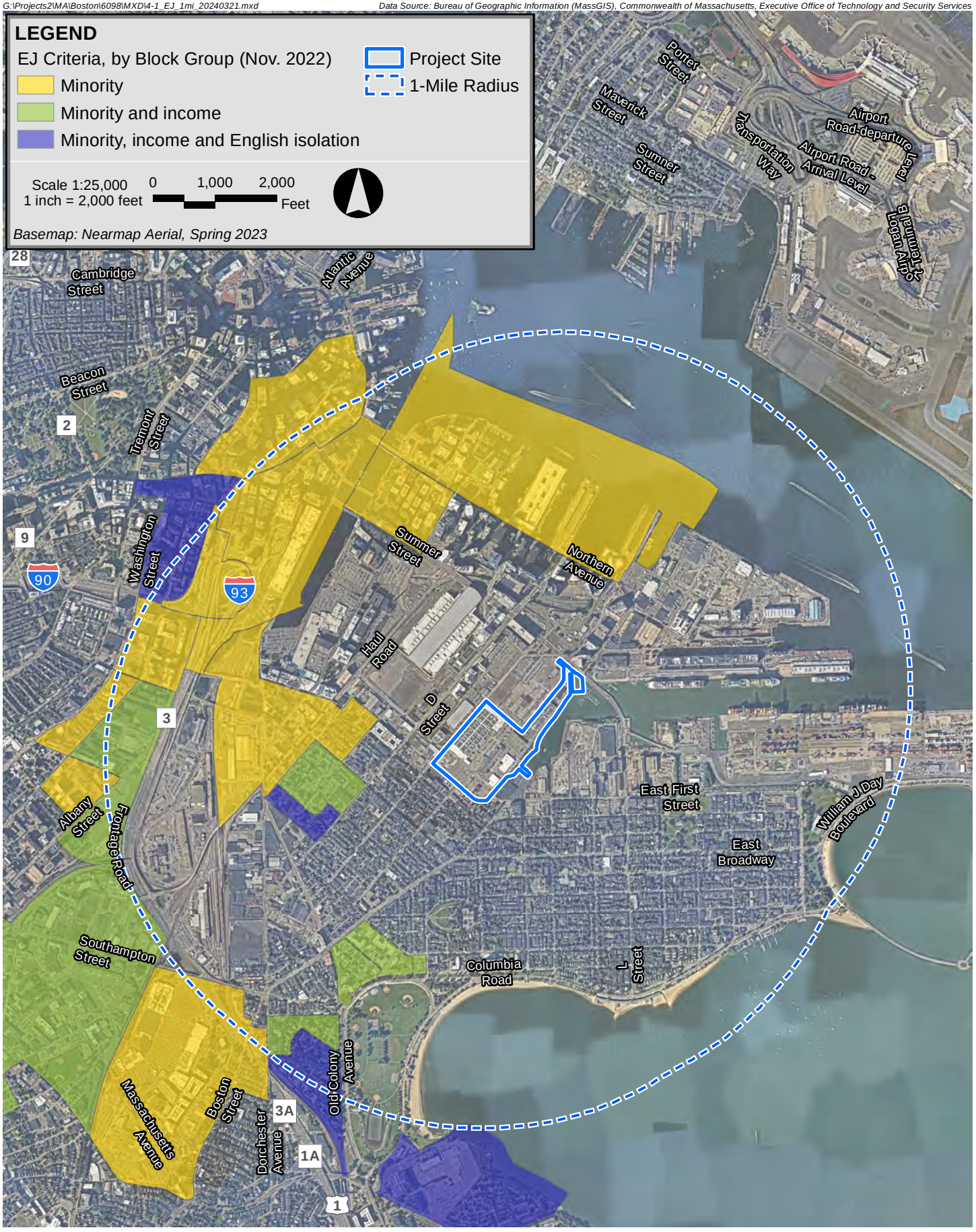
3.3.1 Vulnerable Health Criteria

The vulnerable health EJ criteria are four environmentally related health indicators used to identify populations with evidence of higher-than-average rates of environmentally related health outcomes. Any EJ communities that exceed the state "vulnerable health EJ criteria" could potentially bear an "unfair or inequitable" environmental burden and related public health consequences. Multiple terms are used to describe the vulnerable health EJ criteria as they relate to the EJ populations. These terms are defined and described below.

The vulnerable health EJ criteria are reported for a population in a specific area. The area can be a state, town, or census tract. Census tracts are small, relatively permanent areas of land with a population typically between 1,200 and 8,000 people.

Health criteria are reported as rates, or the number of people with the identified condition divided by the population in consideration. The Massachusetts Department of Public Health ("DPH") EJ Tool compares the community rate, or the town or census tract of interest, to the statewide rate, or the rate for the population of Massachusetts. Two rate types are used: crude rate and age-adjusted rate. The crude rate is the rate calculated as the number of individuals with a condition

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Reserved Channel Development Boston, Massachusetts

Epsilon Associates Inc.

Figure 3-1

Environmental Justice Block Groups - 1 Mile Radius

divided by the entire population. The age-adjusted rate is statistically modified to consider how different age groups have different rates of prevalence as in the case of the heart attack rate. Rates are also classified as stable or unstable. Unstable rates occur when there are too few cases in a community for a rate to be considered reliable such that the addition or deletion of a small number of cases would lead to a substantial change in the rate. Stable rates are the opposite; there are enough cases in a population so that the rate will not fluctuate dramatically. A confidence interval refers to the minimum and maximum value such that the actual rate has a 95% chance of occurring between the calculated range. In other words, the specified rate has a high likelihood to be included in the range of values. The confidence interval is helpful to determine if a rate for a community is much higher than the statewide rate and not due to chance. A case count refers to the number of surveyed individuals that had the condition of interest. For example, if out of 40 children screened for blood lead levels, one child had elevated levels, the case count would be equal to one.

The first step is to determine whether EJ populations within the DGA have experienced higher rates of the vulnerable health criteria when compared to the statewide rate.

The DPH EJ tool provides information on these four different indicators: heart attack hospitalizations, childhood blood lead exposure, low birth weight, and childhood asthma for the most recent five-year period of available data. It should be noted that each of these datasets are available at different geographies: heart attack hospitalizations and childhood asthma are available at the community level, while low birth weight and childhood blood lead exposure are available at the census tract level. Each of these specific criteria are described below and, as requested by the Certificate, the results of the analysis for the municipal-level information is provided for the one-mile DGA and the census tract level is provided for the one-mile radius. The following communities are within the 5-mile DGA and have an identified EJ population: Boston, Brookline, Cambridge, Chelsea, Everett, Medford, Milton, Quincy, Revere, Somerville, and Winthrop.

3.3.1.1 Heart Attack Hospitalizations

As described on the DPH website, heart attack hospitalization is a criterion used to identify vulnerable health EJ populations. Exposure to air pollution is one factor that may increase the risk for heart attack and other forms of heart disease.

Heart attack hospitalization data is based on data collected from all hospitals in Massachusetts and reflects individuals greater than 35 years of age who have been admitted to the hospital for a heart attack. The vulnerable health criterion for heart attack hospitalization is reported as the most recent five-year average age-adjusted rate of hospitalization for heart attack. An EJ community meets this criterion if its rate is equal to or greater than 110% of the state rate. As noted above, this indicator is available at the community level.

Heart Attack Vulnerable Health Criteria for the Project

At the community level, there are no municipalities within the one-mile DGA that meet the vulnerable health criterion for heart attack hospitalizations.

3.3.1.2 Childhood Blood Lead Levels

As described on the DPH website, childhood lead exposure is another criterion used to identify vulnerable health EJ populations because lead exposure can disproportionately impact lower income communities and communities of color. Lead exposure in childhood can cause severe and irreversible health effects.

Childhood Blood Lead level data is based on data collected as part of the Massachusetts Lead Poisoning Prevention and Control Act, which is a state law that requires all children to be screened each year for lead poisoning through age three, and children in high-risk communities must be screened through age four. The vulnerable health criterion for childhood blood lead level is reported as the five-year average prevalence of elevated (≥5 ug/dL) childhood blood lead levels (ages 9 – 47 months). An EJ community meets this criterion if its prevalence is equal to or greater than 110% of the state prevalence. This indicator is available at the community and census tract level.

Childhood Blood Lead Levels Vulnerable Health Criteria for the Project

At the community level, Boston meets the vulnerable health criterion for childhood blood lead level. However, no EJ census tract within one mile of the Master Plan Site that exceeds the vulnerable health criteria for childhood blood lead.

In Massachusetts, most lead poisoning is associated with lead-based paint used in homes built before 1978. When paint peels or cracks it creates paint chips and dust which can land on floors and ultimately into children's bodies when they put their hands and toys into their mouths. Lead can also occur in drinking water and soil. As these risks are typically associated with an individual's home, the Master Plan Project is not anticipated to impact this risk factor.

3.3.1.3 Low Birth Weight

As described on the DPH website, low birth weight ("LBW") is another criterion used to identify vulnerable health EJ populations because exposure to environmental contaminants can increase the risk of delivering a LBW baby. LBW rate is a significant predictor of maternal and infant health. Women of color and low-income women have been shown to generally have a higher risk of delivering a LBW baby. LBW can increase the risk of infant mortality and morbidity.

LBW data are collected by the Registry of Vital Records and Statistics. Medical data, such as birth weight and gestational age, are based on information supplied by the hospital and birthing facilities. The vulnerable health criterion for LBW is reported as the five-year average LBW rate among full-term births. An EJ community meets this criterion if its rate is equal to or greater than

110% of the statewide rate. This indicator is available at both the community and census tract level.

Low Birth Weight Vulnerable Health Criteria for the Project

At the community level, Boston meets the vulnerable health criterion for LBW. Additionally, within one mile of the Master Plan Site, ten census tracts in Boston meet this criterion: Census Tract 606.04, Census Tract 607, Census Tract 610, Census Tract 611.01, Census Tract 701.03, Census Tract 701.04, Census Tract 702.02, Census Tract 704.02, Census Tract 801, and Census Tract 907.

3.3.1.4 Childhood Asthma

As described on the DPH website, childhood asthma is another criterion used to identify vulnerable health EJ populations because people of color and low-income individuals are at greater risk for asthma exacerbations due to increased exposure to asthma triggers. Asthma triggers include air pollutants and exposure to environmental contaminants.

Childhood asthma data are based on data collected from all hospitals in Massachusetts and reflects children between ages 5 and 14 that have visited an emergency room for treatment for asthma. The vulnerable health criterion for childhood asthma is reported as the five-year average rate of emergency department visits for childhood (5 – 14 years) asthma. An EJ community meets the criteria if its rate is equal to or greater than 110% of the statewide rate. This indicator is available at the community, or town-wide level.

Childhood Asthma Vulnerable Health Criteria for the Project

At the community level, Boston meets the vulnerable health criterion for childhood asthma.

3.3.1.5 Vulnerable Health Criteria Summary

At the community level, Boston meets the vulnerable health criteria for childhood blood lead levels, childhood asthma, and LBW. Boston does not meet the vulnerable health criteria for heart attack hospitalizations.

Within one mile of the Master Plan Site, one census tract in Boston meets the criterion for childhood blood lead: Census Tract 801. Ten census tracts in Boston meet the criterion for low birth weight: Census Tract 606.04, Census Tract 607, Census Tract 610, Census Tract 611.01, Census Tract 701.03, Census Tract 701.04, Census Tract 702.02, Census Tract 704.02, Census Tract 801, and Census Tract 907.

Based on the descriptions provided above, some EJ populations in the DGA could be considered vulnerable and are subject to at least some degree of existing environmental burden; however, the Master Plan Project is not expected to increase the risk of the vulnerable health criteria to

these populations as described above and shown in the analysis and results presented in the air quality analysis in Chapter 4.

3.3.2 Potential Sources of Pollution

As described in the EJ Analysis Protocol, the next step of the existing environmental burden analysis focuses on other potential sources of pollution within the boundaries of the EJ population.

Layers from the DPH EJ Tool were analyzed with a one-mile buffer drawn around the Master Plan Site boundary. Each of the resulting layers were used to develop a narrative of the number of types of facilities and infrastructure for the EJ populations in the DGA. Below is a discussion of the information gleaned using the mapping layers listed above in the MA DPH EJ Tool.

MassDEP Major Air and Waste Facilities

Massachusetts Department of Environmental Protection ("MassDEP") major air and waste facilities are facilities that have air operating permits, treat, store, generate or recycle large quantities of hazardous waste, or utilize large quantities of toxics. These facilities are further specified in the following sections and include airports, facilities with air permits, draft NPDES permits, hazardous waste, treatment, storage, recycling, or disposal facilities, large quantity generators, large quantity toxic users, land disposal of solid waste, and toxic release inventory sites.[1]

There are 24 MassDEP major air and waste facilities within the EJ populations that are wholly or partly within one mile of the Master Plan Site. The closest off-site facility is approximately 0.48 miles from the Master Plan Site; the farthest is approximately 1.56 miles from the Master Plan Site, located wholly or partly within the identified EJ block groups.

The Master Plan Project will not include a MassDEP Major Air and Waste Facility and will not result in additional impact to EJ populations based on this criterion.

M.G.L. c. 21E Sites

21E sites are sites that have experienced a release of hazardous material above a certain threshold. Once a release is reported to MassDEP it must be cleaned up within a year or it is classified as Tier I, Tier ID, or Tier II. A Tier I site poses an immediate hazard, a Tier ID site has not posed a permanent solution or final classification of the site, while a Tier II site does not meet the criteria for an immediate hazard.

There are 37 M.G.L. c. 21E sites within the EJ block groups that are wholly or partly within one mile of the Master Plan Site. The closest facility is approximately 0.37 miles from the Master Plan

[1] https://www.mass.gov/info-details/massgis-data-massdep-major-facilities

Site; the farthest facility is approximately 0.98 miles from the Master Plan Site, located wholly or partly within the identified EJ block groups.

The Master Plan Site does not contain a M.G.L. c.21E site and will not result in additional impact to EJ populations based on this criterion.

Tier II Facilities

A facility is required to submit a Tier II report to emergency response agencies if it uses over a certain threshold of hazardous chemicals during a calendar year. The purpose of Tier reporting is to help facilitate emergency response in the event the fire department would need to respond to an emergency at the facility.

There are 36 Tier II facilities within the EJ populations that are wholly or partly within one mile of the Master Plan Site. The closest Tier II facility abuts the Master Plan Site and is located at 426 East First Street.

The Master Plan Project is not anticipated to include a Tier II facility and will not result in additional impact to EJ populations based on this criterion.

MassDEP sites with AULs

An AUL provides notice of the presence of oil and/or hazardous material contamination remaining at a location after a cleanup has been conducted pursuant to Chapter 21E and the Massachusetts Contingency Plan ("MCP"). The AUL is a legal document that identifies activities and uses of the property that may and may not occur, as well as the property owner's obligation and maintenance conditions that must be followed to ensure the safe use of the property.

There are 15 MassDEP sites with AULs within the EJ populations that are wholly or partly within one mile of the Master Plan Site. The closest off-site facility is approximately 0.1 miles from the Master Plan Site; the farthest is approximately 0.94 miles from the Master Plan Site, located wholly or partly within the identified EJ block groups.

As discussed in Chapter 9, all work on the Master Plan Site, including areas subject to an AUL, will comply with relevant local, state and federal requirements.

MassDEP Groundwater Discharge Permits

This dataset contains the locations of permitted discharges of groundwater. This includes discharges from: sanitary sewage in excess of 10,000 gallons per day ("GPD"), coin operated laundromats, car washes, industrial facilities, and reclaimed water (used in cooling towers and other closed loop systems, no actual discharge).

There are no MassDEP facilities with Groundwater Discharge Permits within the EJ populations that are wholly or partly within one mile of the Master Plan Site. The Master Plan Project does

not require a Groundwater Discharge Permit and will not result in additional impact to EJ populations based on this criterion.

Wastewater Treatment Plants

The DPH Tool provides information on facilities that have received a NPDES permit. NPDES is a permit for facilities that treat wastewater. There are 14 wastewater treatment facilities located within one mile of the Master Plan Site; the closest located along the Master Plan Site boundary on the Reserve Channel.

NPDES Construction General Permit(s) will be obtained, as required, and the Master Plan Project is not expected to result in additional impact to EJ populations as a result of any wastewater generation.

MassDEP Public Water Suppliers

The DPH Tool dataset contains locations of public community surface and groundwater supply sources based on data available in MassDEP's Water Quality Testing System database for tracking water supply data. A community water system refers to a public water system which services at least 25 year-round residents.

There are no public water suppliers wholly or partly within EJ block groups within one mile of the Master Plan Site. The Master Plan Project is not considered a MassDEP Public Water Supplier and will not result in additional impact to EJ populations based on this criterion.

Underground Storage Tanks

MassDEP regulates the registration, installation, operation, maintenance, inspection, and closure of petroleum fuel and hazardous substance of underground storage tank ("UST") systems.

There are 11 USTs within one mile of the Master Plan Site that are part of the UST program. These USTs are located between approximately 0.44 and 0.99 miles from the Master Plan Site, wholly or partly within the one-mile radius. The Master Plan Project is not anticipated to include a UST and will not result in additional impact to EJ populations based on this criterion.

EPA Facilities

EPA facilities are defined as Toxic Release Inventory ("TRI") facilities. TRI facilities use and/or release over a certain threshold of toxic chemicals to the environment. There are 777 individual chemicals and 33 chemical categories covered by the TRI program.

There are three EPA facilities within the EJ block groups that are wholly or partly within one mile of the Master Plan Site. The closest EPA facility being approximately 0.35 miles from the Master Plan Site. The Master Plan Project will not include an EPA Facility and will not result in an additional impact to EJ populations based on this criterion.

Road Infrastructure

Road infrastructure includes Massachusetts Department of Transportation roads and bike lanes or shared use pathways. There are numerous major routes within a one-mile radius of the Master Plan Site including US Route 1; State Routes 3, 1A, and 3A; and Interstates 90 and 93.

MBTA Bus and Rapid Transit

The MBTA data includes all MBTA bus routes, stops, commuter rails, commuter rail stations, parking lots, and rapid transit stops.

There are 101 MBTA bus stops, two MBTA commuter rail stations, and 10 MBTA rapid transit stops located within the EJ block groups that are wholly or partly within one mile of the Master Plan Site.

Other Transportation Infrastructure

Other transportation infrastructure includes airports, freight yards, water taxis, railroad tracks, and ferry routes.

There are railroad tracks located wholly or partly within one mile of the Master Plan Site. Seven ferry routes are within one mile of the Master Plan Site. They are between approximately 0.5 miles and one mile from the Master Plan Site.

Regional Transit Agencies

Regional Transit Agency ("RTA") layers include the bus routes for the Regional Transit Authorities of Massachusetts and their associated bus stops.

The MBTA provides service to areas located wholly or partly within the EJ block groups within one mile of the Master Plan Site.

Energy Generation and Supply

The Energy Generation and Supply layer includes nuclear power plants, power plants, and transmission lines from Massachusetts Geographic Information Systems and the United States Geological Survey databases.

There is one power plant located wholly or partly within the EJ block groups within one mile of the Master Plan Site. This facility is located approximately 0.87 miles from the Master Plan Site. The Master Plan Project will not include an Energy Generation and Supply facility and will not result in additional impacts to EJ populations based on this criterion.

Additional Mapping Layers

Additional mapping layers were analyzed to determine the Phase 1 and Master Plan Project's impact or exposure to public health criteria, with a particular emphasis on the climate data provided in the DPH EJ tool. Two additional data layers were assessed that included Federal Flood Hazard and Sea Level Rise data and Climate Rainfall Predictions. Within the Federal Flood Hazard and Sea Level Rise data, two dataset layers were applied to the Master Plan Site; the NOAA sea level rise and inundation zones. The NOAA sea level rise dataset determined that the Master Plan Project may be subject to an additional five to six feet of sea level rise over the Master Plan Project's lifespan. The inundation zones dataset showed the Master Plan Project would fall within Zone 1 and Zone 2.

The Master Plan Project has taken into consideration the information analyzed by the additional DPH EJ tool. See Chapter 10 for more information.

3.3.3 Climate Adaptation

The third step in the EJ Analysis Protocol is to identify the climate risks associated with a project based on the RMAT Climate Resiliency Design Standards Tool output report. The RMAT tool provides information about sea level rise and storm surge, extreme precipitation, and extreme heat, providing exposure and risk ratings for each parameter based on a project's location and other factors. Specifically, the EJ Analysis Protocol indicates "High" risk rating parameters are analyzed to assess climate risks on EJ populations that immediately surround a project site (located in whole or in part within the project boundaries).

3.3.3.1 Sea Level Rise/Storm Surge

The RMAT tool was used to analyze the Phase 1 Project as a proxy for the Master Plan Project (see Attachment 5 of the ENF). Based on the Phase 1 Site location, the RMAT tool indicates that the Phase 1 Project has high exposure to sea level rise/storm surge, extreme precipitation (urban flooding) and extreme heat. The RMAT tool recommends designing the Phase 1 Project for the 2070 500-year storm event for sea level rise/storm surge. The Phase 1 Project and Master Plan Project have been designed to meet and exceed the predicted sea level rise design flood elevation ("SLR-DFE") by elevating the majority of the Master Plan Site and including additional elevation to the first floor of the Master Plan Project's buildings. These elevations will allow for the Master Plan Project to tie into the surrounding neighborhood while still allowing for sea level rise and extreme storm surge events up to the 2070 500-year storm. See Chapter 10 for additional details, including an analysis of storm flows associated with the raised Master Plan Site. Given the location of the EJ populations, changes to the Master Plan Site for resilience purposes is not anticipated to impact EJ populations.

3.3.3.2 Extreme Precipitation

In accordance with the RMAT tool's extreme precipitation recommendations, the Master Plan Project and the Phase 1 Project were advised to design up to the 2070 100-year storm event that

maintains a projected 24-hour precipitation total of approximately 10.9 inches. Across the Phase 1 and Master Plan Project, the stormwater management systems will be designed to manage stormwater for future conditions, currently anticipated to be 10.9 inches of a 24-hour storm event (2070 100-year storm event). At the time of design, the Proponent and its consultants will evaluate current information to determine the appropriate stormwater design for then projected storm events. This will be accomplished through the use of stormwater management systems as described in Section 6.3. Resilience measures on the Master Plan Site related to stormwater management are not anticipated to negatively impact EJ populations given their distance from the Master Plan Site and the stormwater management improvements that the Master Plan Project will include.

3.3.3.3 Extreme Heat

The RMAT tool analyzes a myriad of extreme heat parameters that could impact the Master Plan Site and Phase 1 Site up to the year 2070. The Proponent understands as climate change progresses, extreme heat events are projected to increase in both frequency and intensity. Addressing these impacts is a critical consideration in planning for community resilience, public health, and infrastructure adaptation. Section 10.3 describes measures that the Master Plan Project will be taking to minimize the urban heat island effect, including significant new landscaping and the planting of approximately 1,000 new trees. These efforts are consistent with the City's efforts to increase the urban tree canopy.

3.4 Air Quality Assessment

3.4.1 Introduction

Air quality impacts from a project can be viewed within the context of the overall regional air quality to assess whether any additional project-related emissions will significantly contribute to the air quality in the project location and cause air pollutant concentrations to exceed available health-protective air quality standards.

The Proponent anticipates that any potential air quality impacts from the Master Plan Project will be related to some increase in vehicle and truck traffic. Since the transportation analysis (including in Chapter 7) has only been completed for Phase 1, the air quality analysis in this section only evaluates the Phase 1 Project. Air quality impacts from future phases or buildings are anticipated to be evaluated in PCNs submitted in the future pursuit to the SRP.

The primary air pollutants of concern from vehicles and trucks are fine particulates ("$PM_{2.5}$") and nitrogen oxides ("NOx"). Therefore, to provide air quality context, two key sources of information have been evaluated: estimated $PM_{2.5}$ and NOx from on-road vehicles and estimated $PM_{2.5}$ and nitrogen dioxide ("NO_2") concentrations at the nearest air monitoring site. $PM_{2.5}$ was selected for analysis because it is a greater health hazard due to its smaller size. NO_2 is one of a group of gases known as NO_x and NO_2, concentrations of which are measured at monitoring sites and used as the

health indicator for the larger group of NO_x. Diesel particulate matter ("DPM") is also an air pollutant of concern from truck traffic; however, $PM_{2.5}$ is a good surrogate for DPM.

Emission trends for $PM_{2.5}$ and NO_x from on-road highway vehicles were reviewed to obtain an overall understanding of current emission patterns. The emissions data is collected and reported by the Environmental Protection Agency ("EPA")[2] and emission trends are shown in Figure 3-1. As can be observed, the Massachusetts air emissions from vehicle traffic have fallen dramatically in recent years, with reductions in excess of 80%, largely due to vehicle emissions regulations that have served to reduce these emissions.

To evaluate the related impacts on air pollutant concentrations in Massachusetts, the air pollutant concentration information was obtained from monitoring stations across the state to assess the representative background air concentrations of these air pollutants.[3] The background concentrations of $PM_{2.5}$ and NO_2 are compared to the short-term EPA National Ambient Air Quality Standards ("NAAQS"), which are health-protective standards below which health impacts are not expected. The short-term NAAQS are relevant for comparing with short-term vehicle emission estimates (i.e., peak hourly vehicle emissions).

Background pollutant concentrations representative of the area for 2022 to 2024 from the nearest air monitoring site, the Von Hillern Street station, about 1.8 miles from the Phase 1 Site were obtained. EPA reports air pollution concentrations with respect to how the health-protective NAAQS are defined, which are called design values. To attain the short-term (24-hour) $PM_{2.5}$ standard, the three-year average of the 98^{th} percentile of 24-hour concentrations must not exceed 35 $\mu g/m^3$ (i.e., the design value for short-term exposures to $PM_{2.5}$). To attain the one-hour NO_2 standard, the three-year average of the 98^{th} percentile of the maximum daily one-hour concentrations must not exceed 188 $\mu g/m^3$.

Table 3-1 shows the most recent available design values for $PM_{2.5}$ and NO_2 compared against the NAAQS. It should be noted that the Von Hillern monitoring station is a near-road station that is meant to capture air pollutant concentrations from primarily vehicle emissions. As shown, even with proximity to a large highway (I-93), concentrations of the two primary air pollutants associated with vehicle emissions are well below the NAAQS.

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2 https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data

3 Air Quality Design Values | US EPA

Table 3-1 Observed Ambient Air Quality Concentrations and Selected Background Levels

Pollutant	Averaging Period	Form	Background Concentration (µg/m³)	NAAQS	Percent of NAAQS
$PM_{2.5}$	24-Hr [2]	98th %	17	35	49%
NO_2 [1]	1-Hr [2]	98th %	80.8	188	43%

Notes:
From US EPA Design Values (Air Quality Design Values | US EPA) for 2022-2024
[1] NO_2 reported in ppb. Converted to µg/m³ using factor of 1 ppb = 1.88 µg/m³.
[2] Background level is the average concentration of the three years.

An air quality analysis was conducted based on the transportation study (Chapter 7). The transportation study estimated the number of vehicle trips, including truck trips associated with Phase 1 and the Master Plan Project. With regards specifically to truck trips, Phase 1 will result in a reduction in truck trips compared to the existing condition (64 existing, 56 proposed). The Master Plan Project will result in a small increase in truck trips (226 existing, 244 proposed). The transportation study does not include any intersections within an EJ Block Group, however, trucks are anticipated to travel to the nearby highways, and there are EJ communities that are intersected by the highways. Given the small number of added trucks, and emissions analysis presented below, the additional vehicle and truck traffic will not have a significant impact on air quality. Importantly, given that air quality as measured near relevant air monitoring stations are well below the current NAAQS, it is expected that the small addition of emission from the Master Plan Project will not result in an exceedance of these health-protective standards.

3.4.2 EJScreen Analysis

The EJScreen analysis was conducted using a buffer for a one-mile radius from the Master Plan Site, and the results were compared to the statewide percentiles for the six relevant air quality environmental indicators. As noted by EPA, the buffer aggregates the relevant portions of the EJ block groups within the area providing a population-weighted average for each indicator. The results for all EJ Indicators related to air quality are presented in Table 3-1, along with actual values for the one-mile radius compared to the state. The actual values are presented to provide further context, as the percentiles only represent what the regional averages are compared to other regions in the state, and are not comparisons against actual health-based standards.

As shown in Table 3-2, the EJScreen Air Quality indicators that exceed the 80th percentile are the Diesel PM, Nitrogen Dioxide, and Traffic Proximity and Volume. As noted by EPA in the EJScreen Technical Document[4], "a high percentile is not necessarily a real concern from a health or legal perspective." To understand the actual health or other implications of any screening results requires looking at the underlying data and relevant air quality or air toxics standards. Other data that EPA refers to includes whether the actual data exceeds health-based standards. All the

[4] Technical Documentation for EJSCREEN | EJSCREEN: Environmental Justice Screening and Mapping Tool | US EPA

indicators, except traffic proximity and toxic releases to air, have health-based standards that these values can be compared against. EJScreen indicators for the census tracts in the one-mile radius are all well below those health-based standards. Traffic proximity is a poor indicator of actual exposures, and other EJ Indicators such as $PM_{2.5}$ are more relevant for evaluating a potential health hazard. $PM_{2.5}$ and other air pollutant concentrations are below their relevant standards and guidelines as shown in Table 3-1.

Overall, despite some air quality indicators having elevated EJScreen percentiles, the EJScreen results show that air quality indicators are below relevant health-based standards, where applicable, and therefore there is no indication of an unfair or inequitable burden to EJ communities in and around the Master Plan Site. Importantly, potential Master Plan Project-related impacts are not expected to impact these indicators.

Table 3-2 EJScreen Results for the One-mile Buffer from the Master Plan Site

Indicator	State Percentile	One mile Radius Average	State Average	Health-based Standard
Particulate Matter ($PM_{2.5}$)	48	6.54 mg/m^3	6.52 mg/m^3	9 mg/m^3 (1)
Ozone (ppb)	53	56.6	56.7	70 ppb
Diesel PM (DPM)	96	0.76 mg/m^3	0.31 mg/m^3	5 mg/m^3 (2)
Nitrogen Dioxide (ppb)	93	15.5 ppb	8.8 ppb	53 ppb
Traffic Proximity and Volume	94	16,000,000	6,100,000	N/A
Toxic Releases to Air	67	3,500	2,800	N/A

Notes: (1) $PM_{2.5}$ annual NAAQS (2) US EPA RfC for diesel PM

3.4.3 Mesoscale Analysis

An air quality impacts assessment of project-related vehicle emissions is typically included in MEPA EIR scopes for projects of varying sizes to assess whether EJ communities near a project site (i.e., within the one-mile DGA) would be adversely and disproportionately affected. This often includes an estimate of air pollutant emissions at intersections within the EJ community. These estimates have historically been assessed using a mesoscale analysis[5], and have been traditionally limited to estimating NOx and volatile organic compounds ("VOCs") for the Existing, No-Build, and Build conditions. This evaluation was originally needed because these air pollutants are precursors to ozone, and Massachusetts was not in compliance with the ozone NAAQS at the time these analyses were developed to ensure compliance. Massachusetts is no longer in violation of the ozone NAAQS. More recently, MEPA has expanded the requirements to include other air pollutants associated with vehicle emissions such as PM.

[5] Mesoscale analyses are conducted in accordance with the *MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991)* and utilize the EPA MOVES model to estimate emissions.

3.4.3.1 Methodology

A mesoscale analysis predicts the change in regional ozone precursor emissions, NOx and VOCs due to the Phase 1 Project; this analysis also includes Phase 1 Project-related emissions of NOx, VOCs, PM_{10} and $PM_{2.5}$. The analysis includes a comparison of the Existing condition compared to the 2033 No-Build condition, as well as the future 2033 Build condition to the No-Build condition. The methodology and parameters for the mesoscale analysis follow methodology approved by MassDEP. Traffic conditions are described in more detail in Chapter 7.

The EPA has developed an emissions factor model (called MOVES4) which was used to estimate motor vehicle emissions of VOC, NOx, PM_{10}, $PM_{2.5}$, and greenhouse gases on the roadway network in a project area. Average hourly emission estimates were calculated using the vehicle count data provided in the transportation study, mileage between intersections, and county-specific model inputs provided by MassDEP.

A total of 54 roadway links and 23 intersections were included in the mesoscale analysis. Peak hour traffic volumes from the traffic analysis were used to estimate the average daily traffic ("ADT") assuming a 10 percent K-Factor.[6] This ADT was then converted into average hourly volumes by dividing by 24. Average speed was assumed based on roadway type (typically 10-40 mph for arterial roads) for all links. Distances for the links were estimated with mapping software. Emissions estimates are in grams per hour and were converted to tons per year assuming a seven-day week for 52 weeks per year.

For intersection emissions, idle vehicle emission rates were obtained in MOVES4 by using a standardized roadway link with one vehicle and a zero miles per hour vehicle speed. MOVES4 post-processing scripts produce a mass per hour emission rate for idling vehicles. This method is recommended by EPA to get emission factors for air quality concentration analyses of idling vehicles at intersections (microscale analyses). [7] These emission factors were then used with vehicle counts and delay information from the traffic analyses to estimate vehicle emissions at intersections. Appendix C presents the intersection emissions calculations, and the Phase 1 Project-specific link data input into the MOVES4 program.

3.4.3.2 Results

Results of the mesoscale analysis are presented in Tables 3-3 and 3-4.

Table 3-3 presents the change in total emissions from the Existing condition to the 2033 No-Build condition. Typically, a decrease in total emissions, even with the modest increases in traffic vehicle miles traveled ("VMT"), is attributable to anticipated improvements in vehicle engine and

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6 The K factor is a traffic engineering factor that defines the proportion of the annual average traffic that would occur in one hour.

7 U.S. EPA, 2010. Using MOVES in Project-Level Carbon Monoxide Analyses. EPA-420-B-10-041.

emissions technologies, which are expected to reduce the per-vehicle emission rates. A 2% decrease in VOC, a 10% decrease in NOx, and a 6% decrease in $PM_{2.5}$ are predicted.

Table 3-3 Regional Mesoscale (Indirect) Emissions Analysis Summary (No Build)

2025 Exiting vs 2033 No-Build	VOC lbs/day	VOC tons/yr	NOx lbs/day	NOx tons/yr	PM_{10} lbs/day	PM_{10} tons/yr	$PM_{2.5}$ lbs/day	$PM_{2.5}$ tons/yr
2025 Existing	33.2	6.1	15.6	2.8	5.57	1.02	1.15	0.21
2033 No-Build	32.6	5.9	14.0	2.6	6.56	1.20	1.08	0.20
Difference	-0.6	-0.1	-1.6	-0.3	0.99	0.18	-0.06	-0.01
Difference (%)	-2%	-2%	-10%	-10%	18%	18%	-6%	-6%

Table 3-4 compares the Build to the No-Build condition. Compared to the No-Build condition, the 2033 Build condition shows an approximately 4% increase in VOC and $PM_{2.5}$ emissions from the anticipated increase in vehicle emissions. These increases are less than 0.3 tons per year, and therefore are not expected to have a significant impact on the air quality near the Phase 1 Site. An approximately 3% decrease in NOx is also predicted.

Table 3-4 Regional Mesoscale (Indirect) Emissions Analysis Summary (Build)

2033 No-Build vs 2033 Build	VOC lbs/day	VOC tons/yr	NOx lbs/day	NOx tons/yr	PM_{10} lbs/day	PM_{10} tons/yr	$PM_{2.5}$ lbs/day	$PM_{2.5}$ tons/yr
2033 No-Build	32.6	5.9	14.0	2.6	6.56	1.20	1.08	0.20
2033 Build	34.0	6.2	13.6	2.5	6.81	1.24	1.12	0.21
Difference	1.4	0.3	-0.4	-0.1	0.25	0.05	0.04	0.01
Difference (%)	4%	4%	-3%	-3%	4%	4%	4%	4%

3.4.3.3 Conclusions

Mesoscale analysis results show only relatively small increases (<5%) in Phase 1 Project-related emissions when comparing the 2033 Build condition to the 2033 No-Build condition due to increased traffic and some signal delay changes. The actual increase in emissions is less than 0.3 tons per year. The small increase in emissions is not expected to have air quality impacts that would result in an exceedance of health-protective NAAQS and therefore the Phase 1 Project would not adversely impact EJ communities near the Phase 1 Site.

3.5 Analysis of Impacts to Determine Disproportionate Adverse Effects

3.5.1 Overview of Impacts

3.5.1.1 Master Plan Project

The Master Plan Project will greatly improve existing site conditions by creating a vibrant mixed-use development that will include new public open space, recreational opportunities, climate resilient approaches, economic development, and new housing. The Master Plan Project is not

anticipated to affect the vulnerable health criteria or the potential sources of pollution that presently exist within Boston due to the nature of the Master Plan Project.

3.5.1.2 Phase 1 Project

The Phase 1 Project is largely anticipated to result in a net benefit to the community. The Phase 1 Project is not anticipated to affect the vulnerable health criteria or the potential sources of pollution that presently exist within Boston due to the nature of the Phase 1 Project. Additionally, a mesoscale analysis was conducted to quantify the emissions related to the Phase 1 Project compared to a No-Build scenario. Results are presented in Section 3.4 and show only relatively small increases in Phase 1 Project-related emissions when comparing the 2033 Build condition to the 2033 No-Build condition due to increased traffic. The emission rates for NO_2 and $PM_{2.5}$ at all intersections included in the transportation study were determined based on Phase 1 Project-generated hourly peak vehicle trips, delay times and estimated MOVES emission factors. These emission factors were used to estimate air quality impacts for comparison against health-based NAAQS using data from previous projects. Estimated air quality impacts will not exceed health-based NAAQS and therefore the Phase 1 Project will not adversely impact EJ communities near the Phase 1 Site.

Air quality and traffic impacts due to construction activities will be concentrated in areas where construction is occurring on the Phase 1 Site. Construction period impacts will be mitigated and managed through a Construction Management Plan ("CMP") that will be prepared for and reviewed by the City and Massport. Mitigation for construction period impacts is discussed in Chapter 12. Construction impacts are not expected to result in a disproportionate impact to surrounding EJ communities or result in negative public health consequences.

3.5.2 Combined Sewer Overflow Impacts to EJ Populations

Stormwater from the Master Plan Site discharges/will discharge to BWSC separate sewers and will not increase CSO discharges. The proposed reduction in impervious area and stormwater infiltration and recharge BMPs will also reduce stormwater discharges to the CSO and ultimately to the Reserved Channel.

3.5.3 Flooding Risks on EJ Populations

The climate change related impacts that were determined in accordance with the RMAT tool have been mitigated through the Master Plan Site's proposed elevation and progressive adaptation strategies. As noted in Chapters 6 and 10, the Master Plan Project includes a number of measures to minimize and mitigate impacts related to storm surge, increased precipitation and extreme heat events. Given the anticipated reduction in stormwater runoff, specifically, and the location of the Master Plan Site in relation to nearby EJ populations, it is not anticipated that the Master Plan Project will exacerbate flooding risks for nearby EJ populations.

3.5.4 Phase 1 Project Short-term and Long-term Construction and Air Quality Impacts

The Proponent has considered the nature and severity of all short- and long-term impacts the Phase 1 Project could have in both magnitude and duration.

3.5.4.1 Traffic Proximity and Volume Impacts

The Phase 1 Project is expected to generate approximately 2,327 net new daily vehicle trips (see Section 7.3.5 for details of the Phase 1 trip generation). However, the vehicle trips are not anticipated to have a significant impact on intersections located in EJ block groups.

Construction Traffic

The Phase 1 Project will minimize traffic-related construction impacts to the extent possible through the use of a CMP. Construction traffic includes the daily trips of workers and construction vehicles transporting materials and used for general operation. Construction traffic will follow the routes as determined through coordination with Massport, the City, and the Proponent to minimize impacts on existing populations and will be set forth in the CMP.

3.5.4.2 Construction Air Quality Impacts

Air quality impacts due to construction activities are anticipated to be short-term. Construction air quality impacts include the creation of fugitive dust and emission of diesel exhaust. There are extensive mitigation measures that will be in place to control dust and diesel emissions and ensure that construction activities create minimal impacts to the surrounding communities. See Chapter 12 for additional information.

Chapter 4

Public Health

4.0 PUBLIC HEALTH

4.1 Introduction

Public health, assessed as the health of a whole population, may be impacted by environmental changes. Vulnerable communities including the elderly, children, and people with pre-existing conditions are particularly susceptible to public health consequences and risks. These vulnerable communities may or may not be located within EJ communities. The Master Plan Project's Designated Geographic Area ("DGA") contains several EJ populations, described in Chapter 3, with additional non-EJ populations also located within the DGA. This chapter expands upon the analyses provided in Chapter 3, and focuses on the risks and impacts to vulnerable communities by investigating the short- and long- term impacts of the Master Plan Project on the above-mentioned vulnerable populations. This chapter also provides information on permits which may impact public health and vulnerable health criteria.

Based on the below analysis, the Master Plan Project is not anticipated to result in any material adverse impacts to public health. The Master Plan Project will abide by all permit requirements to protect and minimize impacts to public health, and, as detailed in Chapter 3, the Master Plan Project will also follow construction period best management practices to minimize and mitigate any construction period impacts which are, by their nature, temporary and short-term.

4.2 Potential Public Health Impacts

4.2.1 Overview

The Master Plan Project's potential to have long-term public health impacts is minimal and primarily limited to new vehicle trips per day and their associated air quality impacts, water use, and wastewater generation. Minor construction related public health impacts can be anticipated, though not in excess of what one could expect through construction in an urban environment. Primarily, construction related impacts are anticipated in the form of fugitive dust and noise. These impacts are anticipated to be mitigated through a CMP that will be developed in coordination with the City and Massport to limit potential exposure.

Beneficial impacts are also anticipated due to the reduction in impervious area and increase in tree canopy, significant new open space that will allow for passive and active recreation in an area that is largely inaccessible under existing conditions, an increase in residential units, and climate-focused designs that will help minimize potential future climate concerns.

Chapter 13 includes proposed the Master Plan Project's proposed mitigation measures.

4.2.2 Vulnerable Health Criteria

As discussed in Section 3.3.1, at the municipal level, Boston meets the vulnerable health criteria for childhood blood lead levels, childhood asthma, and low birth weight. Table 4-1 presents the census tracts within the DGA that exceed 110% of a vulnerable health criterion.

Table 4-1 Regions That Exceeded 110% of the Statewide Rate

Municipality	Tract	Vulnerable Health Criteria
Boston	801	Childhood Blood Lead Levels; Low Birth Weight
	606.04	Low Birth Weight;
	607	Low Birth Weight
	610	Low Birth Weight
	611.01	Low Birth Weight
	701.03	Low Birth Weight
	701.04	Low Birth Weight
	702.02	Low Birth Weight
	704.02	Low Birth Weight
	907	Low Birth Weight

The Master Plan Project is not anticipated to impact or exacerbate any of the vulnerable health criteria within any community. The Master Plan Project is not anticipated to impact the childhood asthma rates, as air quality impacts related to transportation are not anticipated to exceed NAAQS, as previously discussed in Chapter 3. Additionally, the Master Plan Project is not anticipated to result in increased childhood blood lead as lead paint in older buildings is the primary cause of childhood lead exposure as discussed in the DPH's Environmental Justice Tool website. The Master Plan Project will not be utilizing lead-based paint. Finally, the Master Plan Project is not anticipated to impact low birth weight rates as the Master Plan Project is not anticipated to contribute to indoor or outdoor environmental contaminants as discussed in Section 3.4.

4.2.3 Performance Standards Intended to Protect Public Health

As described in Section 1.3, the Master Plan Project requires various local, state, and federal permits. Permits may include specific standards for public health or may be broadly related to public health. The sections below provide information on permits and how they may relate to public health.

National Pollutant Discharge Elimination System ("NPDES")

NPDES permits contain information on the discharge, monitoring and reporting of pollutants to ensure the discharge does not negatively impact water quality or public health. The Master Plan Project will require one or more NPDES Construction General Permit(s) which generally focuses on stormwater discharges from construction activities. Stormwater from construction sites can contain various pollutants and materials such as sediment, waste and debris, oil and grease, chemicals, and pesticides which may negatively impact water quality. The Master Plan Project will

abide by all necessary requirements under this permit to ensure water quality and public health is protected during construction related activities.

Massachusetts Department of Environmental Protection – Notice of Demolition / Construction

As described in Section 1.3.3, MassDEP requires notification prior to commencement of construction. Though this notification does not require or implicate public health, it makes state officials aware of projects and assists in ensuring appropriate response.

Massachusetts Department of Environmental Protection – Chapter 91 Waterways License

Certain development sites will require a Chapter 91 Waterways License. Though the Chapter 91 License does not contain public health standards, its goal is to promote and enhance public access to the waterfront. The Master Plan Project will enhance the waterfront along the Reserved Channel, serving as a benefit to members of the community.

4.2.4 Massachusetts Water Resource Authority – Sewer Use Discharge Permit

Certain uses within the Master Plan Project may require a Sewer Use Discharge permit from the MWRA. The Sewer Use Discharge Permit is required for users who discharge industrial wastewater or other industrial waste into the MWRA system. Based on the permit application, the MWRA may include terms and conditions to ensure that the sewer discharge complies with federal and state requirements. It is anticipated that these conditions, if any are required, are used to protect the environment and human health. It is expected that any tenant on the Master Plan Site will obtain a Sewer Use Discharge Permit, if required, and comply with its requirements. If required, the tenant will report information related to the description of operations, flow measurements, measurement of pollutants, certification and compliance scheduled, as required under 40 CFR 403.12.

4.2.5 Asbestos Containing Materials

All identified Asbestos Containing Material ("ACM") will be abated prior to demolition activities. The Proponent will submit to MassDEP an Asbestos Removal Notification (Form AQ04 (ANF-001)) at least 10 working days prior to initiating work for any asbestos abatement, removal, or disposal. Compliance with 310 CMR 7.00 will ensure public health will not be impacted by ACM.

Chapter 5

Chapter 91/Tidelands

5.0 CHAPTER 91/TIDELANDS

5.1 Introduction

This Chapter provides the information in response to the 'Chapter 91/Tidelands' section of the Secretary's Certificate on the ENF, including:

- Additional information regarding Pappas Way with respect to Landlocked Tidelands and the categorization of jurisdictional tidelands;
- Compliance with the baseline Waterways Regulations and performance standards therein;
- Discussion of the permitting pathways for future phases of the Master Plan Project, including potential authorization of components of the Master Plan Project under a Waterfront Development Plan ("WDP"); and
- Updated information about the Phase 1 Project's anticipated public benefits.

5.2 Landlocked Tidelands

In July of 1960, the Secretary of the United States Navy was authorized by Congressional Act to transfer approximately 16 acres of land within the US Navy Annex Area "E", which encompasses the Master Plan Site, to the Massachusetts Port Authority ("Massport" [see Public Law 86-602[1]]). Aerial imagery and street maps produced between 1955 and 1990 (see Appendix D) indicate the presence of a roadway along the westerly shoreline of the Reserved Channel and, in this instance, Massport's acquisition of Annex Area "E" circa 1960 is understood to have established and maintained that roadway, now known as Pappas Way, as a street for vehicular use that was generally accessible to the public at large. Massport, a public agency, has been responsible for the maintenance and repair of the roadway since its acquisition and such maintenance is currently delegated to Massport's ground lease tenant. For purposes of determining the extent of Landlocked Tidelands within the Master Plan Site consistent with 310 CMR 9.02, on January 1, 1984, Pappas Way appears to have entirely separated the filled tidelands landward of the roadway from the flowed tidelands of the Reserved Channel. Accordingly, only such filled tidelands which are presently located within 250 feet of the high water mark of the Reserved Channel are subject to the licensing requirements of the Waterways Regulations.

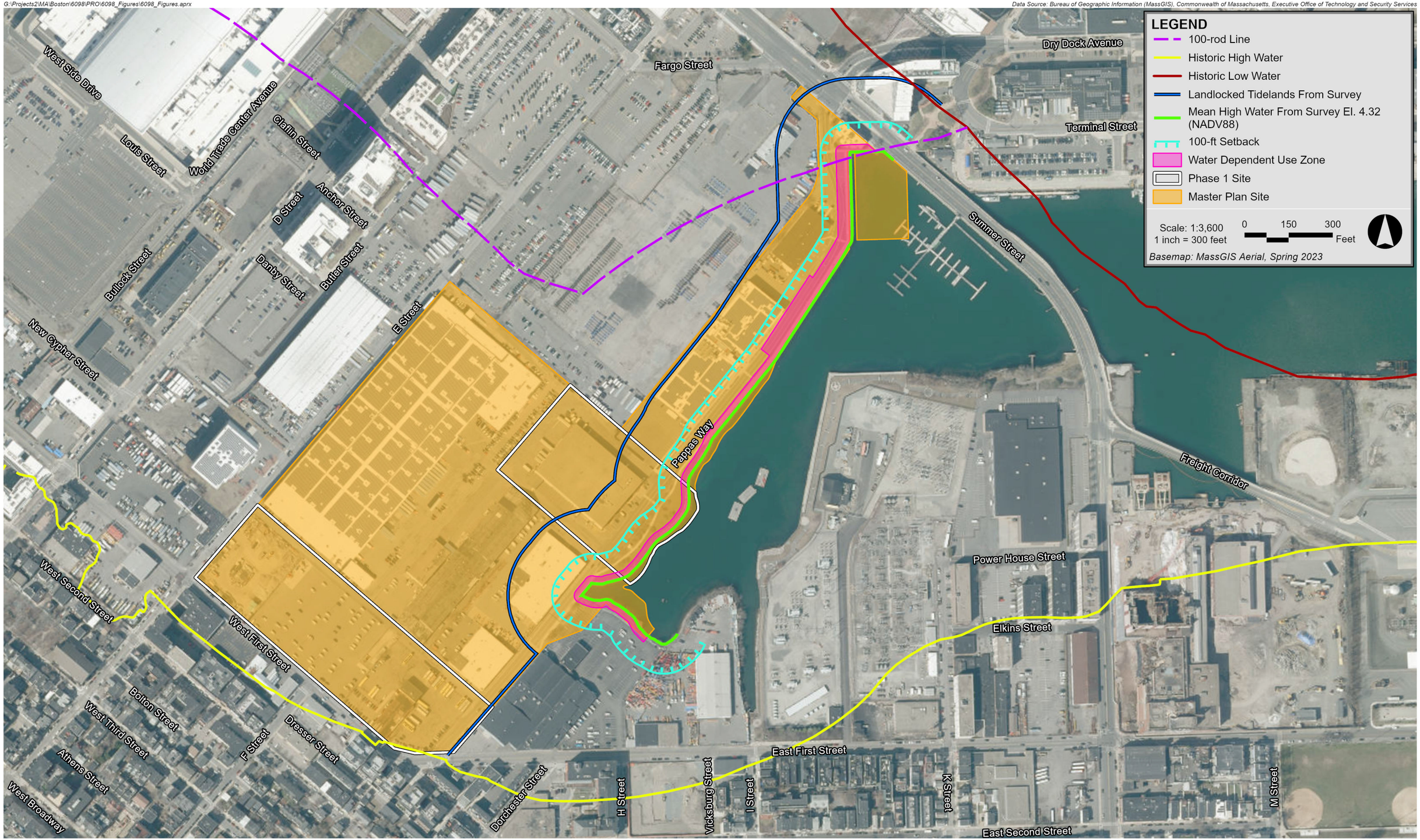
Jurisdictional and Landlocked Tidelands based on a surveyed delineation of the portions of the Master Plan Site within 250 feet of the high water mark in Reserved Channel are shown on Figure 5-1.

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[1] https://www.congress.gov/86/statute/STATUTE-74/STATUTE-74-Pg355.pdf

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 5-1
Tidelands Jurisdiction

5.3 Master Plan Project

As noted in Section 1.2.3, the Master Plan Project is conceived to complement and connect to its distinct neighboring districts, including the Seaport District, the established South Boston and Telegraph Hill neighborhoods, and the expansive industrial complexes of Massport and the Raymond L. Flynn Marine Park. The long-term vision includes new and diverse open spaces, multimodal connections, resilient infrastructure, and public benefits for both the new residents, visitors, and tenants, as well as surrounding neighbors. Along the Reserved Channel waterfront, an approximately 3.04-acre active open space is proposed, incorporating wildlife habitat, storm surge protection, and direct physical access to the water.

Within tidelands jurisdiction, the Master Plan Project (see Figure 1-4) anticipates development as follows

Block D: Portions of Block D are located within tidelands jurisdiction, including portions of Building D2, a residential building with ground floor retail and amenity space. Block D is located within the Special Planning Area that will be the subject of the Waterfront Development Plan. At this time, however, the Proponent anticipates that the redevelopment of Block D will comply with all applicable standards of the (baseline) Waterways Regulations.

Block I: Nearly the entirety of Block I is located within jurisdictional tidelands which are categorized as Commonwealth Tidelands. Redevelopment of Block I is anticipated to include two buildings with approximately 746,000 sf of commercial research laboratory uses and approximately 25,000 sf of retail and/or amenity space. At this time, the Proponent anticipates that a Waterfront Development Plan will be approved for the future licensing of structures and uses within Block I.

Block J: Block J is located entirely within jurisdictional tidelands which are categorized as Commonwealth Tidelands. Redevelopment of Block J is anticipated to include one building with approximately 207,000 sf of commercial research laboratory uses and approximately 10,000 sf of retail and/or amenity space. At this time, the Proponent anticipates that a Waterfront Development Plan will be approved for the future licensing of structures and uses within Block J.

Block K: Block K is located entirely within jurisdictional tidelands. As shown on Figure 5-1, portions of Block K are categorized as Private Tidelands and those portions of Block K seaward of the 100-rod line are categorized as Commonwealth Tidelands. Within Private Tidelands, the Proponent envisions the development of a hotel building containing approximately 205,000 sf (approximately 224 keys) and approximately 10,000 sf of retail and/or amenity space which are anticipated to be facilities of public accommodation. A public marina is also anticipated. At this time, the Proponent is evaluating the appropriate regulatory pathway for the redevelopment of Block K.

5.4 Phase 1 Project

In total, the Phase 1 Site comprises approximately 12.86 acres of land and will contain three new city blocks; Blocks A and B are situated along West First Street, and Block C is located along Pappas Way and the Reserved Channel. Blocks A and B are located entirely within Landlocked Tidelands. Block C, shown on Figure 5-2, includes approximately 2.4 acres of filled jurisdictional tidelands. The jurisdictional tidelands of Block C are categorized as Commonwealth Tidelands because they are owned by Massport, an entity of the Commonwealth, pursuant to a ground lease from Massport to affiliates of the Proponent.

As shown on Figure 5-3 and noted in Table 5-1, within filled tidelands of Block C, the Proponent intends to construct portions of a four-story mixed-use commercial building (Building C1) along Pappas Way and fronting an approximately one-acre waterfront open space that is proposed to be revitalized for public use. Redevelopment of Block C within tidelands jurisdiction is intended to comply with the (baseline) regulatory provisions of Chapter 91, including building height, open space standards[2], and ground floor use requirements.

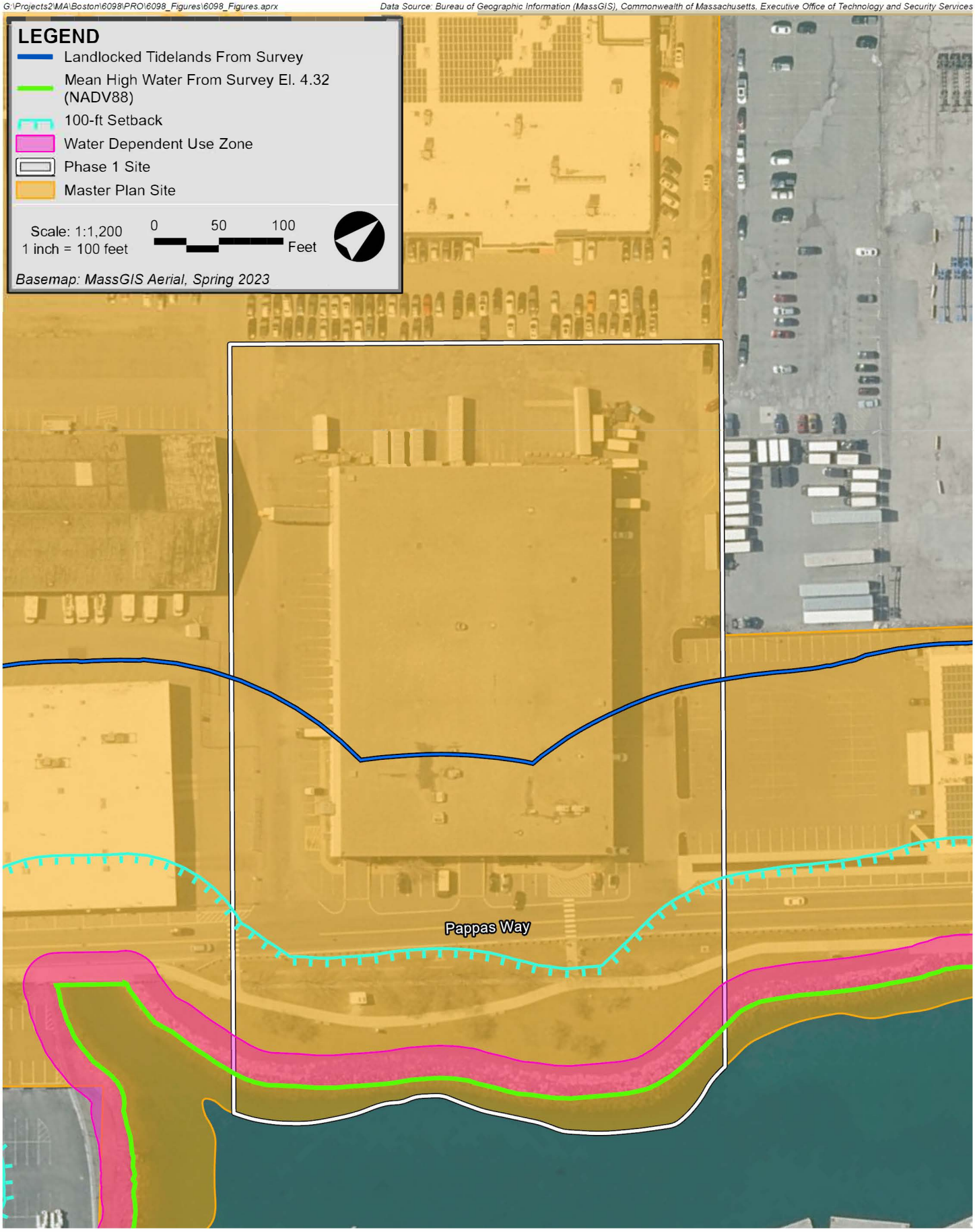
Table 5-1 Block C Site Use Calculations[1]

	Area Within Tidelands		Percentage of Tidelands
	Acres	Square Feet	
Phase 1 Site			
Filled Tidelands[2]	2.40	104,550	-
Flowed Tidelands[3]	0.24	10,450	
TOTAL	**2.64**	**115,000**	
Building Footprint within Tidelands[4]	**0.61**	**26,570**	25% of Filled Tidelands
Open Space within Filled Tidelands	**1.80**	**77,980**	75% of Filled Tidelands
Roadway	0.77	33,541	43% of Open Space
Water Dependent Use Zone	**0.23**	**10,120**	

1. All calculations are approximate and subject to refinement during the permitting process.
2. Area between current Mean High Water and Historic High Water.
3. Area between Parcel Boundary and current Mean High Water.
4. Building footprint calculations are approximate and subject to change, includes all building appurtenances and below grade structures.

[2] Under Chapter 91, open space is the area at ground level, exclusive of areas lying seaward of a project shoreline (i.e., landward current mean high water), that is "open to the sky" and not within building footprint, awnings, overhangs, cantilevered structures, etc. Open space can include all landscaped areas, roadways, parking lots, sidewalks, etc.

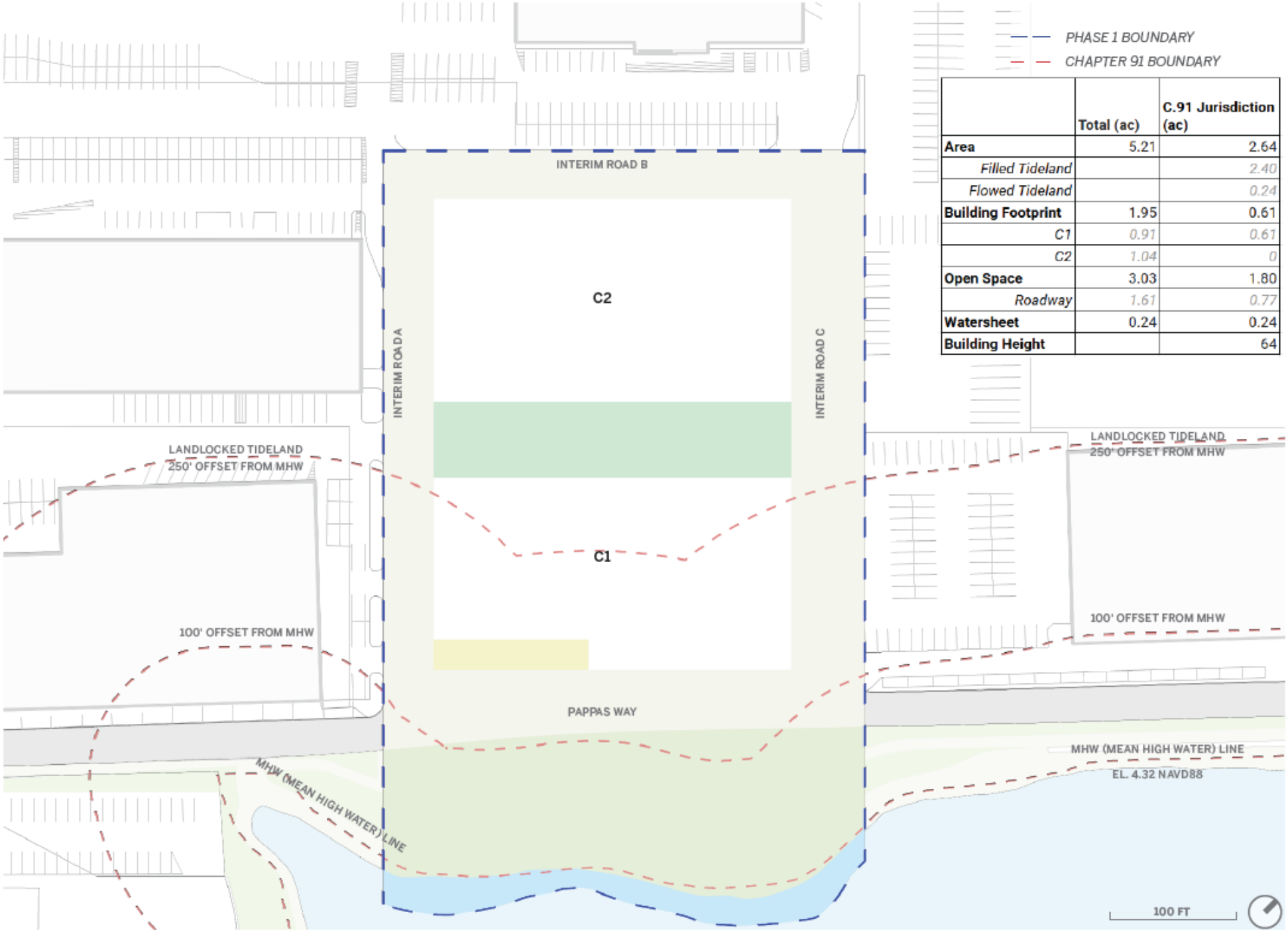
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Reserved Channel Development Boston, Massachusetts

Epsilon Associates Inc.

Figure 5-2
Phase 1, Block C



	Total (ac)	C.91 Jurisdiction (ac)
Area	5.21	2.64
Filled Tideland		*2.40*
Flowed Tideland		*0.24*
Building Footprint	1.95	0.61
C1	*0.91*	*0.61*
C2	*1.04*	*0*
Open Space	3.03	1.80
Roadway	*1.61*	*0.77*
Watersheet	0.24	0.24
Building Height		64

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 5-3
Phase 1, Block C Proposed Conditions

As summarized in Table 5-2, the redevelopment of Block C will comply with all applicable standards of the Waterways Regulations.

Table 5-2 Summary of Block C Compliance with Waterways Regulatory Standards

Citation	Standard	Applicability	Compliance with Standard
310 CMR 9.12	Determination of Water-Dependency	✓	The uses proposed for the Block C are Non-Water-Dependent but redevelopment of Block C will include water-dependent mitigation measures such as the proposed resiliency features designed to mitigate impacts of coastal flooding as well as the creation of publicly accessible open space areas.
310 CMR 9.15(1)(b)	Extended Term Licenses	✓	The Proponent anticipates requesting an extended term license for Block C. Such a term will be essential to the feasibility of the successful redevelopment of Block C.
310 CMR 9.32(1)(a)	Categorical Restrictions on Fill and Structures	✓	None of the proposed activities will be in any Area of Critical Environmental Concern or any Designated Port Area, as such terms are defined in the Waterways Regulations. Accordingly, none of the proposed uses, improvements, or structures within Block C are categorically restricted.
310 CMR 9.33	Environmental Protection Standards	✓	The development of Block C will comply with the applicable environmental protection standards including, without limitation, the Massachusetts Wetlands Protection Act, the Massachusetts Clean Waters Act, and the Massachusetts Coastal Zone Management Act.
310 CMR 9.34	Zoning & Planning	✓	Because Block C is owned by Massport, it is not subject to municipal zoning and land use controls. However, as have other projects developed on Massport property, Block C will voluntarily undergo extensive review by the public and the City of Boston under the Large Project Review provisions of Article 80B of the City of Boston Zoning Code. The Master Plan Site is not subject to a Municipal Harbor Plan.
310 CMR 9.35(2)	Standards to Preserve Water-related Public Rights – Navigation		*These standards are not applicable. The development of Block C does not include any development affecting navigation.*
310 CMR 9.35(3)	Standards to Preserve Water-related Public Rights – Public Rights Applicable to Tidelands	✓	Redevelopment of Block C will include new pedestrian infrastructure, bicycle paths, and publicly accessible open space on the Phase 1 Site's tidelands and non-jurisdictional areas.

Table 5-2 Summary of Block C Compliance with Waterways Regulatory Standards (Continued)

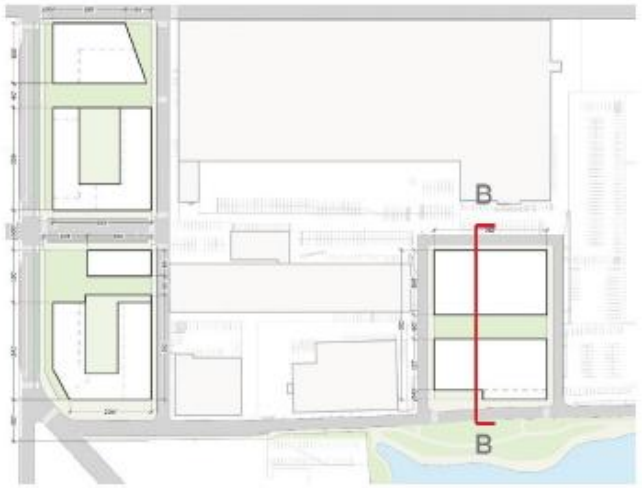
Citation	Standard	Applicability	Compliance with Standard
310 CMR 9.35(4)	Standards to Preserve Water-related Public Rights – Compensation for Interference with Public Rights in Commonwealth Tidelands		*The development of Block C is not water-dependent.*
310 CMR 9.35(5)	Standards to Preserve Water-related Public Rights – Management of Areas Accessible to the Public	✓	Management and Signage Plans will be developed and presented in connection with the issuance of Waterways License(s) for Block C and the Master Plan Project. Elements of those Management Plans relating to publicly accessible open spaces or Facilities of Public Accommodation ("FPAs") will be compliant with the Waterways Regulations and will ensure that all publicly accessible areas are properly managed and maintained.
310 CMR 9.36	Standards to Protect Water-dependent Use	✓	The Master Plan Project, including redevelopment of Block C, will enhance access to the watersheet and support the creation of and access to publicly accessible open space. Other than publicly accessible open space, no water-dependent uses currently exist on Block C. Block C is not within a Designated Port Area ("DPA") (see Figure 5-5).
310 CMR 9.37	Engineering and Construction Standards	✓	All fill and structures will be certified by a Registered Professional Engineer and comply with state requirements for construction in flood plains where applicable.
310 CMR 9.38	Standards for Recreational Boating Facilities		*No public recreational boating facilities as proposed.*
310 CMR 9.39	Standards for Marinas, Boatyards, and Boat Ramps,		*No such facilities are proposed.*
310 CMR 9.40	Standards Dredging and Dredged Material Disposal		*Dredging and/or dredged material disposal are not proposed.*
310 CMR 9.51(1)	Facilities of Private Tenancy and significant conflicts in operations.	✓	Building C1 will contain upper floor Facilities of Private Tenancy ("FPTs"). These uses and their operations are not expected to conflict with any water-dependent facility which reasonably can be expected to locate on or near Block C or within the Master Plan Site. To the extent that water-dependent uses (*i.e.*, passive/active use of public open space, access to the watersheet, etc.) occur at Block C and the Master Plan Site, the FPTs will not negatively impact or conflict with those uses.

Table 5-2 Summary of Block C Compliance with Waterways Regulatory Standards (Continued)

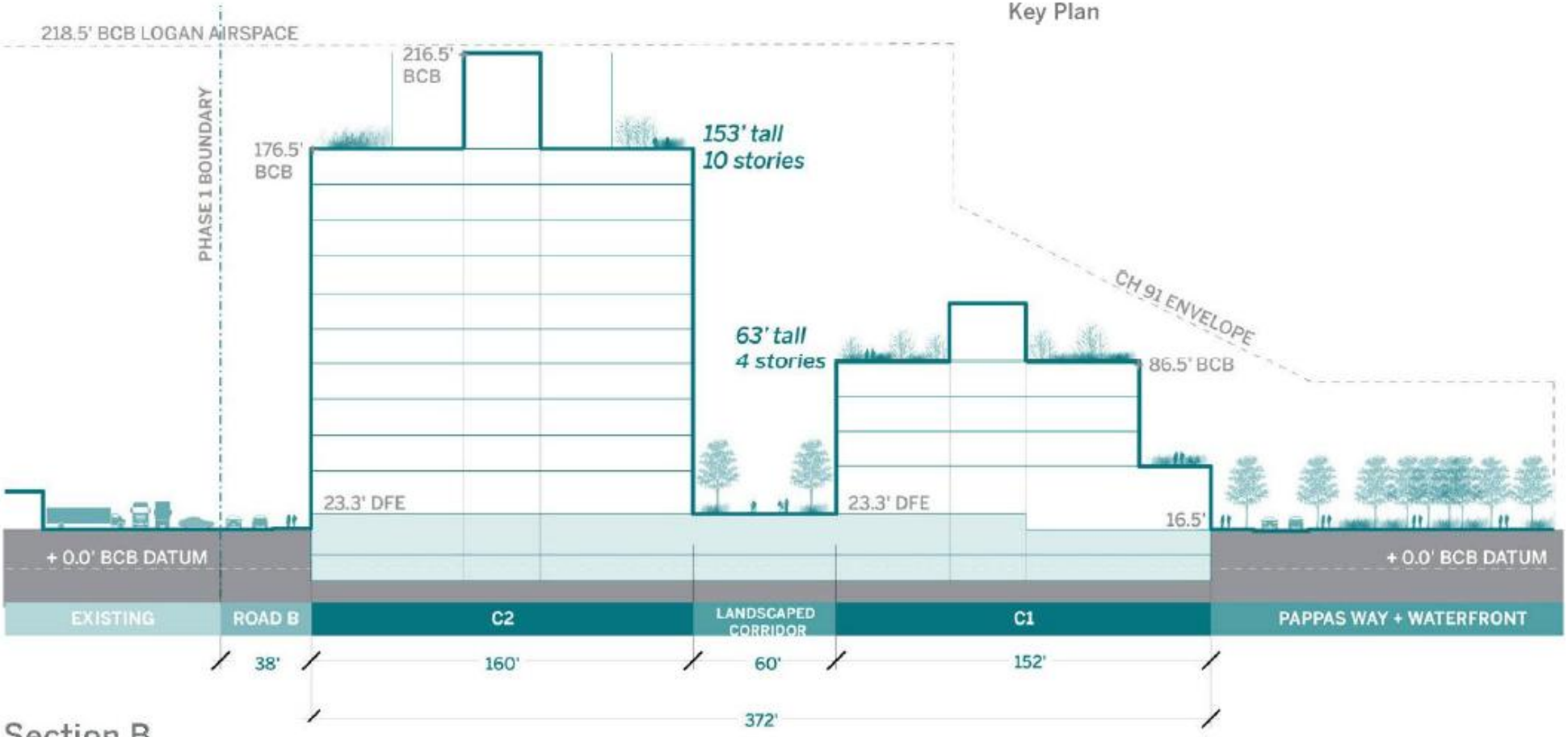
Citation	Standard	Applicability	Compliance with Standard
310 CMR 9.51(2)	Utility and adaptability of the site for water-dependent purposes.	✓	Redevelopment of Block C is expected to be consistent with this standard. Visual and pedestrian connections to the proposed public open space will facilitate pedestrian circulation through Block C and the Master Plan Site. Ground floor FPAs within Building C1 will effectively support the activation of surrounding publicly accessible open space.
310 CMR 9.51(3)(a)	New pile-supported structures for nonwater-dependent use.		*Redevelopment of Block C does not include pile-supported structures.*
310 CMR 9.51(3)(b)	Conservation of Capacity for Water-dependent Use - Nonwater-dependent Facilities of Private Tenancy	✓	No structures are proposed within 100 feet of mean high water.
310 CMR 9.51(3)(c)	Conservation of Capacity for Water-dependent Use - Water Dependent Use Zone	✓	Building C1 and parking facilities at or above grade will not be located within the water-dependent use zone ("WDUZ").
310 CMR 9.51(3)(d)	Conservation of Capacity for Water-dependent Use - Open Space	✓	Redevelopment of Block C is expected to be consistent with this standard. As described above, no less than 50% of the jurisdiction tidelands within Block C will be maintained as open space.
310 CMR 9.51(3)(e)	Conservation of Capacity for Water-dependent Use - Building Height	✓	Within Tidelands Jurisdiction, Building C1 will not exceed the maximum height of 63 feet allowed in the Waterways Regulations at 310 CMR 9.51(3)(e). Please see Figure 5-4.
310 CMR 9.52(1)	Utilization of Shoreline for Water-dependent Purposes - Facilities that generate water-dependent activity and pedestrian access networks	✓	Pedestrian walkways and open space will be constructed to provide connections through Block C to the adjoining parcels.

Table 5-2 Summary of Block C Compliance with Waterways Regulatory Standards (Continued)

Citation	Standard	Applicability	Compliance with Standard
310 CMR 9.52(2)	Utilization of Shoreline for Water-dependent Purposes - Public walkways/other public pedestrian facilities		*Block C includes a WDUZ.*
310 CMR 9.53(1)	Activation of Commonwealth Tidelands for Public Use	✓	No public agency intends to pursue a water-dependent use project within Block C.
310 CMR 9.53(2)(a)	Commonwealth Tidelands – Water-based public activity	✓	The Proponent is evaluating the feasibility of shoreline facilities that promote water-based public activity. Such facilities may include "touch-and-go" facilities for water shuttles and/or publicly accessible dock facilities for small human-powered craft (*e.g.*, kayaks), recognizing safety consideration associated with the industrial uses of the Reserved Channel to the east of the Summer Street Bridge. The Proponent anticipates that such facilities would be planned, coordinated, and permitted as a component of the Master Plan Project, if not a component of the Phase 1 Project and the licensing of structures and uses within Block C.
310 CMR 9.53(2)(b)	Commonwealth Tidelands – Publicly accessible open space	✓	Within the jurisdictional tidelands of Block C, all open space, as that term is defined in the Waterways Regulations, will be publicly accessible.
310 CMR 9.53(2)(c)	Commonwealth Tidelands - Facilities of Public Accommodation (FPA)	✓	No less than 75% of Building C1 interior ground floor square footage will be devoted to FPAs.
310 CMR 9.53(2)(d)	Commonwealth Tidelands – Management Plans	✓	Management and Signage Plans will be developed and presented in connection with the issuance of Waterways Licenses for the redevelopment of Block C and the Master Plan Project. Elements of those Management Plans relating to publicly accessible open spaces or FPAs will be compliant with the Waterways Regulations.
310 CMR 9.54	Consistency with Coastal Zone Management Policies	✓	Redevelopment of Block C is consistent with all policies of the Massachusetts Coastal Zone Management Office, pursuant to 301 CMR 20.05(3).



Key Plan

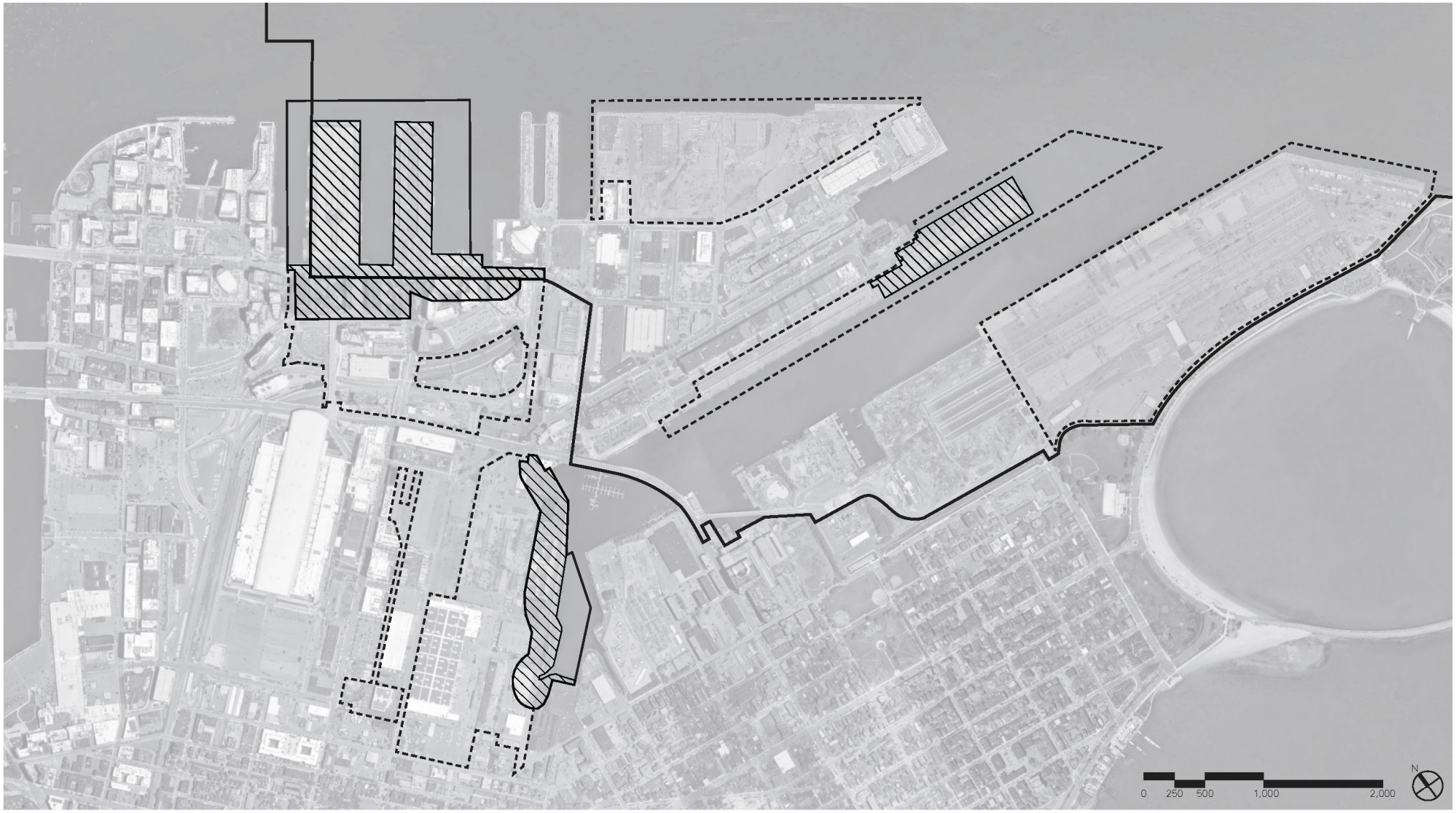


Section B

Reserved Channel Development Boston, Massachusetts

Source: SOM

Figure 5-4
Block C Section



South Boston Designated Port Area ("DPA") Map:
https://www.mass.gov/files/documents/2018/05/23/south-boston-dpa-map.pdf

Figure 5-5
Massport Special Planning Area

5.5 Waterfront Development Plan

Pursuant to 310 CMR 9.03(3), Massport and MassDEP entered into a Memorandum of Understanding ("MOU") dated March 15, 2001, as amended in 2022, in order to outline MassDEP's Chapter 91 jurisdiction with respect to certain activities, including those undertaken on certain portions of Massport-owned land in South Boston that include both Water-Dependent Industrial Uses or Accessory Uses and Nonwater-Dependent Uses (as each such term is defined in the Waterways Regulations). The MOU states that it constitutes the exclusive regulatory framework for the regulation of such structures and uses on those portions of jurisdictional Massport-owned properties in South Boston subject to the MOU. As noted above, portions of the Master Plan Site are owned by Massport, leased to the Proponent under a long-term Ground Lease, and subject to the MOU.

The MOU established a Special Planning Area ("SPA") on particular Massport-owned properties in South Boston within which future projects that include both Water-Dependent Industrial Uses and Nonwater-Dependent Uses may be undertaken pursuant to Waterfront Development Plans approved by MassDEP in accordance with the joint Massport/MassDEP review process set forth in the MOU. The SPA is shown on Figure 5-5. Recent Waterfront Development Plans proposed by Massport and approved by MassDEP include the Final Northern Avenue Waterfront Development Plan (2001) as amended (2014), the Final Waterfront Development Plan for Commonwealth Pier (2019), and the Final Waterfront Development Plan for 88 Black Falcon Avenue (2023), each of which is related to a mixed-use development project located on Massport-owned land in South Boston.

Waterfront Development Plans approved by MassDEP pursuant to the MOU are required to provide, among other things, a description of the proposed land uses and dimensional characteristics of buildings, and to outline the public benefits, substitutions and offsets, as appropriate, required for the licensing of mixed-use development projects within the SPA. The MOU provides that alternative standards may be established in an approved WDP to serve as Substitutions for applicable performance standards of the Regulations. As described in Section 5.3, the Proponent anticipates that the redevelopment of Blocks I and J will comply with the applicable regulatory performance standards of the Waterways Regulations, as set forth in the MOU, except as specifically modified by the Waterfront Development Plan. It is anticipated that the Waterfront Development Plan will establish Substitutions for building height and open space standards that are necessary to make possible a sustainable mixed-use redevelopment of Blocks I and J. The Waterfront Development Plan will also outline the public benefits and Offsets, as appropriate, required for the licensing of nonwater-dependent uses within the Special Planning Area.

As generally set forth in Section 3.3 of the MOU, submission of a Preliminary Waterfront Development Plan to MassDEP, with a copy to the Massachusetts Office of Coastal Zone Management ("CZM"), initiates its review process. Within twenty days of receipt by MassDEP of a Preliminary Waterfront Development Plan, MassDEP is obligated to consult with Massport to discuss objectives and plan elements for the Special Planning Area.

During the 20-day consultation period, MassDEP is required to publish a public notice of receipt of the Preliminary Waterfront Development Plan in the *Environmental Monitor*, and to consult with CZM and other state agencies to evaluate the consistency of the Waterfront Development Plan with applicable state agency plans and policies, including applicable CZM policies.

Publication of the public notice in the *Environmental Monitor* commences a 30-day public comment period, during which MassDEP will accept public comments and convene a public meeting to address public comments regarding the Preliminary Waterfront Development Plan.

Following the conclusion of the public comment period on the Preliminary Waterfront Development Plan, the MOU calls for Massport to incorporate the "reasonable comments" received from MassDEP and the public into a Final Waterfront Development Plan to be submitted to MassDEP for its review and approval. Upon receipt of the Final Waterfront Development Plan, the MOU calls for MassDEP to publish notification of its receipt in the *Environmental Monitor* and for MassDEP to approve, conditionally approve, or disapprove the Final Waterfront Development Plan within 45 days of the publication of the *Environmental Monitor* notice.

When a specific project is proposed within an area covered by an approved WDP, as is expected for Blocks I and J, the WDP provides the exclusive basis for Chapter 91 licensing of the project by MassDEP in conformance with Article 5 of the MOU. In order to issue a license under the MOU, the MassDEP Waterways Program must find that (i) the proposed project is consistent with the use and dimensional standards outlined in the Regulations, as these may be modified by the applicable WDP, and (ii) the proposed project provides public benefits and offsets consistent with those required by the WDP. The licensing process will require notification of the application in accordance with the Waterways Regulations and will require a public hearing conducted by Massport and MassDEP.

5.6 Public Benefits Determination - Phase 1

The Landlocked Tidelands Legislation (Chapter 168 of the Acts of 2007) names the Secretary of Energy and Environmental Affairs (the "Secretary") as the "administrator of tidelands," and requires the Secretary to conduct a "public benefit review" for certain projects located on tidelands and to issue a written determination (the "Public Benefit Determination") for such projects. Such public benefit reviews must be undertaken for any project proposed to be located on tidelands that also requires the filing of an EIR pursuant to MEPA. This section describes how the Master Plan Project will provide appropriate public benefits and will be adequately protective of the public trust rights inherent in tidelands of the Commonwealth.

301 CMR 13.00 (the "Regulations") establishes the procedures and standards to implement the requirements of the Landlocked Tidelands Legislation. Under the Regulations, in making the Public Benefit Determination, the Secretary must consider the following:

"Purpose and effect of the development, the impacts on abutters and the surrounding community; enhancement to the property, benefits to the public trust rights in tidelands or other

associated rights, including but not limited to, benefits provided through previously obtained municipal permits; community activities on the development site; environmental protection and preservation; public health and safety; and the general welfare; provided further that the Secretary shall also consider the differences between tidelands and landlocked tidelands and great ponds when assessing the public benefit and shall consider the practical impact of the public benefit on the development."

The Regulations require analysis of a project's impacts on the public's rights of access, use and enjoyment of tidelands that are protected by Chapter 91, and the identification of measures to avoid, minimize, and mitigate any adverse impacts on such rights.

To assist with the Secretary's determination, the following sections address the specific considerations identified in the Regulations and describe how the Phase 1 Project will provide appropriate public benefits and will be adequately protective of the public trust rights inherent in tidelands. Public Benefit Determinations for future phases or buildings are anticipated to be included in future PCNs.

5.6.1 Nature of the Affected Tidelands

As described in Section 5.1, a portion of the Phase 1 Project is comprised of filled tidelands that are entirely separated from flowed tidelands by a public way (Pappas Way) and, as such, are considered Landlocked Tidelands. A portion of the Phase 1 Project within Block C comprises filled and flowed tidelands that are categorized as Commonwealth Tidelands by virtue of its ownership by Massport, a state authority of the Commonwealth of Massachusetts. Accordingly, the redevelopment of those portions of Block C will require authorization under Chapter 91 and the Waterways Regulations in the form of one or more Waterways Licenses. These tidelands are currently used for nonwater-dependent purposes.

5.6.2 Purpose and Effect of the Development

The purpose of the Phase 1 Project is to redevelop an underutilized urban waterfront site into a mixed-use development containing publicly accessible, resilient waterfront open space, up to 935 new residential units, and approximately 84,000 sf of ground floor retail and/or restaurant use, and to activate the Phase 1 Site with FPAs and public amenities.

The Phase 1 Project is expected to provide a range of public benefits. The anticipated effects of the development include the addition of substantial open space, improved multi-modal access, greater resiliency to climate change impacts, and landscaping that supports the City's vision for a vibrant mixed-use waterfront destination.

5.6.3 Impacts on Abutters and the Surrounding Community

Environmental impacts to abutters are expected to be minimized through proposed mitigation measures as detailed in Chapter 13.

Abutters and the surrounding community stand to benefit from the transformation of an underutilized, largely impervious site containing surface parking lots and industrial buildings into an active, mixed-use property, the design of which will incorporate resiliency measures aimed at mitigating and adapting to the future potential of flooding as well as the anticipated challenges of climate change.

5.6.4 Enhancement to the Property

The redevelopment of the Phase 1 Site will improve upon the existing infrastructure and revitalize an underutilized urban waterfront area. The Phase 1 Project will provide safe public access to improved open space at the water's edge. The Phase 1 Project will create new opportunities for FPAs, improve pedestrian access to the shoreline, and ensure that Phase 1 Site is protected from anticipated sea level rise and inundation during coastal storm events.

5.6.5 Benefits to the Public Trust Rights in Tidelands or Other Associated Rights

The Phase 1 Project will provide improved public access to the Phase 1 Site and, consequently, the shoreline that runs along the southern boundary of Block C for members of the public to enjoy. Through providing significant new publicly accessible open space, the Phase 1 Project will enhance pedestrian movement and connectivity as well. Redevelopment of the Phase 1 Site will result in substantial public benefits in tidelands, including the following:

- Improvement of approximately 3.04 acres of new, publicly-accessible open space with associated public amenities. The approximately 3.04-acre publicly-accessible waterfront park is intended to be preserved through long-term public access rights, subject to final design, easement documentation, and agency approvals.
- An open space that will augment access through this portion of South Boston.
- Redevelopment of an underutilized site into a mixed-use development that includes retail/commercial and residential uses.
- Ground level activation of the proposed buildings through programming of FPAs on Commonwealth Tidelands and the activation of public and publicly accessible open space that provide a range of amenities serving a diverse population.

5.6.6 Community Activities on the Development Site

The Proponent's goal is to make the Phase 1 Project an accessible, inclusive, and welcoming destination and gathering place for all. The Phase 1 Project will create a new network of publicly-accessible open spaces that will foster greater physical and visual connectivity between the surrounding neighborhood and the Phase 1 Site and shoreline, while also increasing activity of a waterfront property largely surrounded by industrial uses with pedestrian foot traffic and publicly accessible recreational opportunities. Activation of the Phase 1 Site will also encourage use of the nearby public spaces and further connecting Boston through the inclusion of the Harborwalk.

5.6.7 Environmental Protection and Preservation

Redevelopment of the Phase 1 Site will be done in accordance with all applicable local, state, and federal environmental protection regulations. Table 1-2 in Chapter 1 provides a list of the local, state, and federal permits or approvals anticipated to be required.

The Phase 1 Project includes a variety of measures intended to mitigate potential environmental impacts, including: the management of stormwater and the associated improvements in water quality, site resiliency through raising the elevation of Phase 1, providing 25% of the open space and streetscapes with canopy trees for shading, native and salt tolerant plantings, raised first floor elevations, increased pervious areas, construction of energy and water efficient residential units, the implementation of a robust Transportation Demand Management program, and mitigating construction period impacts.

5.6.8 Public Health and Safety

The proposed transformation of the currently underutilized Phase 1 Site will allow for an activated public realm throughout the day and into the evening. New publicly-accessible open spaces, streetscape improvements and pedestrian walkways will ensure that the Phase 1 Project fosters a pedestrian-friendly environment. Streetscape improvements such as lighting, landscaping, and curbing will encourage walking and enhance overall safety. In addition, provisions for bicycle parking and the Phase 1 Site's proximity to public transportation will help to improve public health and safety by encouraging walking and cycling. The Phase 1 Project design will also incorporate universally accessible design features into building and landscape plans.

5.6.9 General Welfare

Redevelopment of the Phase 1 Site will improve the general welfare of the public by prioritizing pedestrian access and through the creation of public open space and FPAs that encourage the community to safely gather, recreate, and enjoy the nearby waterfront. Streetscape improvements, including lighting, landscaping, generous sidewalks and bicycle accommodations, will encourage walking and cycling, helping to improve both public health and safety in the neighborhood. The proposed transformation of the Phase 1 Site into a vibrant community of residential, retail, and mixed-uses will increase daytime and nighttime activity and promote public safety. FPAs planned for many of the Master Plan Project buildings will activate the ground level and provide services and goods for the local community and others.

5.6.10 Conclusion

The redevelopment of the Phase 1 Site is intended to be consistent with the requirements of the Waterways Regulations by providing exceptional public benefits and protecting the public trust rights inherent in tidelands, as described herein. The Phase 1 Project will transform an underutilized Phase 1 Site into a pedestrian-oriented and bicycle-friendly development that provides public health and safety benefits through the introduction of significant public open space, sustainable building design, increased mobility options, and resiliency measures that help

to protect the surrounding neighborhood. In consideration of the foregoing information, the Phase 1 Project serves a proper public purpose which is expected to provide greater benefit than detriment to the public interests in Commonwealth Tidelands.

Chapter 6

Wetlands and Stormwater Management

6.0 WETLANDS AND STORMWATER MANAGEMENT

6.1 Introduction

This Chapter provides the information in response to the 'Wetlands and Stormwater Management' section of the Secretary's Certificate on the ENF, including:

- A description of wetlands resource area location within the Master Plan Site and preliminary discussion of compliance with the applicable performance standards for those resource areas;
- Discussion of the Master Plan Project's compliance with proposed regulatory standards for Land Subject to Coastal Storm Flowage ("LSCSF"); and
- Description of the proposed stormwater management system, including discussion of compliance with the applicable Stormwater Management Standards.

Please note that the Master Plan Project's approach to climate resilience is provided in Chapter 10, including proposed fill and grading and representative cross-sections of the Master Plan Site.

6.2 Wetlands

To reduce the risk both from future tidal inundations and coastal flooding, most of the Master Plan Site will be elevated to account for projected sea level rise and storm surge. Increasing the elevation of the Master Plan Site is expected to occur in phases, starting with Phase 1. Each phase will include sloped areas to connect open spaces and transportation infrastructure to the existing grades at the edge of each phase boundary.

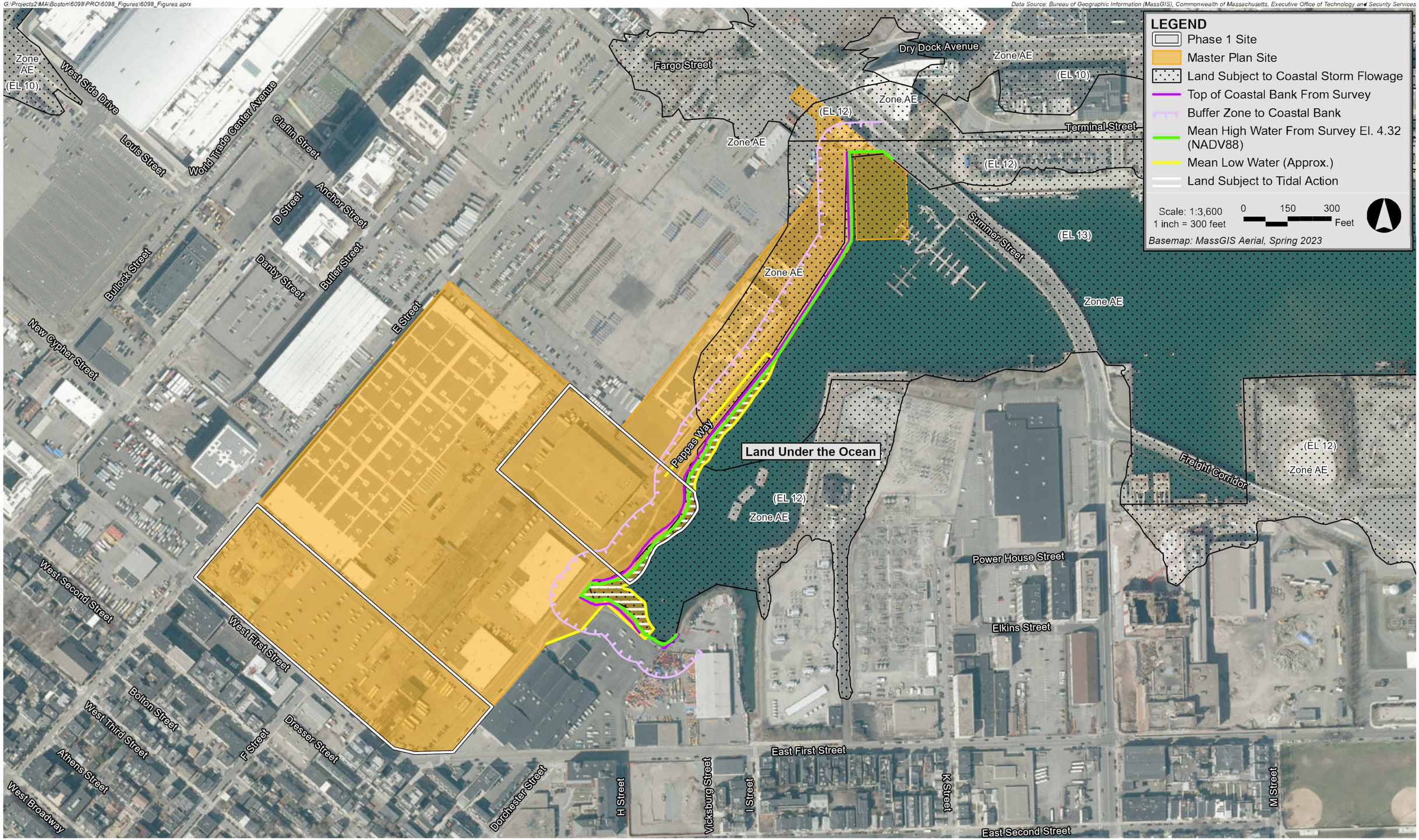
Nearly all of the Master Plan Site is comprised of impervious surfaces, including roadways, surface parking, and commercial buildings. Along the Reserved Channel, there is public pedestrian access including a small green space that is part of the waterfront shared-use path located along the southeastern portion of the Master Plan Site.

Wetland resource areas at the Master Plan Site are described in the following sections. No portion of the Master Plan Site is located within areas mapped as Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife by the Natural Heritage and Endangered Species Program under the Massachusetts Endangered Species Act and the Massachusetts Wetlands Protection Act, respectively (Natural Heritage/MassGIS, August 2021).

Wetland resource areas within the Master Plan Site and Block C of the Phase 1 Site, based on field survey data as applicable, are depicted on Figures 6-1 and 6-2, respectively. Figure 6-3 provides a section showing the FEMA 100-year flood elevation.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

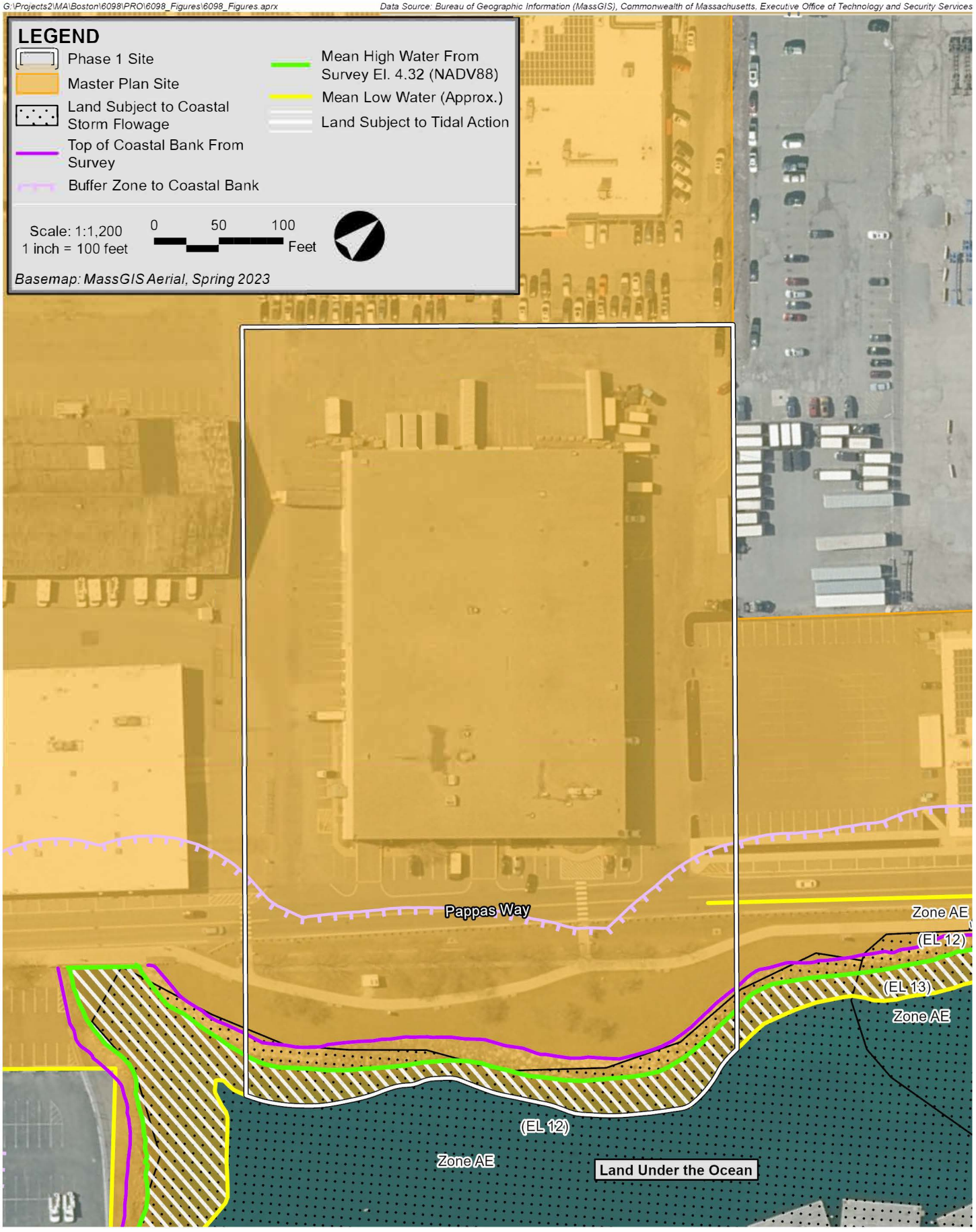


Reserved Channel Development **Boston, Massachusetts**

Epsilon Associates Inc.

Figure 6-1
Wetlands Resource Areas

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts. Executive Office of Technology and Security Services

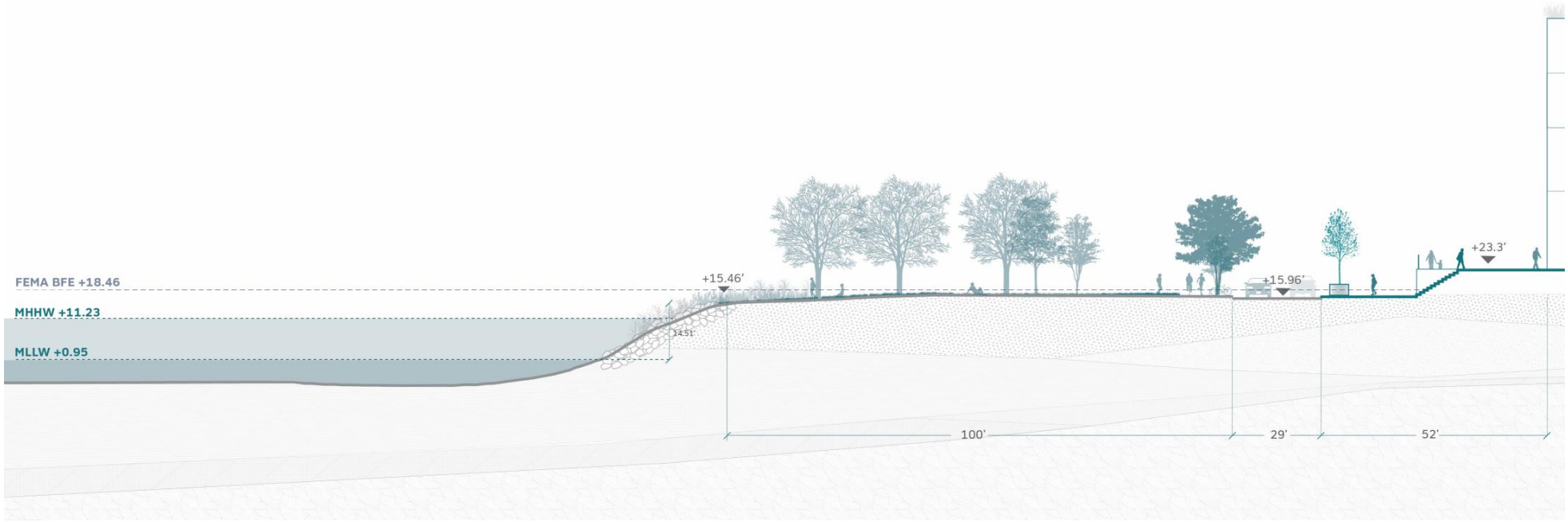


Reserved Channel Development Boston, Massachusetts

Epsilon Associates Inc.

Figure 6-2

Phase 1, Block C Wetland Resource Areas



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: Scape**

Figure 6-3

Proposed Buildings in Relation to FEMA Flood Elevations

Land Subject to Coastal Storm Flowage

LSCSF is defined at 310 CMR 10.04 as land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

According to the applicable Federal Emergency Management Agency Flood Insurance Rate Map ("FIRM") for the City of Boston, Community Panel No. 25025C0081K and 25025C0083J, both dated July 3, 2024, a portion of the Master Plan Site is located within Zone AE (See Figure 6-1). Landward of the seawall and revetment along the Reserved Channel, the FIRM identifies the base flood elevation ("FEMA BFE") at 12.0 feet NAVD 88 (18.5 feet BCB). Approximately 290,200 sf (6.7 acres) of the Master Plan Site is LSCSF.

There are currently no performance standards under 310 CMR 10.00 *et seq.* ("Wetlands Regulations") for work that occurs within LSCSF. LSCSF at the Master Plan Site is of little, if any, significance to the protection of wildlife and wildlife habitat given the historic uses and development activities at the Master Plan Site.

Coastal Bank

The Reserved Channel abuts portions of the Master Plan Site and is contained by a stone revetment that is considered a Coastal Engineer Structure ("CES"). Fronting Blocks I and J, the CES is supplemented by a vertical concrete wall atop the revetment. Block K is contained by a vertical granite block seawall. With the Master Plan Site, approximately 2,250 feet of the landform behind the CES is categorized as Coastal Bank. Because the Coastal Bank is fronted by CES, it does not function as a sediment source for coastal beaches, coastal dunes, and barrier beaches. The Coastal Bank is an armored landform that is both stable and non-eroding, and functions chiefly to prevent storm damage and provide flood control as a vertical buffer to storm waters. As shown on Figure 6-1, approximately 212,850 sf (4.9 acres) of the 100-foot buffer zone of this resource area also extends across portions of the Master Plan Site.

Because the Coastal Bank does not supply sediment to coastal beaches, coastal dunes, and barrier beaches the provisions of 310 CMR 10.30(3)-(5) do not apply to the Master Plan Project. The Coastal Bank, however, is significant to storm damage prevention and flood control because it is a vertical buffer to storm waters. Accordingly, the provisions of 310 CMR 10.30(6)-(8) are applicable to the proposed work.

310 CMR 10.30(6):

"Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank."

As noted in 310 CMR 10.30(1), as a vertical buffer to storm waters, the bank's stability, specifically its resistance to erosion caused by wind and rain runoff, is critical to the protection of that interest (i.e., storm damage prevention or flood control). In conformance with 310 CMR 10.30(6), the

placement of fill for elevating the Master Plan Site and other activities along the Coastal Bank and within its buffer zone will be designed and engineered to ensure that those activities will have no adverse effect on the stability of the Coastal Bank.

310 CMR 10.30(7):

"Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches."

Because the Coastal Bank does not supply sediment to coastal beaches, coastal dunes, and barrier beaches, elevating the existing CES is permitted under 310 CMR 10.30(7).

310 CMR 10.30(8):

"Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37."

In conformance with 310 CMR 10.30(8), the proposed work will not have an adverse effect on specified habitat sites of rare vertebrate or invertebrate species.

Land Subject to Tidal Action

Land Subject to Tidal Action ("LSTA") is defined in 310 CMR 10.04 as "… *land subject to the periodic rise and fall of a coastal water body, including spring tides."* At the Master Plan Site, LSTA extends along the CES from approximate elevation 1.29 feet BDB (-5.17 feet NAVD88) to approximately 11.23 feet BCB (+4.77 feet NAVD 88).[1] At this time no work is proposed within LSTA, although the Proponent is evaluating the feasibility of "touch-and-go" facilities for water shuttles and/or publicly accessible dock facilities for small human-powered craft (e.g., kayaks). Such facilities could be constructed within LSTA.

Land Under the Ocean

Land Under the Ocean ("LUO") is defined in the Wetlands Regulations at 310 CMR 10.25(2) as *"… land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries."*

At the Master Plan Site, LUO includes the submerged lands of Boston Harbor within the Reserved Channel. At this time no work is proposed within LUO, although as part of the Master Plan Project, the Proponent is evaluating the feasibility of "touch-and-go" facilities for water shuttles and/or

[1] Per NOAA Tide Station 8443970, Boston, MA.

publicly accessible dock facilities for small human-powered craft (e.g., kayaks). Such facilities could be constructed within LUO.

6.3 Stormwater Management

6.3.1 Stormwater Management System

The Master Plan Project is subject to the MassDEP Stormwater Management Standards regulated under the WPA Regulations and requires BWSC Site Plan Review and approval. BWSC requires that 1.25 inches of stormwater runoff from proposed impervious area be retained on-site for projects at or above 100,000 sf.

The following section describes the existing storm drain infrastructure around the Master Plan Site and describes how this infrastructure will service the Master Plan Project in the future and how the Master Plan Project will be designed to comply with the stormwater standards to the maximum extent practicable.

6.3.2 Existing Drainage Conditions

Master Plan Site stormwater controls appear very limited and there is no evidence of infiltration or treatment systems on the Master Plan Site. Roof stormwater spills out at grade through downspouts for most of the existing buildings. It was observed that 653 Summer Street (former Boston Athletic Club) has a single downspout near the entrance that takes roof stormwater below grade. Stormwater runoff appears to be collected on-site and conveyed primarily to combined sewer/drainage infrastructure that ultimately discharges into Reserved Channel adjacent to the Master Plan Site.

The approximate 175-acre watershed in South Boston that includes the Master Plan Site is generally bounded to the east by Pappas Way/Reserved Channel, to the north by Summer Street, to the west by B Street, and to the south by West Broadway. The watershed, including the Master Plan Site, is served by various large culverts and other drainage mains that outfall to the Reserved Channel.

There are numerous privately-owned drains within the limits of the Master Plan Site that serve the existing active facilities. A 36-inch drainage main flows south within E Street to a 72-inch by 48-inch drainage main within West First Street. The 72-inch by 48-inch drainage main flows into a 72-inch combined sewer overflow (“CSO”) and eventually to the 84-inch CSO within Pappas Way to CSO076 into Reserved Channel. Pappas Way has a 36-inch/24-inch/18-inch drainage main that collects stormwater from various catch basins within the roadway and on the Master Plan Site and outfalls through a 60-inch box culvert into Reserved Channel. On the southern end of Pappas Way, various catch basins within the roadway connect directly into the 84-inch CSO. On the northern end of Pappas Way, a 30-inch storm drainage main crosses the private road and discharges into Reserved Channel at Storm Drain Outfall (SDO010). Summer Street has 18-inch and 60-inch storm drainage mains which ultimately discharge into Reserved Channel at SDO050.

6.3.3 Proposed Stormwater System

6.3.3.1 Stormwater Design Considerations

BWSC will require infiltration of 1.25 inches of stormwater runoff from all impervious area of a site for developments over 100,000 sf. This requirement can be met with typical infiltration chambers, Low Impact Development ("LID") or green infrastructure techniques, and is typically required per building/building block phase unless the development proposes to address all future stormwater mitigation under an initial phase of work.

Note: Green roofs are not a typical source of impervious area reduction for BWSC, but they do provide benefits to reduce heat island effect.

The Master Plan Site has a relatively low elevation ranging from approximate elevation 16 to 18 feet BCB (9.5 feet to 10.5 feet NAVD88). The Federal Emergency Management Agency ("FEMA") identifies properties at risk of flooding for the purpose of making flood insurance available through the National Flood Insurance Program ("NFIP"). The Master Plan Site contains the following FEMA- designated Special Flood Hazard Areas ("SFHA") on FIRM panels 25025C0081J and 25025C0083J, effective March 16, 2016:

- Zone AE: approximately 18.5 feet BCB (12 feet NAVD88) [1% annual chance floodplain]
- Zone X [0.2% annual chance floodplain]

6.3.3.2 Flood-Related Regulations, Policies and Plans

The following is a description of the regulations, policies and plans related to current and future flood risk at the Master Plan Site that would need to be considered throughout the development process. Current flood risk is contemplated by the Massachusetts Building Code. To mitigate future flood risk, both Massport and the City have established policies for new development and redevelopment in areas that are at risk of future flooding.

Massachusetts Building Code

The Massachusetts State Building Code (the "Building Code") is the primary means of protecting buildings from flooding. The engineering standard referenced in the Building Code is "ASCE/SEI 24-14- Flood Resistant Design & Construction" ("ASCE 24"). This standard provides minimum requirements for flood-resistant design and construction of structures that are subject to building code requirements and that are located in flood hazard areas. In Boston these are defined as the SFHAs on the currently effective FIRMs. In A zones, structures must have the lowest floor (the actual floor surface of the lowest enclosed area, including basements) elevated to or above the BFE indicated on the FIRM, which is approximately 18.5 feet BCB (12 feet NAVD88) on a portion of the Master Plan Site. Enclosed areas used solely for parking, building access, or storage are permitted below the BFE if they are wet floodproofed with compliant foundation openings. For

nonresidential buildings and nonresidential portions of mixed-use buildings, the lowest floor is allowed below the BFE if the structure meets the floodproofing requirements.

The Master Plan Project's residential buildings are proposed to have a finished floor elevation ("FFE") of 24.3 feet BCB (17.8 feet NAVD88) and nonresidential buildings are proposed to have a FFE of 23.3 feet BCB (16.8 feet NAVD88); these are both above the elevation required by the Building Code. Below-grade portions of the buildings are proposed to be floodproofed, which may include wet or dry floodproofing.

Massport Floodproofing Design Guide

New construction on Massport's properties is subject to the Massport Floodproofing Design Guide, which aims to make buildings and operations more resilient to anticipated flooding threats. The Floodproofing Design Guide is intended to be used by Massport staff, tenants, third-party developers, design professionals and contractors during planning, design and construction on Massport property.

Projects subject to the standards include new structures and additions; substantial repairs or improvements; and retrofits with the explicit objective to make structures resilient to flooding. The Floodproofing Design Guide outlines the requirements for the floodproofing design process, including the design flood elevations ("DFE"), parameters, calculations, narratives, drawings, and plans that must be submitted to Massport at various design stages. The DFE in the design guide must be substituted for the BFE indicated in the Building Code.

The Master Plan Project's buildings will comply with the Floodproofing Design Guide by having a DFE that is at or above the requirement and floodproofing that is compliant with the Floodproofing Design Guide.

Boston Planning Department Costal Flood Resilience Guidelines & Zoning Overlay District (Article 25A)

The Planning Department has been working to advance the climate resilience objectives of the Climate Ready Boston plan. One of the primary goals of the Climate Ready Plan is to promote adapted buildings that will function to limit damage and displacement related to the impacts of a changing climate.

Among the most significant climate risks facing Boston is the danger to people and property from coastal flooding, which is predicted to increase over time with rising sea levels. To address this risk, a set of design guidelines and a zoning overlay district to promote coastal flood resilience in vulnerable areas of the City were developed.

The Coastal Flood Resilience Design Guidelines were developed for new construction and building retrofits. The Guidelines provide best practices for flood resistant design and are intended to be administered by staff for the review of projects within a proposed Flood Resilience Zoning Overlay District.

The Article 25A Coastal Flood Resilience Overlay District ("CFROD") works to protect persons and structures from the adverse effects of sea level rise and storm surge associated with climate change. The CFROD and zoning map relate to areas of the City of Boston anticipated to be flooded with a 1% chance storm event in 2070 with 40-inches of sea level rise, formalize the implementation of the Design Guidelines, and establish sea level rise design flood elevations for new construction and retrofits. The CFROD defines the purpose and scope of the overlay, the proposed use and dimensional regulations that will apply to projects within it and procedures for review of projects subject to Article 80 of the Zoning Code. BPDA's appended guidance document states that projects within either the FEMA SFHA or the BPDA Sea Level Rise – Flood Hazard Area ("SLR-FHA") should use its recommended SLR-DFE as the minimum performance target for assessing sea level rise impacts and for reducing or eliminating flood risk, potential damage, and related adverse impacts.

Only the Fee Simple parcels are subject to the CFROD requirements. However, as proposed, the Master Plan Project's buildings will exceed the current CFROD requirements.

6.3.3.3 Proposed Stormwater Management System

Master Plan Project

Stormwater management will be accommodated for each individual block through individual designs. Infiltration and detention infrastructure will be located through the landscape design, and/or beneath designated open spaces. If additional detention is required, stormwater infrastructure may be incorporated into buildings or below buildings. It is anticipated that the stormwater infrastructure for Blocks D, F, I, and J will connect to a reconstructed drainage main in Pappas Way as part of the effort to elevate Pappas Way for resiliency. Storm drain infrastructure will likely be extended from Pappas Way within Roads 1, 2, and 3 to the future F Street Extension to provide for Blocks E, G, and H. It is anticipated that the stormwater infrastructure for Block K will connect to the drainage main in Summer Street or Pappas Way. It is anticipated that the stormwater infrastructure for the buildings within Blocks E, G and H fronting on F Street Extension will connect to drainage infrastructure within F Street extension ultimately draining through infrastructure installed as part of Phase 2 discharging to Reserved Channel. Portions of Blocks E, G, and H fronting on E Street will likely drain to existing storm drainage infrastructure in E Street.

Given the reduction in impervious area and inclusion of stormwater retention and infiltration systems that which do not currently exist on the Master Plan Site, it is anticipated that the amount of stormwater runoff from the Master Plan Site will be reduced from the existing condition. As development blocks move into the design phase, the surrounding drainage infrastructure will be evaluated to ensure capacity exists to accommodate the proposed development, and if necessary, interim measures will be implemented to accommodate the stormwater runoff from that particular block.

As identified for Phase 1 and as development blocks move into the design phase, opportunities for meeting the BWSC requirements for retention/recharge will be evaluated and will be coordinated with a LSP to identify the appropriate stormwater management strategies for that block given the future site layout and any environmental constraints. Stormwater will be infiltrated utilizing tanks, chambers, and/or recharge wells where subsurface conditions allow for such infiltration.

The stormwater management system will be designed to appropriately manage future precipitation events, currently anticipated to be 10.9 inches in 24 hours (2070 100-year storm event). Therefore, the stormwater management system will also be able to manage the 2-, 10-, and 25-year storm events which would have lower precipitation amounts.

Phase 1 Project

Stormwater management will be accommodated for each individual block through individual designs. Infiltration and detention infrastructure will be located through the landscape design, and/or beneath designated open spaces. If additional detention is required, stormwater infrastructure may be incorporated into buildings or below buildings. Blocks A and B stormwater infrastructure is anticipated to connect to the drainage main in West First Street. Block C stormwater infrastructure is anticipated to connect to the drainage main in Pappas Way. The 48-inch CSO that flows from the F Street and West First Street intersection north through the Master Plan Site will be relocated and replaced within the F Street extension right-of way. It is not anticipated that additional stormwater infrastructure will need to be built during Phase 1 to accommodate future phases. Based on preliminary evaluation, and because the Phase 1 Project will result in a reduction in impervious area and will be required to meet the BWSC recharge requirement, the existing drainage system has the capacity to support the Phase 1 Project.

The total Phase 1 Site area is approximately 12.86 acres. Of the total Phase 1 Site area, approximately 9.89 acres will be impervious in the future. Meeting the BWSC requirement that 1.25 inches of stormwater runoff from proposed impervious area be retained on-site results in the need for retention/recharge of approximately 44,275 cubic feet of storage. The required storage will likely be provided in three separate systems serving Blocks A, B and C.

As identified in Chapter 9, there are multiple known Release Tracking Numbers associated with releases of oil and hazardous materials which have been reported to MassDEP, and which are located within the Master Plan Site, including the Phase 1 Site. Therefore, stormwater will be stored and infiltrated utilizing tanks, chambers, and/or recharge wells where subsurface conditions allow for such infiltration. As the design progresses, stormwater management approaches will be closely coordinated with a LSP to review proposed locations, volumes, and frequency of infiltration to confirm that the proposed stormwater systems will not exacerbate existing groundwater conditions. In certain areas of known groundwater contamination or significant soil contamination, infiltration will not be conducted to avoid potential contaminant migration and exacerbating conditions, and alternate methods of managing stormwater will be employed as permitted by local agencies.

6.3.4 Stormwater Management Standards

The Master Plan Project and Phase 1 Project will be compliant with all required stormwater management regulations, including MassDEP, BWSC, and the City. The Proponent will meet with all applicable organizations for each phase of the Master Plan Project to ensure compliance.

The Boston Harbor watershed has a Total Maximum Daily Load ("TMDL") for pathogens. Stormwater infiltration provides treatment to reduce pathogens by up to 90%.

The following outlines how the Master Plan Project and Phase 1 Project are anticipated to comply with the MassDEP Stormwater Standards.

Standard #1: No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Compliance: The design is intended to comply with this Standard through appropriate stormwater measures. No new untreated stormwater is expected to be directly discharged to, nor is erosion expected to be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Phase 1 Project.

Both the Master Plan Project and Phase 1 Project are expected to incorporate subsurface infiltration or equivalent systems, stormwater treatment devices, and deep-sump, hooded catch basins as potential stormwater control measures. It is the Proponent's intention to treat runoff through the options listed above or through mechanical treatment units prior to discharge into the public storm system.

Standard #2: Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Compliance: Both the Master Plan Project sand Phase 1 Project are expected to be designed to comply with this Standard. The Master Plan Project and Phase 1 Project are also required to comply with this stormwater standard by the BWSC. On-site infiltration systems or equivalent systems are expected to be designed to achieve these results for the Master Plan Project and Phase 1 Project.

Standard #3: Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.

Compliance: The Master Plan Project and Phase 1 Project are currently expected to incorporate the required subsurface infiltration systems to promote groundwater recharge to the maximum extent practicable. Additional geotechnical explorations will be conducted to aid this design.

Standard #4: For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of TSS. It is presumed that this standard is met when: Suitable nonstructural practices for source control and pollution prevention are implemented; Stormwater treatment control devices known as Best Management Practices ("BMPs") are sized to capture the prescribed runoff volume; and Stormwater management BMPs are maintained as designed.

Compliance: The proposed design is expected to include BMPs intended to remove 80% of TSS as required by this Standard, as well as by the BWSC site design requirements. This may be accomplished through BMPs such as deep-sump, hooded catch basins, proprietary treatment devices, and infiltration or equivalent systems.

Standard #5: For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If, through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Compliance: The Master Plan Project and Phase 1 Project do not include land uses associated with higher potential pollutant loads.

Standard #6: Stormwater discharge to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters ("ORWs"), shellfish beds, swimming beaches, cold-water fisheries and recharge areas for public water supplies.

Compliance: The Master Plan Project and Phase 1 Project will not discharge to a critical area.

Standard #7: A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Compliance: The Master Plan Project and Phase 1 Project are considered redevelopment projects. The Master Plan Project and Phase 1 Project will comply with the Stormwater Management Standards to the extent practicable and is anticipated to improve upon existing conditions.

Standard #8: Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

Compliance: Sedimentation and erosion controls are expected to be incorporated as part of the design of the Master Plan Project and Phase 1 Project and will be employed during construction. Erosion and sedimentation control plans will be submitted to the BWSC and the contractor will be required to implement the measures as part of the BWSC general service application process.

Standard 9: A Long-Term Operation and Maintenance ("O&M") Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Compliance: An O&M Plan will be developed during the design process of the each phase of the Master Plan Project.

Standard 10: All illicit discharges to the stormwater management system are prohibited.

Compliance: Currently there are no known illicit discharges. All proposed discharges will be reviewed by the BWSC to ensure consistency with this standard.

6.3.5 Low Impact Design

The Proponent will evaluate the potential for integrating green infrastructure elements with the goal of retaining a greater volume of stormwater runoff and increasing infiltration capacity for the Master Plan Project. The Master Plan Project is working to maximize the pervious cover provided on the Master Plan Site to reduce peak runoff rates in a low-impact fashion. It is anticipated that the Landscaped Corridors, including in Phase 1 (and shown in Appendix A) and proposed throughout the Master Plan Project, will include rain gardens to collect runoff. Pervious pavement on some portions of the Master Plan Site will be considered, but a specific layout has not yet been determined, and this may not be included as design advances.

6.3.6 Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan ("SWPPP") will be submitted in conjunction with the Site Plan Review and General Service Application to the BWSC. The plan will:

- Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater, or construction debris to the Commission's drainage system when construction is underway.

- Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or storm water, and the location of major control structures or treatment structures to be utilized during the construction.

- Specifically identify how the development will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.

Chapter 7

Transportation

7.0 TRANSPORTATION

7.1 Executive Summary

The transportation analysis, which follows Massachusetts Department of Transportation (MassDOT) "Transportation Impact Assessment Guidelines" standards and has been coordinated with MassDOT and the City of Boston, focuses on how construction of the Phase 1 Project will be integrated with the surrounding neighborhood, based on the findings of an Existing Conditions analysis and given anticipated travel patterns to and from the Phase 1 Site. The Master Plan Project is evaluated at a more qualitative level, with the design intention of the Master Plan Site discussed in relation to the long-term evolution of the street network which the Phase 1 Site commences.

The Phase 1 Project and Master Plan Project will fill the existing void in the transportation and land use network which presently disconnects the South Boston neighborhood with the South Boston Waterfront between West First Street and Summer Street. The Phase 1 Site will initiate the evolution of the transportation system within the Master Plan Site. The Master Plan Project will broaden the existing east/west roadway network with new streets, extend F Street with accommodations for transit between West First Street and Summer Street (advanced in conjunction with Massport), and deemphasize Pappas Way as a vehicular corridor with the eventual closure of the southern and northern portions of Pappas Way and redirection of vehicles toward F Street.

The Phase 1 Project and the Master Plan Project will:

- Create a hierarchy of street types based on uses and characteristics which connect into the existing City road network. New streets will be constructed or reconstructed to prioritize pedestrian, bicycling, and buses.

- Provide more than 12 acres of new rights-of-way (sidewalks and roadways) accessible to the public.

- Invest in an inviting pedestrian network (such as through traffic calming measures including curb extensions at crosswalks and intersections to improve pedestrian safety), improve existing sidewalks, and create new and expanded public spaces including along the Reserved Channel for an improved experience for pedestrians and bicyclists.

- Comply with the City of Boston's electric vehicle ("EV") policy and Bike Parking Guidelines, as well as the Massport Sustainability Design Guidelines related to EV chargers and LEED bicycle storage requires, as applicable.

- Offer a robust transportation demand management ("TDM") program to reduce dependence on vehicle travel, minimize single occupancy vehicle ("SOV") drive trips, and enhance mobility via sustainable transportation modes.

- Establish precedent monitoring programs to guide refinement of the Master Plan Project with empirical Phase 1 Project operations, including monitoring travel behavior among tenants.

- Respect neighboring areas and maintain access without disruption as redevelopment occurs.

- Provide approximately 4,300 linear feet of new bicycle infrastructure.

Chapter 13 includes a list of proposed mitigation commitments, and Appendix A provides additional design-related considerations for the proposed transportation improvements.

The Phase 1 Site's frontage with the South Boston neighborhood along West First Street and Pappas Way will be significantly improved by the Phase 1 Project. A dedicated, two-way bicycle path, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, are proposed along the northern frontage of West First Street. The internal street network will be provided with street trees and planters, dedicated pedestrian space, instances of bi-directional bicycle lanes, and improved sidewalks.

In the Phase 1 Condition, a reconfiguration of the East First Street/West First Street/Pappas Way intersection will improve vehicular and multimodal safety through improved sight distances from the Pappas Way approach. Pappas Way and East First Street will meet at more of a 90-degree angle in order to reduce the curb-to-curb footprint of the intersection and reduce vehicle speeds. The improvement concept is consistent with the ideals cited in the South Boston Transportation Action Plan, and will continue to be refined in coordination with Massport and the City.

In the Master Plan Project full-build condition, Pappas Way is proposed to be discontinued between East First Street/West First Street and the proposed Road 1, creating a new open space. Closure south of Summer Street will transform Pappas Way into a more recreational travel corridor that prioritizes pedestrian and bicycles along with the waterfront open space along the Reserved Channel.

Land use and phased access have been carefully considered for the Master Plan Project. To support future development, the Phase 1 Project will create approximately 4.2 acres of new site access (new roadways open to the public and public realm improvements to support walkability) which will grow to over 12 acres through buildout of the complete Master Plan. Enhancing the utility of these roadways, within them approximately 1,500 linear feet of new bicycle infrastructure will be created by the Phase 1 Project, reaching approximately 4,300 linear feet through completion of the Master Plan.

The Phase 1 Project and the Master Plan Project are aligned with the City's multimodal travel ambitions, as expressed in local and citywide plans, and fits within the broader South Boston neighborhood and South Boston Waterfront travel network including facilitation of freight travel. The Phase 1 Site's roadway network is oriented to encourage vehicular access to and from the

north via Summer Street, D Street, and Cypher Street, limiting the impacts of increased vehicle trips on the South Boston roadway network. The roadway network is designed to discourage truck travel through the Phase 1 Site towards Conley Container Terminal, supporting the design intention of E Street to carry freight trips and reducing truck impacts on local streets such as East First Street.

7.2 Study Methodology

The transportation analysis follows the Massachusetts Department of Transportation's "Transportation Impact Assessment Guidelines" and uses standard methodologies, including the Institute of Transportation Engineers' ("ITE") Trip Generation Manual and Parking Generation Manual for the estimation and forecasting of trips and parking associated with the Phase 1 Project; and the Transportation Research Board's Highway Capacity Manual ("HCM"), Seventh Edition, for the estimation of vehicular delays and queues at intersections. The transportation system within the study area was reviewed according to standard engineering practices to document and understand the presence and use of vehicular travel lanes, transit stations, bus stops, sidewalks, crosswalks, and bicycle facilities. Data standards specific to the City of Boston were used where possible, with MassDOT's understanding.

The study includes a survey and assessment of multimodal transportation conditions within the study area, including descriptions and analysis of the operations and modifications, for vehicles, pedestrians, bicyclists, transit, and the overall transportation environment.

The study includes an operations analysis of current and future transportation conditions. Three scenarios were assessed, including future scenarios with a seven-year time horizon: Existing Condition (current volumes), 2033 No-Build Condition (future volumes with vehicles from nearby approved projects but not Phase 1 Project-generated trips), and 2033 Phase 1 Build Condition (No-Build volumes with Phase 1 Project-generated trips). Each condition was evaluated in the a.m. peak hour and p.m. peak hour.

Synchro transportation analysis software was used to analyze the performance of the roadway network as agreed to with the BTD and MassDOT and according to the HCM Seventh Edition. This software provides a reasonable estimation of operating characteristics which are easily comparable between different scenarios.

Transit capacity analyses for the Existing Condition, No-Build Condition, and Phase 1 Build Condition were also conducted. Transit, pedestrian, and bicycle conditions were queried from a site visit, review of nearby development projects, review of ongoing planning and design efforts in the local area, and consistent with BTD and MassDOT methodologies.

The Master Plan (Full Build) Condition is described in a more qualitative manner, without associated capacity analyses. As required under the Special Review Procedure, future Project Commencement Notices will include "a transportation study consistent with, or, if a permit from MassDOT is required, an analysis prepared in accordance with MassDOT/EEA Transportation

Impact Assessment Guidelines." Therefore, the capacity analyses will be carried out at a future date when advancement of the Master Plan program is initiated.

MassDOT was consulted on December 1, 2025 to review an outline of content for this Chapter and a methodology for these analyses. Representatives from BTD and the Planning Department were consulted on December 19, 2025 regarding the analyses in this Chapter.

7.3 Existing Conditions

The Phase 1 Site is located north of West First Street, along E Street, Pappas Way and the Reserved Channel in South Boston. The Phase 1 Site has large blocks, with over 1,000 feet of frontage on West First Street, approximately 330 feet on E Street, noncontiguous frontage totaling approximately 800 feet on Pappas Way, and a privately-owned street open to public travel (Pappas Way) that connects the South Boston Waterfront district to the traditional South Boston neighborhood. South of the Phase 1 Site, the traditional South Boston neighborhood is served by a grid street network, with pedestrian and bicycle facilities, as well as regular bus service along Broadway. North of the Phase 1 Site, the South Boston Waterfront district is served by the MBTA Route 7 (along Summer Street) and the Silver Line and private shuttles, and is characterized by a mix of residential and commercial uses.

Conversely, the Phase 1 Project's immediate vicinity is limited in terms of multimodal accommodations. The street grid from the traditional South Boston neighborhood abruptly stops at West First Street. Transit serving the traditional South Boston neighborhood and South Boston Waterfront generally operates on corridors that do not directly front the Phase 1 Site, which can increase walking distances and travel times for some users. Transit users on the MBTA Silver Line, local bus routes, or private shuttles need to navigate narrow sidewalks and wide crosswalks.

There is a shared-use path along the Reserved Channel, but there is no connection to the path from bicycle facilities elsewhere in South Boston or the South Boston Waterfront. The limited multimodal accommodations are further impacted by the surrounding wide roadways and heavy freight activity destined for the Raymond L. Flynn Marine Industrial Park ("RLFMP") and the Conley Container Terminal. Without dedicated space for pedestrians, cyclists, and transit riders, the roadways comprising the Phase 1 Site are presently unwelcoming.

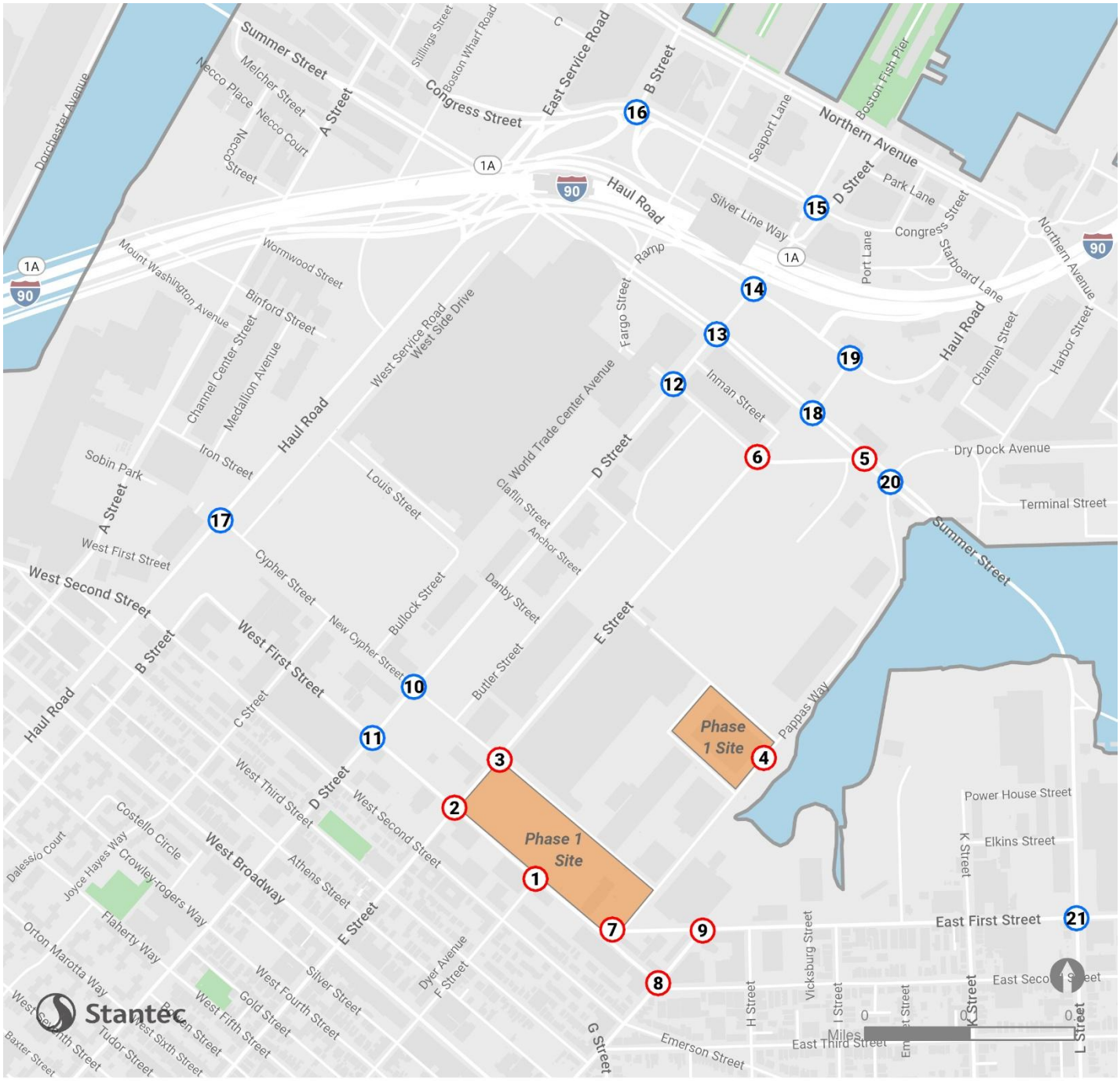
This Section inventories the existing roadway and transportation networks to establish a base framework for the Phase 1 Project and the Master Plan Project, including a profile of the roadway and freight networks, area parking, pedestrian accommodations, bicycle facilities and bikeshare docking stations, and transit operations.

7.3.1 Study Area

The Phase 1 and Master Plan study area includes 21 intersections, shown in Figure 7-1:

1. West First Street at F Street (unsignalized)
2. West First Street at E Street (unsignalized)
3. New Cypher Street at E Street (unsignalized)
4. Pappas Way at Site Entrance C (unsignalized)
5. Fargo Street at Summer Street (unsignalized)
6. Fargo Street at E Street (unsignalized)
7. East/West First Street at Pappas Way (unsignalized)
8. West First Street/East Second Street at Dorchester Street (unsignalized)
9. East First Street at Dorchester Street (unsignalized)
10. Cypher Street/New Cypher Street at D Street (signalized)
11. West First Street at D Street (signalized)
12. Fargo Street at D Street (signalized)
13. Summer Street at D Street (signalized)
14. D Street at I-90 On-Ramp (signalized)
15. Congress Street at D Street (signalized)
16. Congress Street at B Street/I-93 On-Ramp/I-90 Off-Ramp (signalized)
17. Cypher Street/Richards Street at South Boston Bypass (signalized)
18. Summer Street at Pumphouse Road (signalized)
19. Haul Road at Pumphouse Road (signalized)
20. Summer Street at Pappas Way/Drydock Avenue (signalized)
21. Summer Street/L Street at East First Street (signalized)

It should be noted that the Certificate requested the analysis of the following intersections: Congress Street/Port Lane, Congress Street/Starboard Lane, Congress Street/Northern Avenue, Haul Road/Northern Avenue, and Northern Avenue/D Street. The Master Plan Project related vehicle trips are not expected to materially affect these intersections, and therefore they have not been included in this transportation analysis. The exclusion of these intersections was discussed with, and confirmed by, MassDOT, City, and the MEPA office.



Study Intersections

- Unsignalized
- Signalized

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-1
Study Intersections

7.3.2 Roadway Geometry

The roadway network immediately abutting the Phase 1 Site retains much of its industrial character and has not been updated in conjunction with other parts of South Boston or the South Boston Waterfront at large. Given the orientation of the streets, there is limited connectivity and indirect routing of existing streets with the Phase 1 Site itself, acting as an inaccessible area within a dense urban environment. The perimeter streets around the Phase 1 Site lack strong integration with the surrounding area.

7.3.3 Existing Roadway Conditions

The details of perimeter and other important streets that frame the Phase 1 Site are as follows:

West First Street

West First Street is a two-lane, 33-foot-wide bituminous concrete, City-owned local mainline roadway. There are attached sidewalks on both sides of the street with limited landscaping; extended segments of curb cuts, including to serve trucks, further impact the walking environment. On-street parking is provided on both sides of the street.

E Street

E Street is a two-lane, 36-foot-wide bituminous concrete, collector mainline roadway. The roadway is owned by Massport but open to public travel. There is an attached sidewalk for the full length of the street on the east side of the street, and a partial attached sidewalk on a segment of the west side of the street.

E Street is a significant commercial artery between West First Street and Summer Street (including Fargo Street between E Street and Summer Street). On the west side of the street, there is a discontinuous sidewalk, as a large section of the street face consists of loading spaces that abut loading docks. There is a painted/striped “sidewalk” that essentially has no value when loading operations are occurring on-site as the larger trucks encroach within that space. Much of the right-of-way is needed for truck maneuvering. On-street parking is provided on the west side of the street outside of the loading areas; trucks are discouraged from stopping in parking areas.

No parking is allowed on the east side of the street, but it is often used for truck queuing to the loading areas.

The recently completed Cypher Street Extension between D Street and E Street (referenced below), included repaving and restriping of E Street and Fargo Street, redesign of the Fargo Street intersection with Summer Street, and adding a designated left-turn and designated right-turn (previously a shared left/right-turn lane) at the Fargo Street/Summer Street intersection.

Pappas Way

Pappas Way is a two-lane, Massport street open to public travel with variable sidewalk connections. There is a sidewalk on the east side that is largely attached until it enters the Reserved Channel and abutting open space. New attached sidewalks have been integrated on its west side but are discontinuous. Intermittent loading and parking operations impact the use and function of Pappas Way, with much of it part of longstanding lease commitments.

Summer Street

Summer Street is a four-lane, partially undivided, approximately 65-foot-wide bituminous concrete, City-owned urban principal arterial mainline roadway. There are attached sidewalks, existing on-street bike lanes, and shared lane markings which have been implemented east of D Street and separated facilities which have been integrated west of D Street. MBTA has transit operations on this street, and on-street parking is available west of D Street. Although not abutting the Phase 1 Site, it is a significant east/west corridor in the study area which comprises the northern bounds of the Master Plan Site.

Cypher Street

Cypher Street is another key roadway adjacent to the Phase 1 Site. Recently, MassDOT and Massport completed the Cypher Street Extension/E Street Connection project, which improved Cypher Street and extended it from D Street to E Street, enabling a designated freight and truck corridor through the area south of Summer Street using the South Boston Bypass Road, Cypher Street, and E Street.

Internal Roadway Network

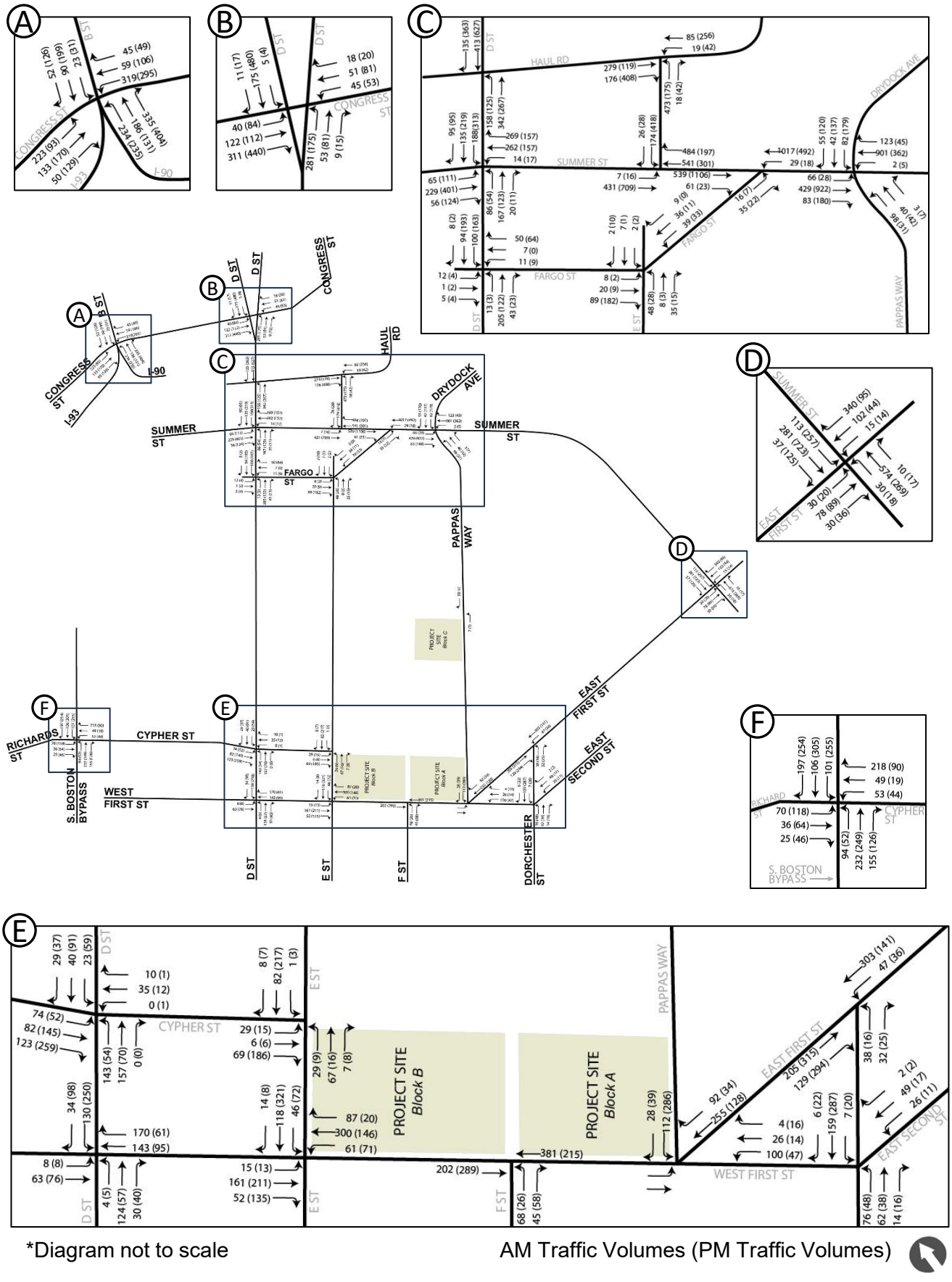
The existing internal roadway network on the Phase 1 Site primarily accommodates heavy vehicles serving logistics operations. Internal connecting passages are not designated or labelled as streets. Parking, including for trucks, and truck access have historically been a primary function of the Phase 1 Site.

Study Area Intersection Conditions

Descriptions of study area intersections can be found in Appendix E.

7.3.4 Traffic Volumes

Turning movement counts ("TMCs") were collected for the study area intersections on Tuesday, December 16, 2025, between 7:00 a.m. and 10:00 a.m. and between 4:00 p.m. and 7:00 p.m. Across the study area intersections, the peak hours were established as 7:45 a.m. to 8:45 a.m. and 5:15 p.m. to 6:15 p.m. Figure 7-2 shows existing peak hour traffic volumes at the study area intersections. Appendix E provides the data collected.



Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-2

Existing Peak Hour Traffic Volumes at Study Area Intersections

7.3.5 Curb Usage and Regulations

There is significant on-street parking within the surrounding area, particularly to the south of the Phase 1 Site. On-street parking is present on West First Street and E Street directly adjacent to the Phase 1 Site. Most of the on-street parking very close to the Phase 1 Site is currently unregulated. Slightly further from the Phase 1 Site, on West Second and West Third streets, parking is reserved for South Boston resident permit holders, with some spots available for two-hour visitor parking as well. Figure 7-3 shows site environ curb regulations.

7.3.6 Off-Street Parking

Existing off-street, surface parking associated with the Phase 1 Site is spread across three properties, as detailed in Table 7-1.

Table 7-1 Existing Parking On Phase 1 Site

Existing Site	Tenant	Current Parking Provision and Management
647B Summer Street	Former UPS (vacated December 2025)	Formerly fleet parking for large trucks with limited parking for passenger vehicles
370 West First Street	Yankee Bus	Bus storage with limited parking for passenger vehicles
300 West First Street	Verizon and RJV Construction	Fleet parking for Verizon vehicles and construction storage with limited vehicles on-site for RJV Construction

Additional off-street, surface parking, both public and private, is available within a 600-foot radius surrounding the Phase 1 Site. Within this surrounding area, there is one off-street parking lot which allows for public parking. Characteristics of the Lot on D Street are documented in Table 7-2.

Table 7-2 Existing Off-Street Public Parking in the Phase 1 Site Vicinity

Parking Lot/Address	Operator	Capacity	Use	Daily Rate	Walking Distance to Phase 1 Site
Lot on D Street (377 D Street)	Propark	201 spaces	General Public	$42	1,000 feet

Several other privately-owned parking lots are available within one-half mile of the Phase 1 Site, as documented in Appendix E.



Private Parking
- Employee Parking
- Leased Parking
- Resident Parking

Public Parking
- 2hr Visitor Parking, Resident Permit Exempt
- Unregulated
- Metered Parking
- 30-Min Parking

No Parking/ Loading
- Loading Zone
- Valet
- No Parking

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-3
Study Environs Curb Regulations

7.3.7 Bicycle Facilities

Bicycle accommodations in the vicinity of the Phase 1 Site vary in condition. E Street, West First Street, and Pappas Way abutting the Phase 1 Site do not feature dedicated on-street bicycle accommodations. Outside of this immediate area, the bicycle network is segmented and inconsistent with significant gaps in connectivity. A shared-use path is present along Pappas Way (adjacent to the Reserved Channel) between the Phase 1 Site and Summer Street to the northeast. East/west bike connections proximate to the Phase 1 Site are present along Summer Street, where existing on-street bike lanes and shared lane markings have been implemented east of D Street and separated facilities have been integrated west of D Street, and on Cypher Street between the South Boston Bypass Road and D Street as a two-way separated bicycle facility along the south side of the roadway. Bicycle use along the E Street corridor is discouraged because of the industrial nature of the roadway.

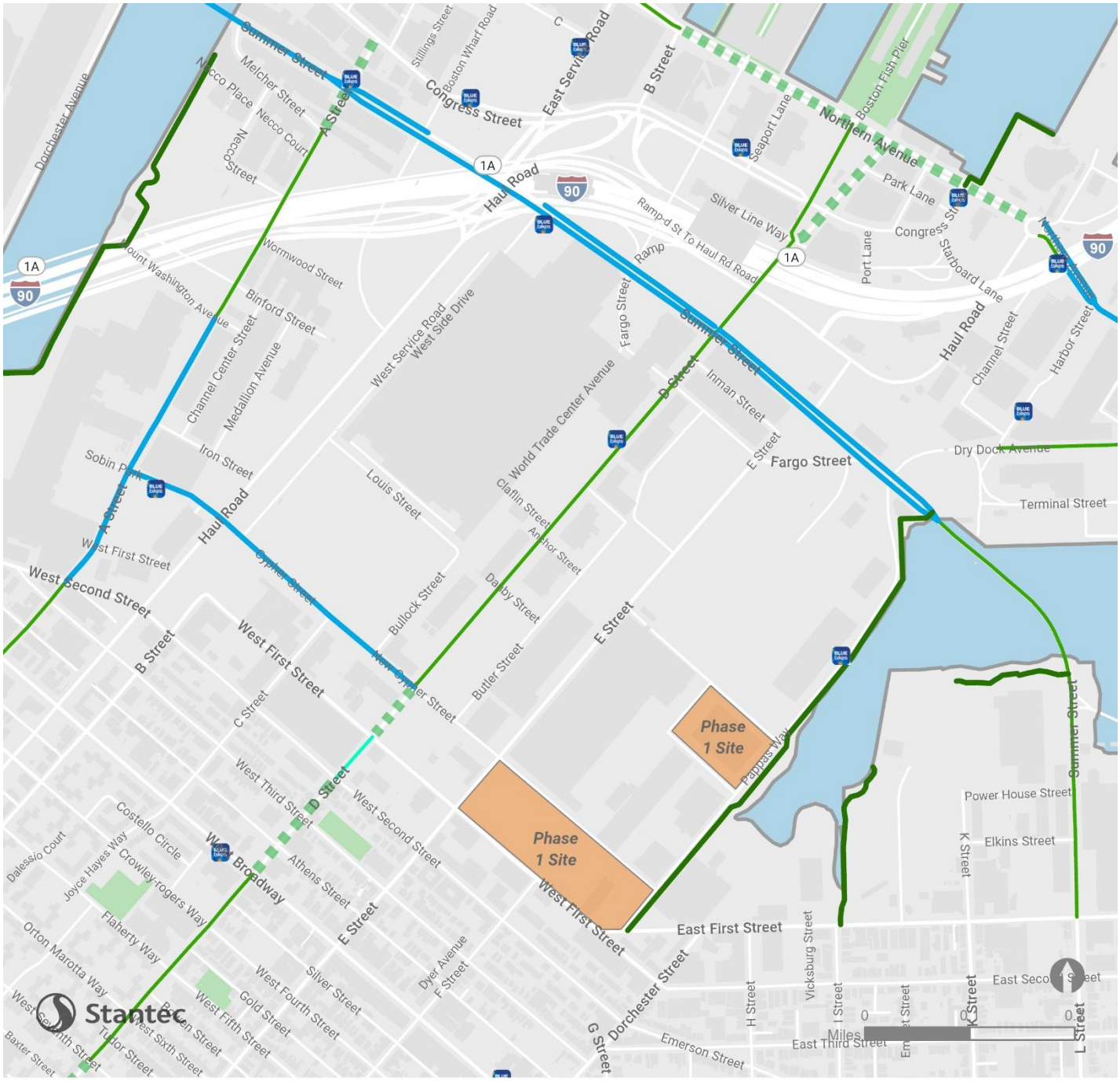
There are two Bluebikes stations within close proximity to the Phase 1 Site; one 19-bike station on Pappas Way between First Street and Summer Street, and a 15-bike station off of D Street adjacent to The Lawn on D.

Gaps in the existing network impact accessibility and create barriers due to the lack of infrastructure, thereby limiting users traveling between the South Boston neighborhood and the South Boston Waterfront district. Existing facilities are shown in Figure 7-4 based on the Boston Bicycle Network Map provided by BTD.

BTD makes available a Bicycle Level of Traffic Stress ("BLTS") score for City streets based on how stressful the roadway's traffic is to people bicycling, with roadway scores ranging from 1 (least stressful) to 4 (most stressful). These scores are based on the following factors:

- Traffic speed
- Average daily traffic volume
- Presence of bike lanes and parking lanes
- Conflict factors such as bus lanes and school zones

The BLTS within the study area is shown in Figure 7-5, although the metric as made available by BTD has not been updated since 2023 (prior to the implementation of improvements along Cypher Street, for instance). BLTS is generally high in the proximity of the Phase 1 Site, with E Street and West First Street each receiving a score of 4 (most stressful). These roads are considered stressful due to high vehicle volumes, increased loading activity, and a lack of bicycle facilities. Most minor roads within the study area have a score of 3 due to increased loading activity and lack of bicycle facilities.



Existing Bike Facilities (2024)

- Bike Lane - Lane that is separated from vehicle lanes with a single stripe
- Contraflow Bike Lane - Lane on a one-way street that allows people to bike in the opposite direction of travel
- Separated Bike Lane - Lane that is physically separated from motor vehicle traffic using flexposts, on-street parking, and/or raised curbs
- Shared Street - A street with shared lane markings indicating that bicycles and motor vehicles must share a travel lane
- Shared Use Path - A pathway with a paved surface shared by bicyclists and pedestrians
- Bluebikes Station

Reserved Channel Development Boston, MA

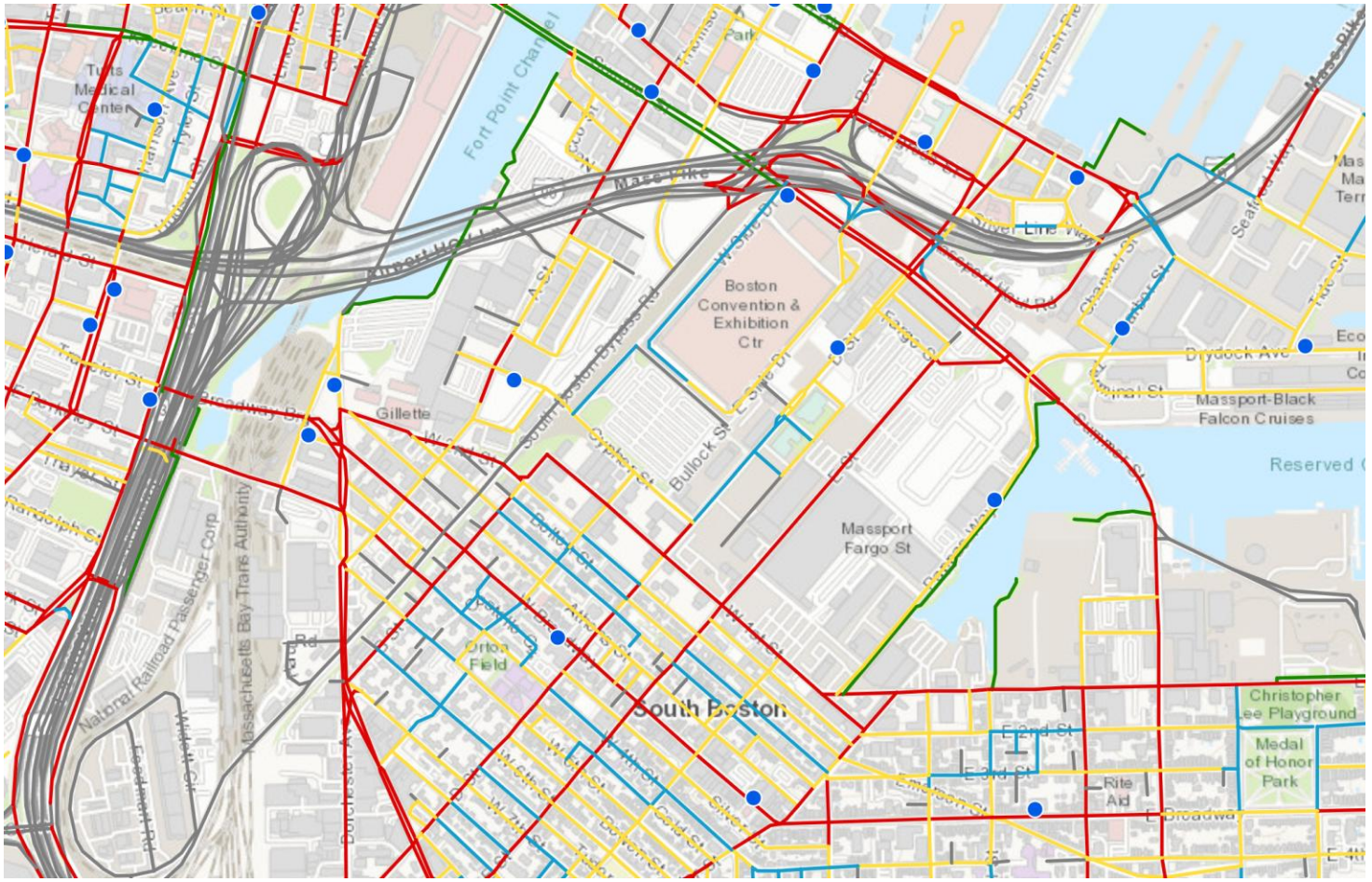
Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-4
Existing Bicycle Facilities

BlueBikes Stations in Boston

Bicycle Level of Traffic Stress 2023

- 1 Least Stressful
- 2
- 3
- 4 Most Stressful
- 0 or null



Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Source: City of Boston

Figure 7-5
Bicycle Level of Traffic Stress (BTD)

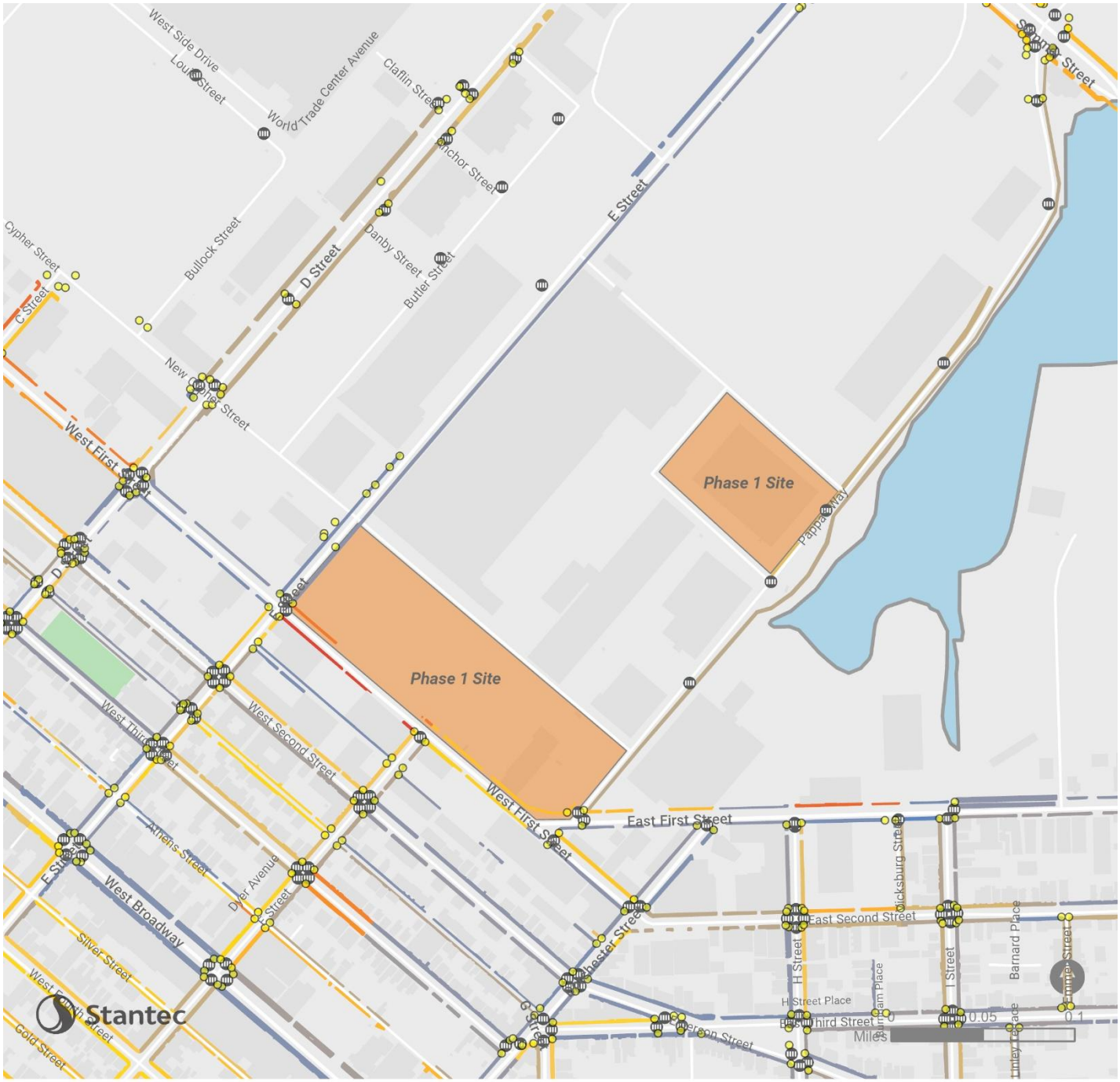
7.3.8 Pedestrian Facilities

Pedestrian connections to and from the Phase 1 Site, and the pedestrian realm within it are limited to existing sidewalks located adjacent to the Phase 1 Site on perimeter streets and the multi-use path along the Reserved Channel. Direct connections from the Phase 1 Site to the waterfront and Pappas Way are minimal. Given the industrial nature of the area, the sidewalks are adjacent to the travel way with no boulevard space between the sidewalk and curb.

Figure 7-6 shows the location and condition of sidewalks in the area surrounding the Phase 1 Site, as well as the location of crosswalks and ADA-compliant curb ramps. Sidewalks are evaluated by the City using a Sidewalk Condition Index ("SCI") which ranges from 0 to 100, and reflects the percentage of the sidewalk that is undamaged. Table 7-3 details the scoring methodology used for the SCI. According to this evaluation, sidewalks on E Street adjacent to the Phase 1 Project are in excellent condition, while sidewalks on West First Street adjacent to the northwest corner of the Phase 1 Site are in poor condition. Pappas Way lacks a continuous sidewalk along the Master Plan Site. The shared-use path that runs along the Reserved Channel currently serves as a sidewalk for pedestrians not trying to access the buildings along the road.

Table 7-3 Sidewalk Condition Index Scoring Methodology

SCI Score	% of Sidewalk Considered Damaged	Description
100-75 Good	0-25%	Little to no surface distress, has no impact on wheelchair users/pedestrians
75-50 Fair	25-50%	May be a trip hazard, wheelchair users/pedestrians may be able to use sidewalk with little to some difficulty
50-25 Poor	50-75%	Contains multiple trip hazards and/or tree root damage, wheelchair users/pedestrians have difficulty using sidewalk
25-0 Failure	25-100%	Contains excessive distress and severe damage, wheelchair users/pedestrians may be forced to use road



- Crosswalks
- ADA-Compliant Curb Ramp

Sidewalk Condition Index

- Poor
- Excellent

Reserved Channel Development Boston, MA

Source: Stantec

Figure 7-6
Existing Pedestrian Facilities

7.3.9 Crash History

A crash analysis was conducted to identify potential vehicle crash trends and/or roadway deficiencies in the study area. The most current vehicle crash dataset for study area intersections for the latest available five years was obtained from MassDOT for the years 2020 to 2024. A summary of the study area intersections vehicle crash history is presented in Appendix E, including the number of crashes per location and associated crash rates. New Cypher Street/E Street is not included as this intersection has only recently been completed.

The calculated crash rates were compared to those of MassDOT District 6 average crash rates, which are 0.71 per million entering vehicles ("MEV") for signalized intersections and 0.52 per MEV for unsignalized intersections. Using the data from the MassDOT database, all study area intersections have a calculated crash rate that falls below the MassDOT District 6 average values for both signalized and unsignalized intersections.

7.3.10 Transit Services

Because the Phase 1 Site has long been a void in South Boston, there have historically been no MBTA transit services within one-quarter mile of the Phase 1 Site. Within one-half mile of the Phase 1 Site are stops for MBTA Bus Routes 4, 7, 9, and 10. Just beyond one-half mile, there are stops for MBTA Silver Line Route 1, 2, and 3, along with the MBTA Red Line via Broadway Station. South Station, with connecting MBTA Commuter Rail services, is an approximately 1.3-mile walk from Phase 1 Site.

Existing transit services, including peak-hour headways, ridership, service days/hours, and distance from closest stop to Phase 1 Site area can be found in Table 7-4 and shown on Figure 7-7, as well as the existing transit trip distribution.

Table 7-4 Existing Transit Services

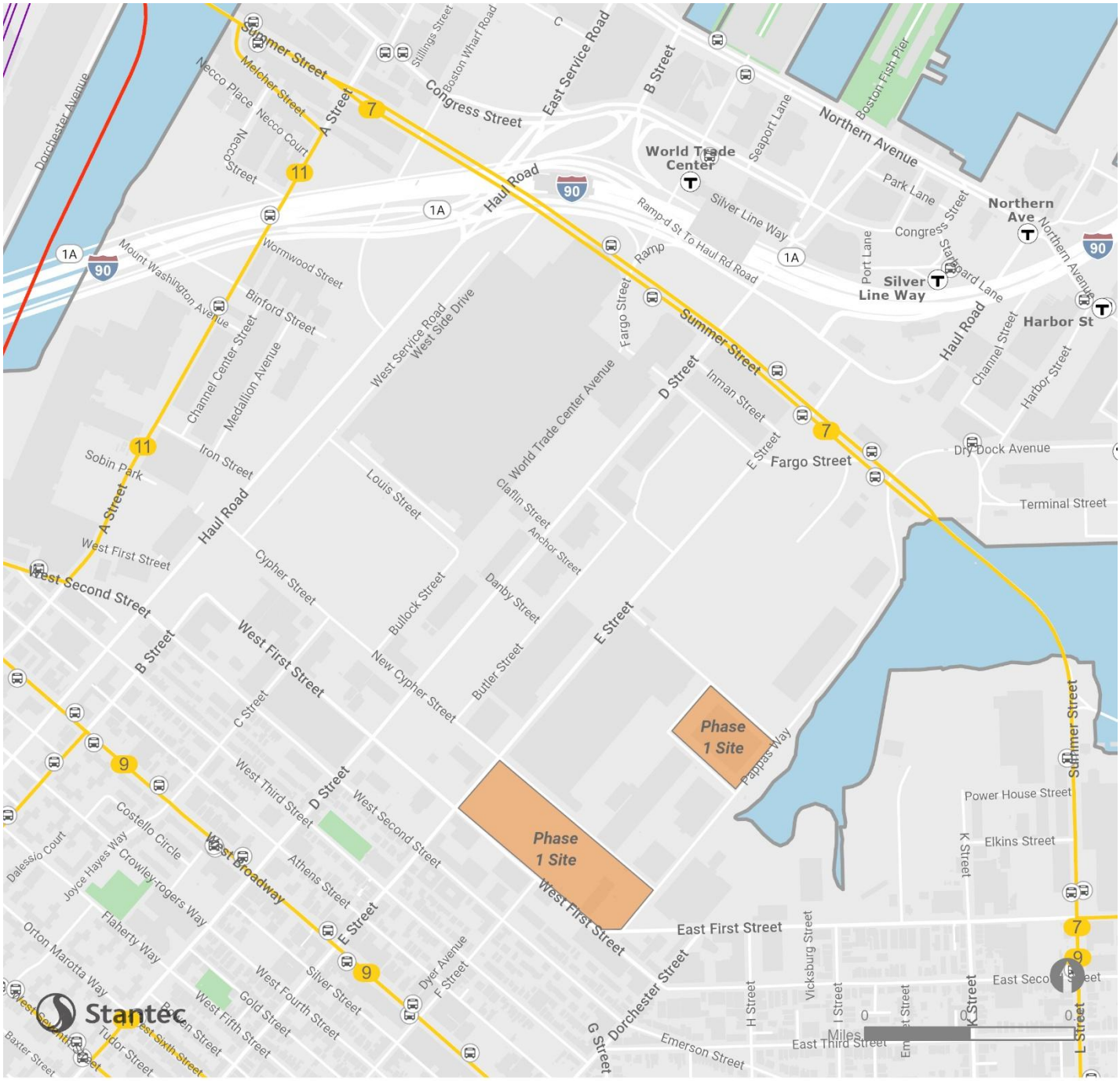
Route	Peak Hour Headways	Span of Service	Distance from Phase 1 Site (Closest Stop)
MBTA Bus Route 4 North Station to Design Center	20-30 mins	**Weekdays** ~6:30 AM – 7:30 PM	**0.5 miles** (Drydock Ave @ Design Center Place)
MBTA Bus Route 7 City Point to Otis St & Summer St	3-14 mins	**Weekdays** ~5:15 AM – 10:30 PM **Saturday** ~5:15 AM – 10:45 PM	**0.3 miles** (Summer St @ Drydock Ave/Pappas Way)

Table 7-4 Existing Transit Services (Continued)

Route	Peak Hour Headways	Span of Service	Distance from Phase 1 Site (Closest Stop)
MBTA Bus Route 9 City Point to Copley	5-20 mins	**Weekdays** ~5:15 AM – 1:00 AM **Saturday** ~5:00 AM – 1:30 AM **Sunday** ~6:00 AM – 1:15 AM	**0.3 miles** (West Broadway @ F St)
MBTA Bus Route 10 City Point to St. James/Arlington	20-30 mins	**Weekdays** ~4:50 AM – 1:40 AM **Saturday** ~6:15 AM – 1:30 AM **Sunday** ~6:00 AM – 1:15 AM	**0.3 miles** (Dorchester St @ Broadway)
MBTA Bus Route 11 City Point to Chauncy St & Summer St	12-23 mins	**Weekdays** ~5:10 AM – 1:20 AM **Saturday** ~5:05 AM – 1:20 AM **Sunday** ~6:15 AM – 1:30 AM	**0.5 miles** West Sixth St @ F St
MBTA Silver Line Route 1 Logan Airport to South Station	13 mins or less	**Weekdays** ~4:15 AM – 1:40 AM **Saturday** ~4:50 AM – 2:40 AM **Sunday** ~5:30 AM – 1:30 AM	**0.7 miles** (Silver Line Way)
MBTA Silver Line Route 2 Design Center to South Station	17 mins or less	**Weekdays** ~4:15 AM – 1:00 AM **Saturday** ~4:50 AM – 1:30 AM **Sunday** ~5:30 AM – 1:15 AM	**0.7 miles** (Silver Line Way)

Table 7-4 Existing Transit Services (Continued)

Route	Peak Hour Headways	Span of Service	Distance from Phase 1 Site (Closest Stop)
MBTA Silver Line Route 3 Chelsea Station to South Station	15 mins or less	**Weekdays** ~4:15 AM – 1:25 AM **Saturday** ~4:50 AM – 2:45 AM **Sunday** ~5:30 AM – 1:50 AM	**0.7 miles** (Silver Line Way)
MBTA Red Line Alewife to Braintree or Ashmont	4-5 mins	**Weekdays** ~5:10 AM – 12:30 AM **Saturday** ~5:10 AM – 1:30 AM **Sunday** ~5:55 AM – 12:30 AM	**0.7 miles** (Broadway Station)



Stantec

MBTA

Rapid Transit Lines

- BLUE
- GREEN
- ORANGE
- RED
- MBTA Local Bus
- MBTA Rapid Transit Stations
- MBTA Bus Stop
- MBTA Commuter Rail Lines

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-7
Existing Transit Services

7.3.11 Freight Network

Presently the Phase 1 Site and the Master Plan Site are primarily comprised of industrial and warehousing land uses and are surrounded by regionally important freight-intensive uses. The Master Plan Site is adjacent to a water-oriented industrial district, the RLFMP, and is located west of the Conley Container Terminal which processes the region's waterborne freight.

As shown in Figure 7-8, several surrounding roadways are key truck routes, some of which are federally designated as such. E Street, Cypher Street, Summer Street, South Boston Bypass Road, Pumphouse Road, Haul Road, and D Street, north of Summer Street, are the primary truck routes in the study area.

Completion of the Cypher Street extension between D Street and E Street, and upgrade of the E Street corridor, has provided an improved southerly connection to the RLFMP and Conley Container Terminal to and from South Boston Bypass Road, lessening truck needs on the D Street corridor south of Summer Street. Trucks cannot presently access Pappas Way or East First Street by driving directly through the Phase 1 Site, which discourages trucks from using local roadways in the South Boston neighborhood.

Turning movement count data collected at study area intersections on Tuesday, December 16, 2025 found that during the 7:45 a.m. to 8:45 a.m. and 5:15 p.m. to 6:15 p.m. peak periods, trucks collectively made up 5% of vehicle travel. Over 70% of truck movements occurred in the morning period. Trucks comprised over 10% of travel during the a.m. peak period at the Summer Street/D Street, Haul Road/Pumphouse Road, and E Street/Fargo Street intersections.

7.4 No-Build Condition

7.4.1 Background Traffic Growth

The Boston Planning Department maintains an online database of development projects, which includes all projects with a filed letter of intent, under review with the Boston Planning Department, Boston Planning and Development Agency Board approved, or under construction. The South Boston Waterfront and South Boston neighborhoods have 32 projects in the database within one-half mile of the Phase 1 Site. A number of these projects either did not complete traffic studies as part of their review process, or the data was unable to be located, or their analysis of project-generated trips did not overlap with intersections identified in the study area. Projects that are included in background traffic growth are shown in Figure 7-9 as well as indicated in Appendix E.

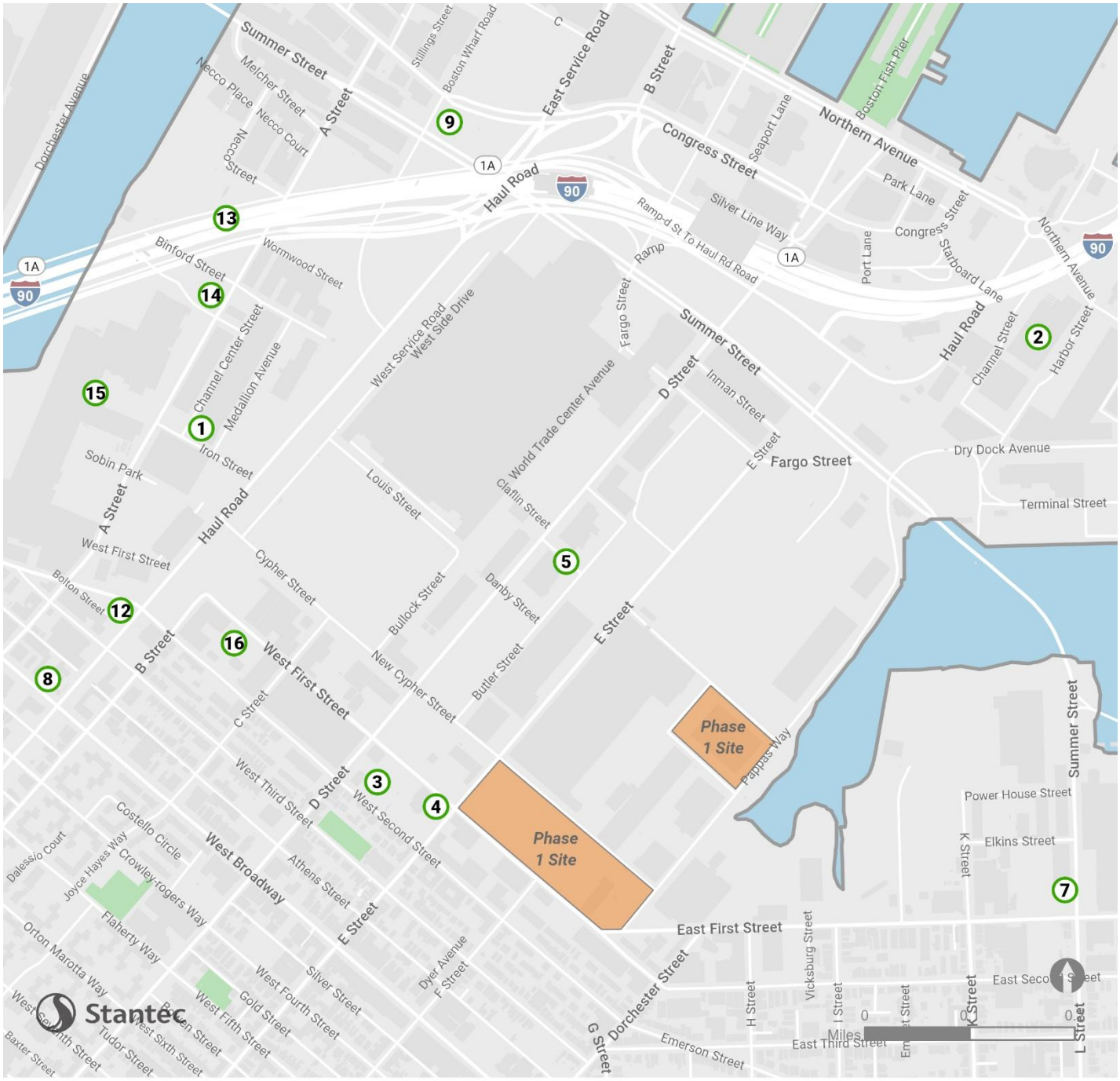


Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Source: Massport

Figure 7-8
Existing Freight Routes



Development Projects

1: 7 Channel Center
2: South Boston Innovation Campus
3: 270 West 2nd Street
4: 295 West First Street
5: 391 D Street
6: 22 Drydock Avenue
7: 6 Elkins Street
8: 80 West Broadway
9: Seaport Square
10: 310 Northern Avenue
11: 776 Summer Street
12: 99 A Street
13: 244-284 A Street
14: 232 A Street
15: Gillette Redevelopment
16: 181-185 West 1st St

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-9
Development Projects with Background Trips on No-Build Network

7.4.2 Proposed Infrastructure Improvements

Based on consultation with BTD, the Planning Department, MassDOT, and Massport, the roadway network as reflected in December 2025 is assumed to be in place during the Phase 1 Condition, anticipated to come online by 2033.

Within the RLFMP Master Plan Update, a direct connection between E Street, Summer Street, Haul Road and Drydock Avenue was indicated as a long-term infrastructure improvement by the Planning Department. These connections would improve truck access between E Street, Haul Road and Drydock Avenue, and would provide additional access to Haul Road from Summer Street. However, these improvements are not anticipated to be in place in the Phase 1 Condition, anticipated to come online in 2033.

7.4.3 No-Build Condition Traffic Volumes

A No-Build Condition was developed to evaluate future transportation conditions in the study area without the influence of the Phase 1 Project, using background growth projects found in Section 7.4.1. Additionally, volumes at the Cypher Street/Richards Street/South Boston Bypass and Congress Street/B Street/I-93 On-Ramp/I-90 Off-Ramp intersections, each under MassDOT jurisdiction, were adjusted to account for a conservative one percent growth rate.[1] Volumes at all other intersections under City of Boston-jurisdiction were not adjusted, at the City's direction. No-Build Condition volumes are shown on the study area in Figure 7-10.

7.4.4 Planning Context

The Phase 1 Site and Master Plan Site are located at the intersection of the South Boston Waterfront district and the traditional South Boston neighborhood. The South Boston Waterfront district, to the north and west of the Master Plan Site, is an evolving neighborhood of Boston which has experienced significant redevelopment over the past several decades as low-intensity uses such as surface parking lots and light industry have been redeveloped for a mix of residential and commercial uses. This area is characterized by its large block structure and, in the vicinity of the Master Plan Site, the presence of freight and other logistics uses in the area bounded by E Street to the west, Summer Street to the north, Pappas Way and the Reserved Channel to the east, and West First Street to the south.

[1] The D Street/I-90 On-Ramp intersection was not adjusted, given operations are only impacted along the City-owned D Street segments.

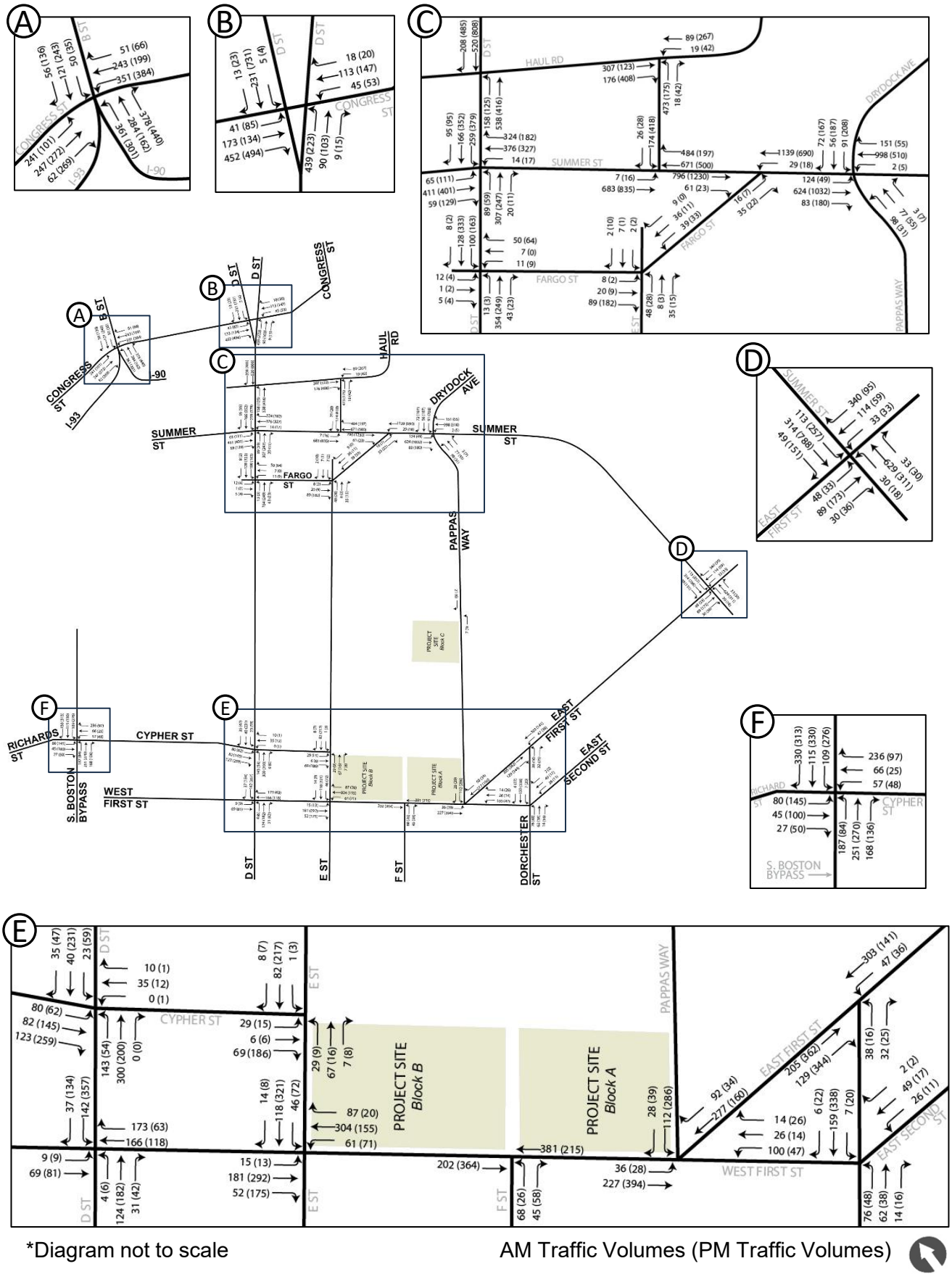


*Diagram not to scale

AM Traffic Volumes (PM Traffic Volumes)

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-10
No-Build Condition Traffic Volume

South of the Master Plan Site, the traditional South Boston neighborhood is primarily multi-family residential in nature, with approximately 20,250 housing units and 40,900 residents[2]. Blocks are much smaller than those in the South Boston Waterfront. In the immediate vicinity of the Master Plan Site, multi-family residential buildings and small-scale commercial uses are prevalent.

The South Boston Waterfront and the South Boston neighborhoods have been the focus of several planning studies over the past ten years. The Phase 1 Project and the Master Plan Project seek to be consistent with the goals and outcomes of these studies where they intersect with the Phase 1 Site and the Master Plan Site, monitoring the status of ongoing studies and coordinating planning characteristics as directed.

South Boston Transportation Action Plan

The Boston Planning Department is leading a plan to assess transportation safety in South Boston, identify and study integral aspects of the transportation network, and make recommendations for the near-term and future. In early 2024, the "South Boston Transportation Action Plan – Draft Recommendations" report[3] ("SBTAP") was released, with initial recommendations that aim to eliminate traffic crashes and create a safer network for all modes of transportation and all people. Discussion of potential improvements at the East First Street/West First Street/Pappas Way intersection from the SBTAP are cited with regards to proposed Phase 1 Project improvements at this intersection.

This plan recognizes that the development of the Master Plan Site offers the extraordinary opportunity to address many of the longstanding access and mobility challenges of this part of Boston, while providing needed housing, jobs, open space, and neighborhood amenities. These improvements are addressed in subsequent sections of this chapter.

Raymond L. Flynn Marine Park Final Master Plan Update

The Raymond L. Flynn Marine Park Master Plan Update[4] ("RLFMP") was released in 2022 to reflect a higher density for upcoming development within the RLFMP. The update proposed a series of multimodal transportation improvements to the roadway network within and adjacent to the RLFMP to facilitate expected increases in multimodal travel and to retain freight access to marine industrial uses.

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[2] Boston in Context: Neighborhoods, published by the Research Division of the City of Boston Planning Department (https://www.bostonplans.org/getattachment/45b1d52a-e762-42a4-b81d-d52072bfda61)

[3] South Boston Transportation Action Plan, published by the City of Boston Planning Department (https://www.bostonplans.org/planning-zoning/planning-initiatives/south-boston-transportation-action-plan)

[4] Raymond L. Flynn Marine Park (RLFMP) Final Master Plan Update, published by the City of Boston Planning Department (https://www.bostonplans.org/getattachment/1ce2cf5d-303a-4e68-a8aa-09d727b1c11a)

South Boston Waterfront Sustainable Transportation Plan

The 2015 South Boston Waterfront Sustainable Transportation Plan[5] defined an approach for multimodal transportation improvements across the South Boston Waterfront neighborhood. The recommendations include the Cypher Street Extension, which was recently completed, providing an east-west connection between D Street and E Street.

South Boston Seaport Strategic Transit Plan

The South Boston Seaport Strategic Transit Plan[6] prioritized transit recommendations from the South Boston Waterfront Sustainable Transportation Plan, Focus40, the MBTA Better Bus Project, and other plans. The final report, released by the Boston Planning Department in December 2023, outlines the City's prioritized recommendations, proposed timelines, and key next steps. Local, privately-operated bus services along Summer Street and A Street are referenced in the Plan.

F Street Corridor Study

In its current condition, F Street terminates at West First Street at the southern boundary of the Master Plan Site. Massport is currently studying an extended F Street from West First Street to Northern Avenue that would run through Massport ground lease tenant property (i.e., the Proponent's leasehold), maritime operations at the Fargo Street Terminal and Massport Haul Road, and US Department of Defense holdings along Summer Street. As envisioned, the extension of F Street adds a north-south connection between the traditional South Boston residential neighborhood and the South Boston Waterfront, establishes a more efficient street grid, eliminates dangerous intersections, improves the function of E Street as a primary truck route, and creates more opportunities for transit and neighborhood connectivity. Massport has engaged its transportation consultant to study this concept to better understand the benefits and impacts to the regional and local transportation network and advance conceptual level designs of the envisioned road network. Success requires stakeholder coordination, relocation of certain Massport operations, and land acquisition.

South Station Expansion

The South Station Expansion[7] project, proposed by MassDOT in 2012, includes an expansion of the South Station Rail Terminal capacity and layover capacity in order to meet the demand levels projected for 2035. Demand and capacity were analyzed for high-speed, intercity, and commuter

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5 South Boston Waterfront Sustainable Transportation Plan, published by the City of Boston Planning Department (https://www.bostonplans.org/getattachment/f69f2335-529c-497b-b512-3c3b0830349b)

6 South Boston Seaport Strategic Transit Plan, published by the City of Boston Planning Department (https://www.bostonplans.org/getattachment/09f5c7bc-9c25-49c0-bb55-074e7799489f)

7 South Station Expansion, published by MassDOT (https://www.mass.gov/info-details/massdot-completed-studies#south-station-expansion---2019)

rail service. MassDOT hosted a series of public engagement meetings, and completed the MEPA process, submitting a Final Environmental Impact Report in 2016.

GoBoston 2030

The GoBoston 2030 report[8] was first launched by the City of Boston in 2017, providing a guide and action plan for the City's investments in its transportation future. Key components of GoBoston 2030 include reducing drive alone to work rates, increasing transit usage, eliminating traffic fatalities and severe injuries, and placing residents within ten minutes of transit, bikeshare, and carshare. Since its initial release, more than half of the projects identified in the report have been completed or are currently in progress.

MBTA Bus Network Redesign

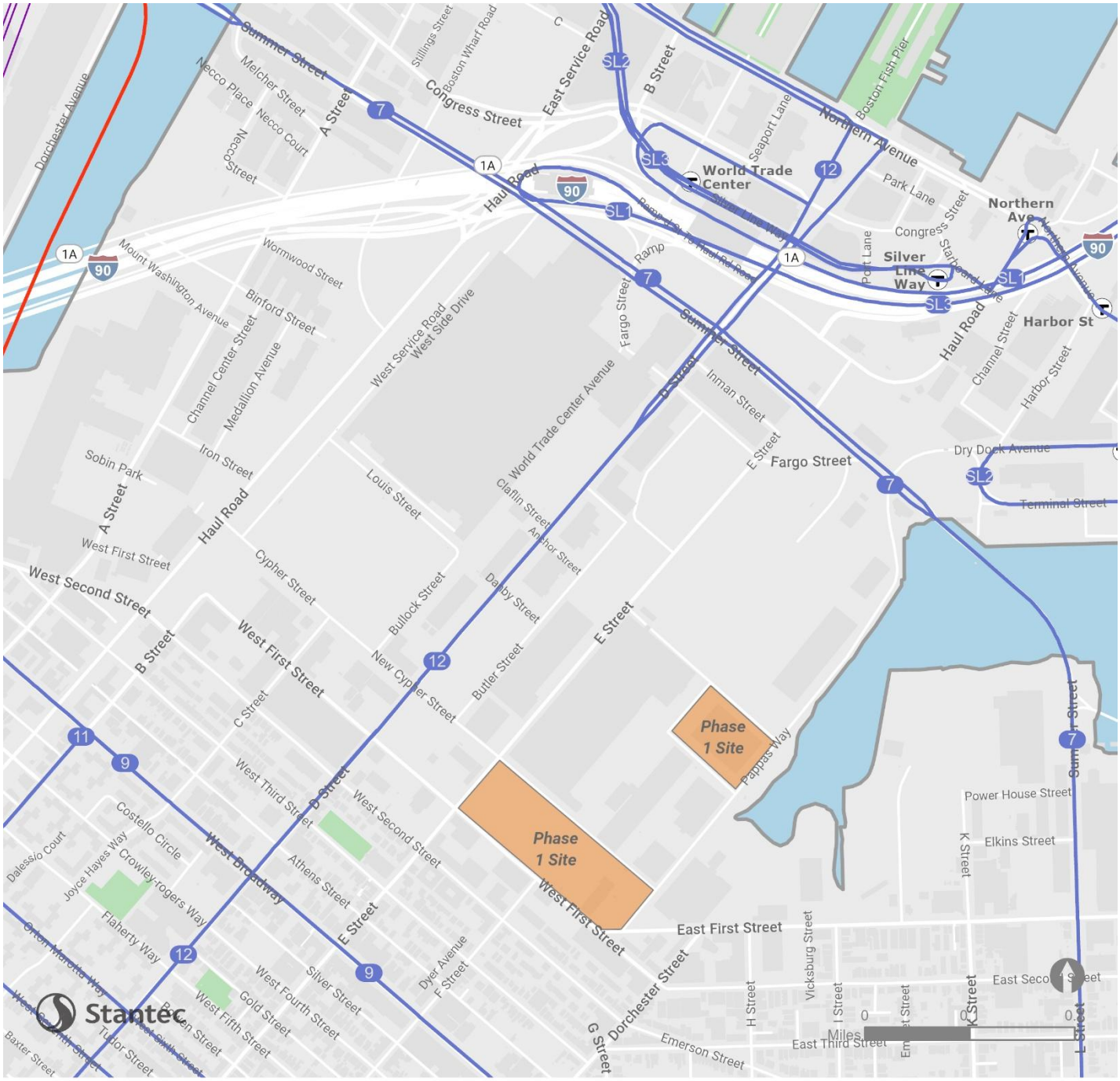
The MBTA's Bus Network Redesign[9] ("BNRD") initiative has proposed changes to the MBTA Bus Network to be implemented between 2024 and 2029. Several changes are proposed to bus service in the vicinity of the Master Plan Project, including the creation and/or extension of several bus routes to provide better transit connections between the Seaport District and North Station, the Longwood Medical and Academic Area, and Roxbury. A full breakdown of proposed changes in the Master Plan Project area is located in Table 7-5 below and shown in Figure 7-11. There is no timetable at the time of publication for implementation of local bus service changes in the vicinity of the Master Plan Project.

[8] GoBoston 2030, published by the City of Boston Transportation Department (https://www.boston.gov/departments/transportation/go-boston-2030)

[9] MBTA's Bus Network Redesign (https://www.mbta.com/projects/bus-network-redesign)

Table 7-5 Existing Transit Services and Proposed Changes under MBTA's Bus Network Redesign

Existing Transit Line/Route	Segment	Proposed BNRD Transit Line/Bus Route	Proposed Changes and Upgrades
MBTA Bus Route 4	North Station – Financial District	MBTA BNRD 7	MBTA BNRD 7 extends to connect South Station to North Station to Sullivan, adding Orange, Green, and Blue Line access; improves to all-day high-frequency service; adds new midday, evening, and weekend connections between Seaport, all subway lines, Commuter Rail, and Charlestown
	Northern Ave – Seaport Blvd	MBTA BNRD 7, 12, or Silver Line	
	Commercial St	MBTA BNRD 7, Red, Green, Blue, or Orange Lines	
MBTA Bus Route 7	City Point – Otis Street and Summer Street	MBTA BNRD 7	
MBTA Bus Route 9	City Point – Copley Station	MBTA BNRD 9	MBTA BNRD 9 is a more direct route at Broadway Station and improves to all-day high frequency service
MBTA Bus Route 10	South Boston – Boston Medical Center	MBTA Bus Route 10	MBTA Bus Route 10 extends from Boston Medical Center to Ruggles to replace 8; does not serve Copley, Back Bay, South End; serves McCormack Housing
	Boston Medical Center – Copley	MBTA BNRD 8	
MBTA Bus Route 11	City Point – Tufts Medical Center via Bayview	MBTA Bus Route 11	MBTA Bus Route 11 shortens to City Point – Bayview – Broadway – Tufts Medical Center with connections to Red, Orange, and Silver Lines.
	Tufts Medical Center – Broadway via A St	MBTA BNRD 7, 12, SL4, or Red Line	
MBTA Silver Line (SL1)	Logan Airport – South Station	MBTA BNRD SL1	MBTA BNRD SL1 does not stop at Silver Line Way for faster route between Airport & South Station
	Silver Line Way	MBTA Silver Line (SL2)	
MBTA Silver Line (SL2)	No Changes		
MBTA Silver Line (SL3)	Chelsea – South Station	MBTA BNRD SL3	MBTA BNRD SL3 does not stop at Silver Line Way for faster route between Airport & South Station
	Silver Line Way	MBTA Silver Line (SL2)	
None	Seaport – LMA	MBTA BNRD 12	MBTA BNRD 12 will run frequent bus service between Seaport Boulevard and Brookline Village, connecting to South Boston, Roxbury, and the Longwood Medical Area along the way.



MBTA

Rapid Transit Lines

- BLUE
- GREEN
- ORANGE
- RED

MBTA Rapid Transit Stations

BNRD Routes (Summer 2024)

MBTA Commuter Rail Lines

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-11
MBTA Bus Network Redesign

7.5 Phase 1 Condition

7.5.1 Phase 1 Site Plan

As described in Section 1.2.4.2, the Phase 1 Project consists of the demolition of approximately 192,700 sf of existing warehouse distribution uses across two sites (including demolition of buildings at 370 West First Street and 647B Summer Street) and the construction of six buildings totaling approximately 1,559,000 sf of gross floor area. The Phase 1 Project will include approximately 935 housing units, approximately 567,000 sf of commercial research laboratory uses, approximately 30,000 sf of wellness/fitness uses, approximately 22,500 sf of restaurant uses, approximately 20,000 sf of grocery uses, and approximately 11,500 sf of retail uses. These uses will be spread across three sites, as depicted in Figure 1-8.

- Block A is bounded on the east by Pappas Way, the north by Road 1, the west by F Street, and the south by West First Street, and will include three buildings totaling approximately 400 housing units, approximately 8,000 sf of restaurant uses, and approximately 5,000 sf of retail uses.

- Block B is bounded on the east by F Street, the north by Road 1, the west by E Street, and the south by West First Street, and will include three buildings totaling approximately 535 housing units, approximately 20,000 sf of grocery uses, approximately 6,500 sf of retail uses, and approximately 3,500 sf of restaurant uses.

- Block C is bounded on the east by Pappas Way, the north by Road C, the west by Road B, and the south by Road A, and will include two buildings totaling approximately 567,000 sf of commercial research laboratory uses, approximately 30,000 sf of wellness/fitness uses, and approximately 11,000 sf of restaurant uses.

7.5.1.1 Site Access and Vehicle Circulation

The Phase 1 Site is designed to create and distribute vehicle, pedestrian, and bicycle access in a means which is well-integrated with the surrounding neighborhood, particularly with regards to residential streets west and south of West First Street. The Phase 1 Site is designed to meet the Master Plan Project and neighborhood's transportation needs prior to implementation of the Master Plan program, expanding to fill the existing void in the transportation and land use network which presently disconnects the South Boston neighborhood with the South Boston Waterfront between West First Street and Summer Street.

The vision for the Phase 1 Site has been developed over the course of many years through discussions with the City, community and Massport to create an inclusive and inviting environment which connects to the surrounding neighborhood, the future Master Plan Site, and beyond. The Phase 1 Site will extend the existing South Boston neighborhood street grid to the north and west with a continuation of residential uses on Block A and Block B between West First Street and the internal Road 1. This is the beginning of what will be established by the Master Plan Project which will broaden the east/west roadway network with new streets, extend F Street

through the Master Plan Site toward Summer Street, and deemphasize Pappas Way as a vehicular corridor with the eventual closure of the southern and northern portions of Pappas Way and redirecting vehicles toward F Street. Refer to Figure 7-12 for the Phase 1 access diagram.

Block A and Block B Vehicle Access

Block A and Block B vehicle access will be facilitated via the internal Road 1 accessible from E Street, an extended F Street, and Pappas Way; a combined vehicle entrance/exit will be provided for each block (underneath Building A2 and Building B2) via Road 1. Motorists will be provided access to and from the west towards the South Boston Bypass Road via Cypher Street extension, facilitating regional connections to I-90 and I-93. Additional vehicle access to Block B will be provided via an existing curb cut along E Street, adjacent to the Cypher Street/E Street/Road 1 intersection. Pedestrian access will be facilitated from West First Street, F Street, and Pappas Way.

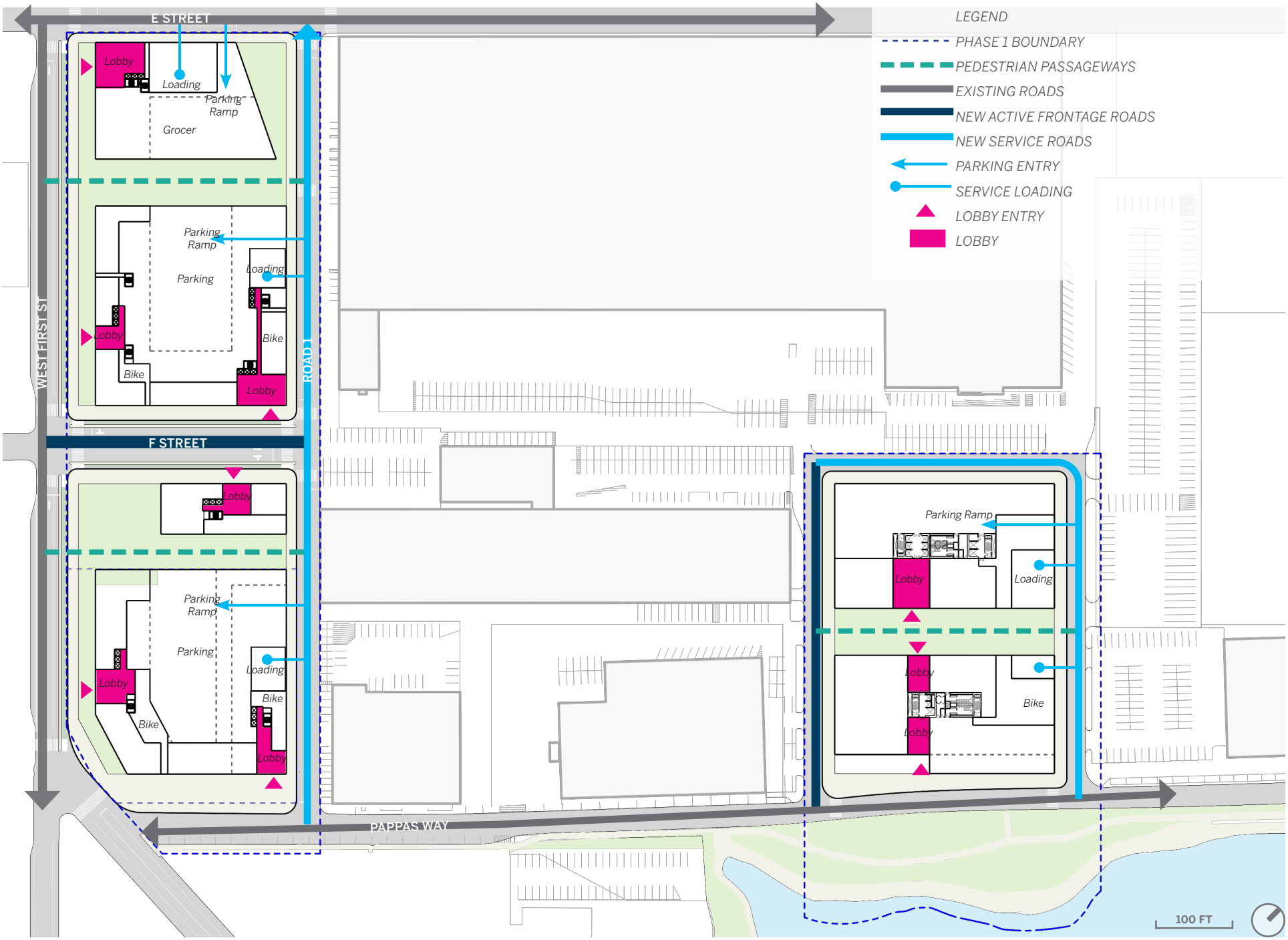
Block C Vehicle Access

Block C vehicle access will be facilitated via the internal Road C, with a combined vehicle entrance/exit serving Block C via Building C2. Motorists will be directed to use Road C only to access these driveways instead of circulating elsewhere on the Master Plan Site, such as to Road A, Road B, or the Master Plan Site driveway serving E Street (as shown in Figure 7-12). Access to other uses associated with the remainder of the Master Plan Site will be discouraged, other than to existing curb cuts adjacent to Block C, such as the surface parking lot currently used for 645 Summer Street. Pedestrian access will be facilitated to Building C1 via Pappas Way and to both Building C1 and Building C2 via a landscaped corridor between the two buildings, accessible from Road A and Road C.

7.5.1.2 Vehicle Parking

The Phase 1 Project will include on-site parking spaces in enclosed, primarily below-grade garages that will serve each block. All existing surface parking on the Phase 1 Site will be removed; surface parking for existing uses outside of the Phase 1 Site area will remain to serve the remaining uses.

In accordance with BTD's parking guidelines, developments that are larger than 50,000 sf are restricted to maximum parking ratios based on uses. The Phase 1 Project will comply with these maximum parking ratios by providing approximately 0.69 spaces per 1,000 sf of commercial research laboratory space (allowed up to 0.80 spaces per 1,000 sf), approximately 0.75 spaces per housing unit (in line with allowances for rental units), and no dedicated parking for wellness/fitness, restaurant, grocery, or retail uses. The maximum allowed parking supply for this location is 1,224, a figure larger than the 1,095 spaces proposed for inclusion. There are currently 463 spaces on the Phase 1 Site.



Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-12

Phase 1 Site Entrance, Exits, and Road Typologies

The Phase 1 Project parking program is shown in Table 7-6, as well as a comparison to the recommended number of spaces as indicated in the ITE Parking Generation Manual, 6th Edition. The ITE projections point to more than double the supply than is proposed. Using time of day occupancy projections from the Parking Generation Manual, the peak parking demand across the Phase 1 Project is projected to occur at 11:00 a.m., with projected occupancy at its lowest point at 54% at 9:00 p.m. Note that this analysis shows parking demand for all land uses, including commercial uses for which parking is not specifically allocated for.

In keeping with the Phase 1 Project's approach towards sustainable transportation, the parking supply will be constrained to minimize dependence on auto travel and encourage the use of alternative, multimodal means of access. This is supported by the land use program for the Phase 1 Project itself, where the presence of uses such as a wellness/fitness center, grocery store, and restaurant and retail uses will encourage internal walking trips from the residential and commercial research laboratory uses.

Table 7-6 Phase 1 Project Vehicle Parking Program

Block	Residential Units (0.75 spaces per unit)	Commercial Research Laboratory sf (0.69 spaces per 1,000 sf)	Parking Provision	ITE Parking Generation Manual, 6th Edition Standard[10]
A	400 units		301 spaces	595 spaces
B	535 units		401 spaces	736 spaces
C		567,000 sf	393 spaces	1,190 spaces
Total	**935 units**	**567,000 sf**	**1,095 spaces**	**2,521 spaces**

Parking operations will be actively managed to maximize the efficiency of parking, including sharing parking based on peak occupancy times of day. This will allow for flexible use of the parking between users (residents, employees, and other commercial visitors) at various times of the day into the evenings and weekend. The final parking management plan will include other proven tools to manage parking demand. These may include:

- Pricing based on local market rates;
- Daily rather than monthly or annual pricing;
- Real-time availability signage;

[10] Given all land uses associated with each block

- Unbundled parking;
- Significant presence of EV charging stations in compliance with City of Boston regulations, where applicable, and the Massport Sustainability Design Guidelines;
- Offering parking cash-out; and
- Preferential spaces for car-share or high occupancy vehicle parking.

Active management of the vehicle parking program will seek to reduce spillover effects to the surrounding neighborhood. The intention of the Phase 1 Project is to disincentivize on-street parking beyond the Phase 1 Site through a variety of strategies including:

- Deployment of shared parking strategies to provide opportunity for Phase 1 Project uses without dedicated on-site parking (e.g., retail uses) to use on-site parking in periods of decreased demand, such as evenings and weekends.
- Provision of short-term parking spaces within on-site parking facilities or on the street along the Phase 1 Site frontage, for pick-up/drop-off and other short-term activities.
- Use of strategic pricing to incentivize on-site parking in instances where users (particularly residents) are unwilling to pay a market rate for parking within their associated block but could park elsewhere on the Phase 1 Site, particularly underneath Block C where parking is expected to be used during the daytime on weekdays.

Additionally, during periods of lighter demand the excess parking supply could be made available for broader neighborhood uses not associated with the Phase 1 Project. The Proponent will actively monitor on-site parking usage to consider long-term provision of:

- Short-term neighborhood parking
- Longer-term visitor parking for guests of nearby housing
- Overnight parking in instances of weather emergencies, such as winter storms
- Dedicated parking for nearby residents, especially should off-site growth in the housing supply occur

The Phase 1 Project's sustainable transportation program, profiled elsewhere in this chapter, will further seek to disincentivize the need for residents, employees, and visitors to drive to and from the Phase 1 Site.

The Proponent will provide EV charging and EV-ready infrastructure at all proposed parking facilities. A minimum of 10% of parking spaces within a parking garage on Massport-owned parcels will be equipped with EV charging upon opening, with an additional 15% of spaces supplied with EV-ready infrastructure. For Fee Parcels, the Proponent will comply with the City of

Boston's EV policy by providing the equivalent of 25% of the total parking supply with EV chargers and sufficient infrastructure capacity for future accommodation of the remaining parking supply. Based on currently anticipated parking count for Phase 1, approximately 142 spaces across the Phase 1 Project parking garages will have EV chargers.

Pick-up and drop-off coordination will be determined as Phase 1 Site development continues to progress. Longer-term truck parking, such as for residential move-in/move-out, will also be determined prior to occupancy of the Phase 1 Project and will be focused on use of parking and service facilities instead of the surrounding street network.

7.5.1.3 Bicycle Parking

Bicycle facilities will be provided in accordance with BTD's Bike Parking Guidelines on the Fee Parcels. On the Massport-owned parcels, the bicycle parking count will comply with the LEED requirements at a minimum. This will include the provision of short-term and long-term bicycle parking in convenient locations for all user types for different land uses associated with the Phase 1 Project. The Phase 1 Project will also work with BTD to fulfill BTD's bikeshare requirement, built out by applicable building.

Exterior "short-term" bicycle parking is proposed for visitors within each of the blocks. This parking will meet BTD standards by being visible from the public right-of-way, conveniently located, legible as parking, and intuitive to use. Racks installed on sidewalks and as part of public plazas will be located to preserve accessibility for people walking and using assistive mobility devices.

Interior "long-term" bicycle parking will serve residents and employees associated with the Phase 1 Project. Interior bicycle parking will enable longer-term parking for residents, employees and other tenants of the Phase 1 Project in a secure and weather-protected location. These facilities will be located near building entrances and accessible via corridors with existing or planned bicycle facilities. Characteristics of internal bicycle parking locations will comply with BTD guidelines, as applicable, and include shower and changing facilities, as appropriate, to enable year-round bicycle travel.

7.5.1.4 Street Network Improvements

All rights-of-way will be designed taking into consideration the Boston Complete Streets guidelines and ultimately be subject to Massport approval. New sidewalks will be constructed adjacent to the Phase 1 Site in accordance with the requirements of the Americans with Disabilities Act and Massachusetts Architectural Access Board ("ADA/AAB"). This will include reconstruction and widening of the adjacent sidewalks, the installation of new, accessible ramps, improvements to street lighting where necessary, planting of street trees, and providing bicycle storage racks. All internal streets will be owned and maintained by Massport.

Figure 7-13 and Figure 7-14 detail cross-sections for the Phase 1 Site, compared to existing conditions. Streetscape benefits of the Phase 1 Project include:

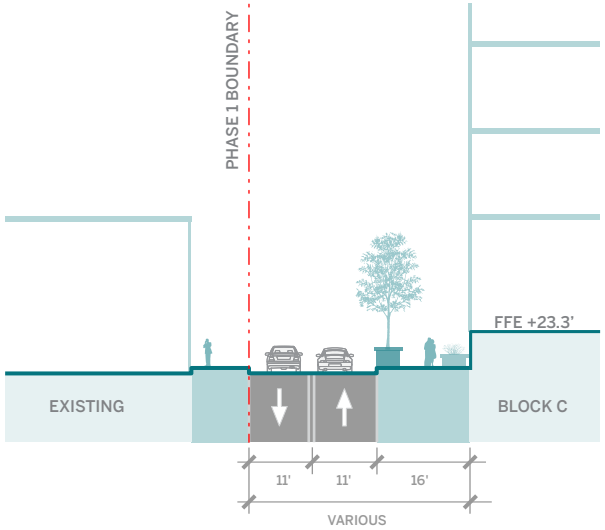
- Provision of a dedicated, two-way bicycle path, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along the northern frontage of West First Street. This is consistent with improvement concepts indicated for West First Street at this location in the South Boston Transportation Action Plan.

- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern frontage of Road 1, as well as sidewalks along the northern frontage of Road 1. The right-of-way of Road 1 will be expanded in the Master Plan Condition.

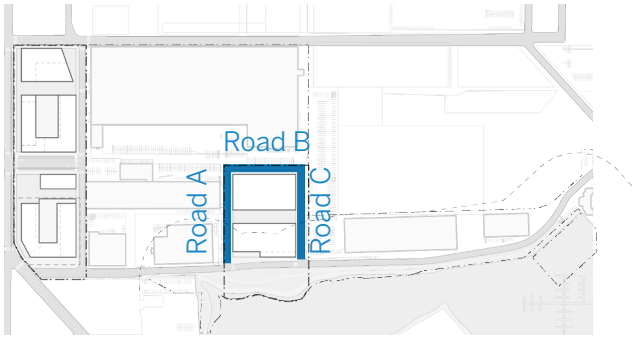
- Provision of bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.

- Provision of street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage. These temporary roads will be replaced when the parcels that abut them are developed and the right-of-way will be expanded.

As noted in Section 7.5.1.1, the provision of vehicle entrances along Road 1 to serve Block A and Block B are meant to preserve the West First Street and F Street frontages for non-vehicular access, as the Phase 1 Site design demonstrates. This design intention is carried through the Master Plan Site, with vehicle entrances designed to be accessed from secondary east/west streets with north/south streets such as F Street and Pappas Way designed to facilitate multimodal travel, uninterrupted by curb cuts.



Temporary Road A, B, C Section
(Phase 1 Only)



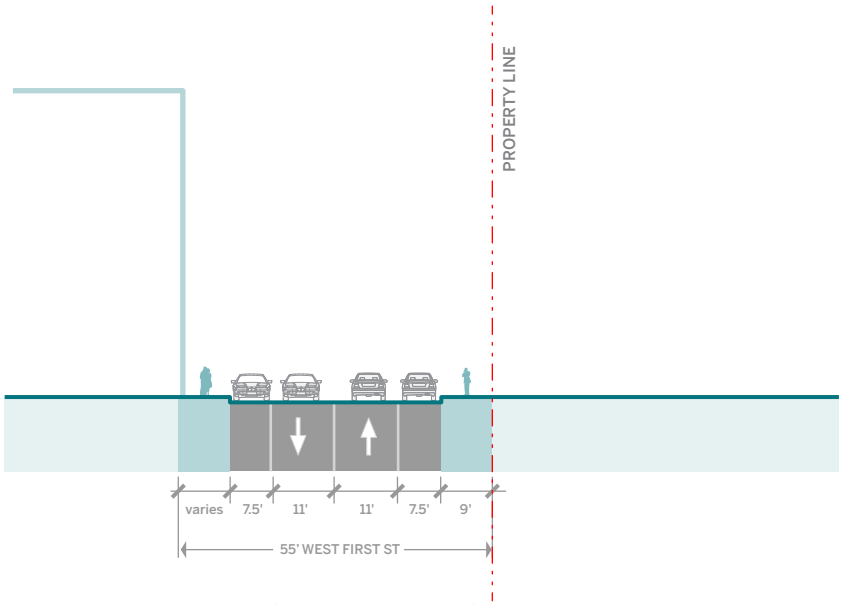
Key Plan

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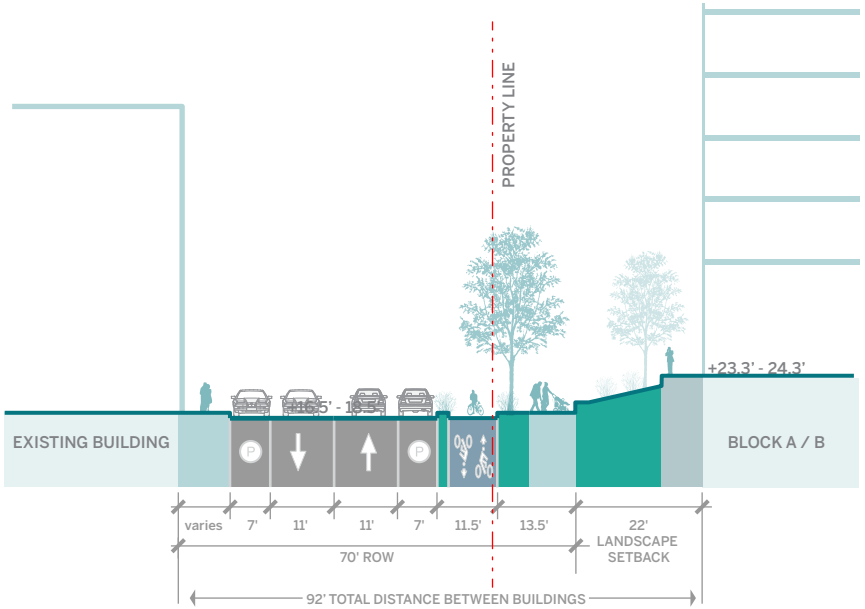
Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-13
Phase 1 Site Proposed Cross-Section



West First Street Existing Section



West First Street Proposed Section



Key Plan

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-14

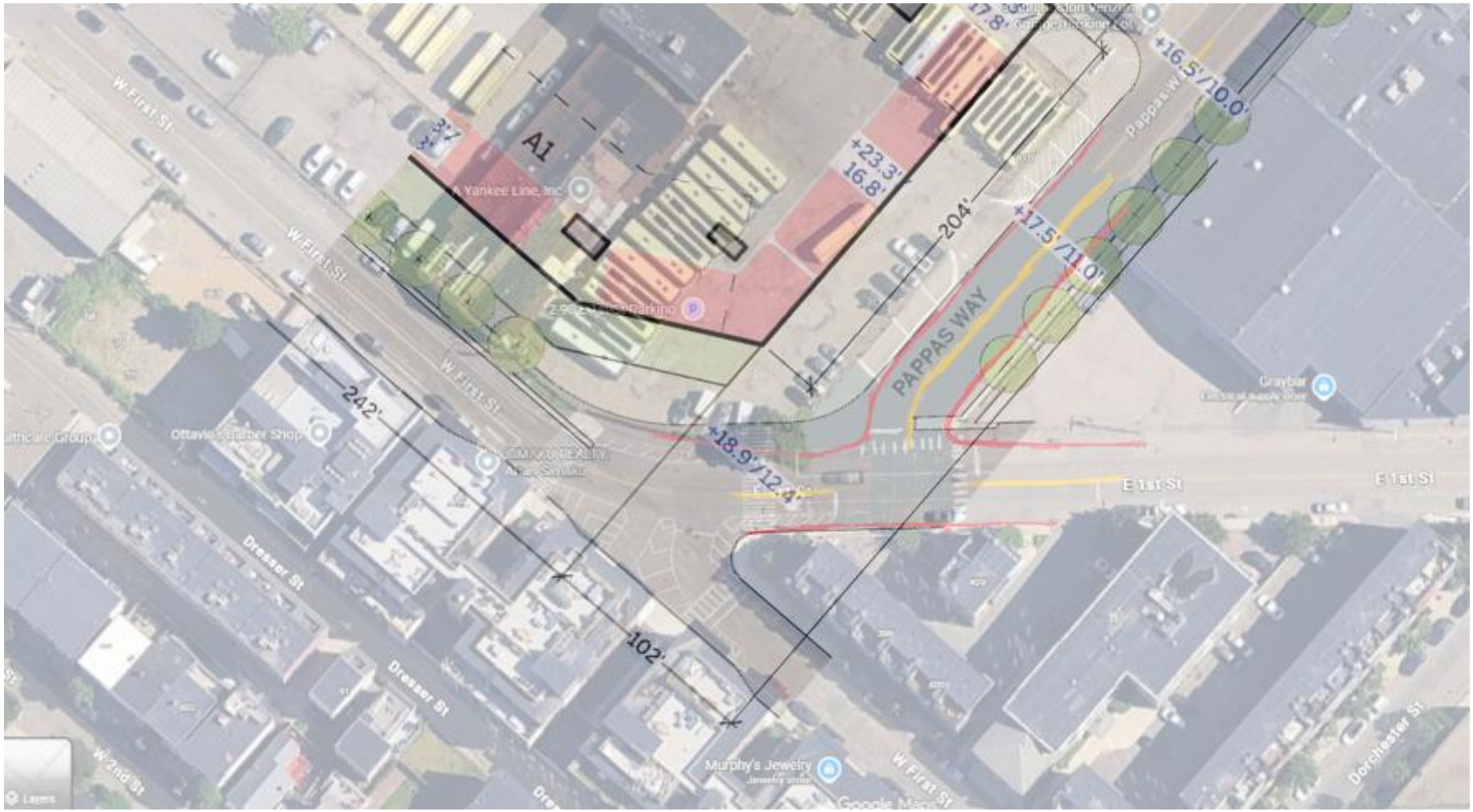
Phase 1 Site Proposed Cross-Section

7.5.1.5 East First Street/West First Street/Pappas Way

Following improvements in 2021, the intersection of East First Street/West First Street/Pappas Way operates under three-way stop-control with pavement markings, signage, and flex posts used to reduce travel lane widths. Although the crash analysis profiled in Section 7.3.9 does not identify this intersection as a high-crash location, the SBTAP proposes concepts which reconfigure the approach of Pappas Way to meet East First Street at an approximately 90-degree angle to address sight distance deficiencies present from the Pappas Way approach today. The SBTAP cites challenges related to driver compliance and notes the introduction of stop-control at all intersection approaches between 2021 and 2023.

In keeping with the SBTAP's recommendation, the Phase 1 Project proposes to modify the approach of Pappas Way with East First Street to allow these roadways to meet at more of a 90-degree angle than the present condition. This improvement will create sight distance improvements for motorists accessing East First Street from Pappas Way and reduce the curb-to-curb footprint of the intersection to reduce vehicle speeds and support multimodal travel. Reduction in the width of East First Street may be required for this improvement. The improvement concept is shown in Figure 7-15 and is consistent with the ideals cited in the SBTAP, including to accommodate the two-way cycle track along the northern frontage of West First Street east of this location. The concept will continue to be refined in coordination with Massport and the City as design progresses and be planned to not preclude the longer-term Master Plan objective.

In the Master Plan Condition with F Street extended to Summer Street, the need for Pappas Way to connect the South Boston neighborhood with the South Boston Waterfront will be negated. The Master Plan Project will create open space between East First Street/West First Street and Road 1, which has been requested by the community, with F Street serving as the primary north/south vehicle connection. As such, the proposed Phase 1 Project improvement to the Pappas Way/East First Street/West First Street intersection is intended to be an interim solution only.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-15

East First Street/West First Street/Pappas Way Phase 1 Site Proposed Improvements

7.5.2 Phase 1 Trip Generation, Assignment, and Distribution

7.5.2.1 Existing Phase 1 and Master Plan Site Activity

To determine the number of net new trips by mode to the Phase 1 Site, an evaluation was completed to determine trip generation to and from the existing Master Plan Site (which includes Phase 1). This evaluation is detailed in Appendix E and involved:

- Traffic count data collection at six curb cuts serving the Master Plan Site in active use in December 2025
- Derivation of land uses to be redeveloped under the Phase 1 Project and assignment of existing trips to these land uses based on ITE Trip Generation Manual, 12th Edition projections
- Conversion of vehicle trips to person trips

Outputs of this analysis are provided in Table 7-7 and Table 7-8.

Table 7-7 Estimated Existing Vehicle Trips for Phase 1 Site Uses and Master Plan Site Uses

Site	Daily	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1 Site	103	6	2	8	2	5	7
Master Plan Site	***1,599***	***95***	***30***	***125***	***38***	***75***	***113***

Table 7-8 Estimated Existing Person Trips for Phase 1 Site Uses and Master Plan Site Uses

	Daily	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1 Site	***138***	***8***	***3***	***11***	***3***	***8***	***11***
Master Plan Site	***2,633***	***148***	***51***	***199***	***72***	***127***	***199***

7.5.2.2 Phase 1 Project Trip Generation – Net New Trips

Unadjusted Trip Generation

Using the ITE Trip Generation Manual, 12th Edition, the projected unadjusted Phase 1 Project vehicle trips are shown in Table 7-9. Note that due to insufficient sample size in the ITE Trip Generation Manual, 12th Edition for Research & Development Center (LUC 760), which featured only one study, the LUC for office is used instead. Use of the LUC for office produces a more conservative analysis (greater peak hour trips per square foot) than the use of Research & Development Center cited from the ITE Trip Generation Manual, 11th Edition in the ENF.

Table 7-9 Phase 1 Project Unadjusted Vehicle Trips

Land Use Details				ITE Vehicle Trips						
Use	LUC	Size	Units	Daily	AM			PM		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Office	710	567,000	sf	3,712	576	79	655	95	498	593
Residential (Mid-Rise)	221	935	DU	4,237	89	296	385	217	122	339
Grocery Store	850	20,000	sf	2,055	35	24	59	103	103	206
Recreational Community Center	495	30,000	sf	857	71	37	108	51	55	106
Retail	822	11,000	sf	715	25	20	45	42	42	84
Restaurant	932	22,500	sf	2,334	111	91	202	126	81	207
TOTAL				***13,910***	***796***	***456***	***1,252***	***508***	***820***	***1,328***

Projected New Person Trips

The unadjusted vehicle trips from Table 7-9 were converted to person trips by applying average vehicle occupancy ("AVO") factors (by land use) to the trip estimates. AVO factors specific to the broader area between the South Boston neighborhood and Summer Street were provided by the Planning Department during the December 19, 2025 coordination session. Table 7-10 shows the AVO factors assigned to each proposed land use, as well as the resulting person trip estimates by land use.

Table 7-10 Phase 1 Project-Generated Person Trips, Unadjusted

Land Use Details	AVO	Person Trips						
		Daily Trips	AM			PM		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Office	1.08	4,009	623	85	707	102	537	640
Residential (Mid-Rise)	1.08	4,576	96	320	416	235	132	367
Grocery Store	1.6	3,289	56	39	94	165	165	329
Recreational Community Center	1.99	1,705	142	73	215	101	109	210
Retail	1.53	1,094	38	31	69	64	64	129
Restaurant	1.99	4,645	221	181	402	251	160	411
TOTAL		***19,318***	***1,175***	***729***	***1,903***	***918***	***1,168***	***2,086***

Internal Trip Capture

The ITE Trip Generation Manual provides trip estimates for land uses in primarily standalone locations, without the opportunity for internal capture (where a person visits multiple uses at the same site as part of the same trip). These internally captured trips do not impact the wider transportation network, and as such should be excluded from the final trip estimates in the transportation impact analysis. This analysis uses a tool provided by the National Cooperative Highway Research Program ("NCHRP") Report 684, a nationally recognized standard approach to internal capture, to produce anticipated internal capture rates based on the land uses present at the Phase 1 Site and their proximity to one another. Table 7-11 shows the NCHRP predicted internal capture rates by land use and time period, and the adjusted person trip estimates after the rates were applied. Overall, approximately 36% of the anticipated Phase 1 Project trips are predicted to be internally captured.

Table 7-11 Phase 1 Project Person Trips, with Internal Capture Adjustments

Land Use Details	Internal Capture Percentages					Person Trips, Adjusted for Internal Capture						
	Daily[11]	AM		PM		Daily	AM			PM		
		IN	OUT	IN	OUT		IN	OUT	TOTAL	IN	OUT	TOTAL
Office	36%	19%	91%	26%	6%	2,574	501	7	509	76	504	580
Residential (Mid-Rise)	30%	7%	21%	48%	42%	3,223	89	252	341	122	76	199
Grocery Store	47%	29%	41%	56%	61%	1,744	39	23	62	72	64	136
Recreational Community Center	10%	0%	0%	20%	22%	1,528	142	73	215	81	86	167
Retail	47%	29%	41%	56%	61%	580	27	18	45	28	25	53
Restaurant	43%	36%	31%	34%	70%	2,653	141	125	265	166	48	214
TOTAL						***12,303***	***939***	***499***	***1,437***	***545***	***803***	***1,348***

Trips by Mode

After adjusting for vehicle occupancy and internal capture, the adjusted person trips were distributed to different modes of transportation. Mode share assumptions are based on aspirational figures for the broader area between the South Boston neighborhood and Summer Street provided by the Planning Department during the December 19, 2025 coordination session. Table 7-12 shows the total projected trips by mode for the Phase 1 Project. The estimates for

[11] NCHRP methodology does not estimate daily internal capture rates. Daily internal capture rate applies based on an average of the AM, PM, IN, and OUT rates for each land use.

vehicular person trips were re-converted into vehicle trips using the same AVO factors cited in Table 7-10, resulting in the estimated vehicle trips figure.

Table 7-12 Phase 1 Project Proposed Person Trips by Mode

Mode Share			Person Trips, by Mode					
			AM			PM		
Mode	Mode Share	Daily Trips	IN	OUT	TOTAL	IN	OUT	TOTAL
Drive	27%	3,347	279	127	405	147	250	391
Transit	35%	4,352	351	179	533	174	303	491
Walk	25%	3,151	206	128	343	149	166	320
Bike	13%	1,575	103	64	171	75	83	160
TOTAL	***100%***	***12,426***	***939***	***499***	***1,452***	***545***	***803***	***1,361***
Vehicle Trips		**2,437**	**221**	**91**	**312**	**100**	**209**	**309**

Net New Trips

Finally, existing person trips to and from the Phase 1 Site were debited from each mode based on an assumption of following existing mode share distribution cited in the South Boston Seaport Strategic Transportation Plan. This calculation yields net new trips to the Phase 1 Site by mode, as shown in Table 7-13.

Table 7-13 Phase 1 Project Net New Trips

Existing Uses to be Redeveloped in Phase 1 Project								
Mode Share			**Person Trips, by Mode**					
			AM			**PM**		
Mode	**Mode Share**	**Daily Trips**	**IN**	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Drive	80%	111	7	2	9	2	6	8
Transit	14%	19	1	0	2	1	2	2
Walk	4%	2	0	0	0	0	0	0
Bike	2%	6	0	0	0	0	1	1
TOTAL	***100%***	***138***	***8***	***3***	***11***	***3***	***8***	***11***
Vehicle Trips		**103**	**6**	**2**	**8**	**2**	**5**	**7**
Phase 1 Project Net New Trips								
Mode Share			**Person Trips, by Mode**					
			AM			**PM**		
Mode	**Daily Mode Share**	**Daily Trips**	**IN**	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Drive	26%	3,236	272	127	405	147	250	391
Transit	35%	4,333	350	178	531	173	303	491
Walk	26%	3,148	206	128	343	149	166	320

Table 7-13 Phase 1 Project Net New Trips (Continued)

Phase 1 Project Net New Trips								
Mode Share		**Person Trips, by Mode**						
Mode	**Daily Mode Share**	**Daily Trips**	**AM**			**PM**		
			IN	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Bike	13%	1,569	103	64	171	74	83	160
TOTAL	***100%***	***12,287***	***930***	***498***	***1,450***	***544***	***803***	***1,361***
Vehicle Trips		**2,334**	**215**	**89**	**304**	**98**	**204**	**301**

7.5.2.3 Phase 1 Project Trip Distribution

To estimate the vehicle trips added to each study area intersection during peak hours by the Phase 1 Project, net new Phase 1 Project vehicle trips were first assigned to the vehicular entrances at Buildings A1/A3, Buildings B1/B2, Building B3, and at Block C (as depicted in Figure 7-12). The vehicle trips were assigned based on the share of each land use accessed by each Phase 1 Site entrance.

Vehicle trips were then assigned to different local access points to the Phase 1 Site, using zone-based origin/destination data identified in the South Boston Seaport Strategic Transit Plan. This data indicates the percentage of motorists driving to and from the South Boston Waterfront from and to other origin zones in Greater Boston. Use of this methodology instead of relying upon traditional BTD standards was confirmed by the Planning Department during a December 19, 2025 coordination session.

Vehicle trips were then distributed to study area intersection approaches based on which intersections they would need to pass through to reach the Phase 1 Site from each origin zone. In cases where there were multiple equally direct routes to the Phase 1 Site from an origin zone, it was assumed that motorists would split evenly between routes. The percentage distribution of trips from/to each local access point is shown in Table 7-14 below.

Table 7-14 Phase 1 Site Vehicle Trip Distribution by Local Access Point

Local Access Point	% Total
I-93 South	26%
I-93 North	26%
I-90 West	23%
South Boston Bypass	10%
I-90 East	5%
Broadway/West 4th	4%

Table 7-14 Phase 1 Site Vehicle Trip Distribution by Local Access Point (Continued)

Local Access Point	% Total
Summer St	2%
Morrissey Blvd	2%
Boston Rd	2%
Flynn Marine Park	<1%
East 1st St	<1%

Phase 1 Build Condition volumes are shown on the study area in Figure 7-16.

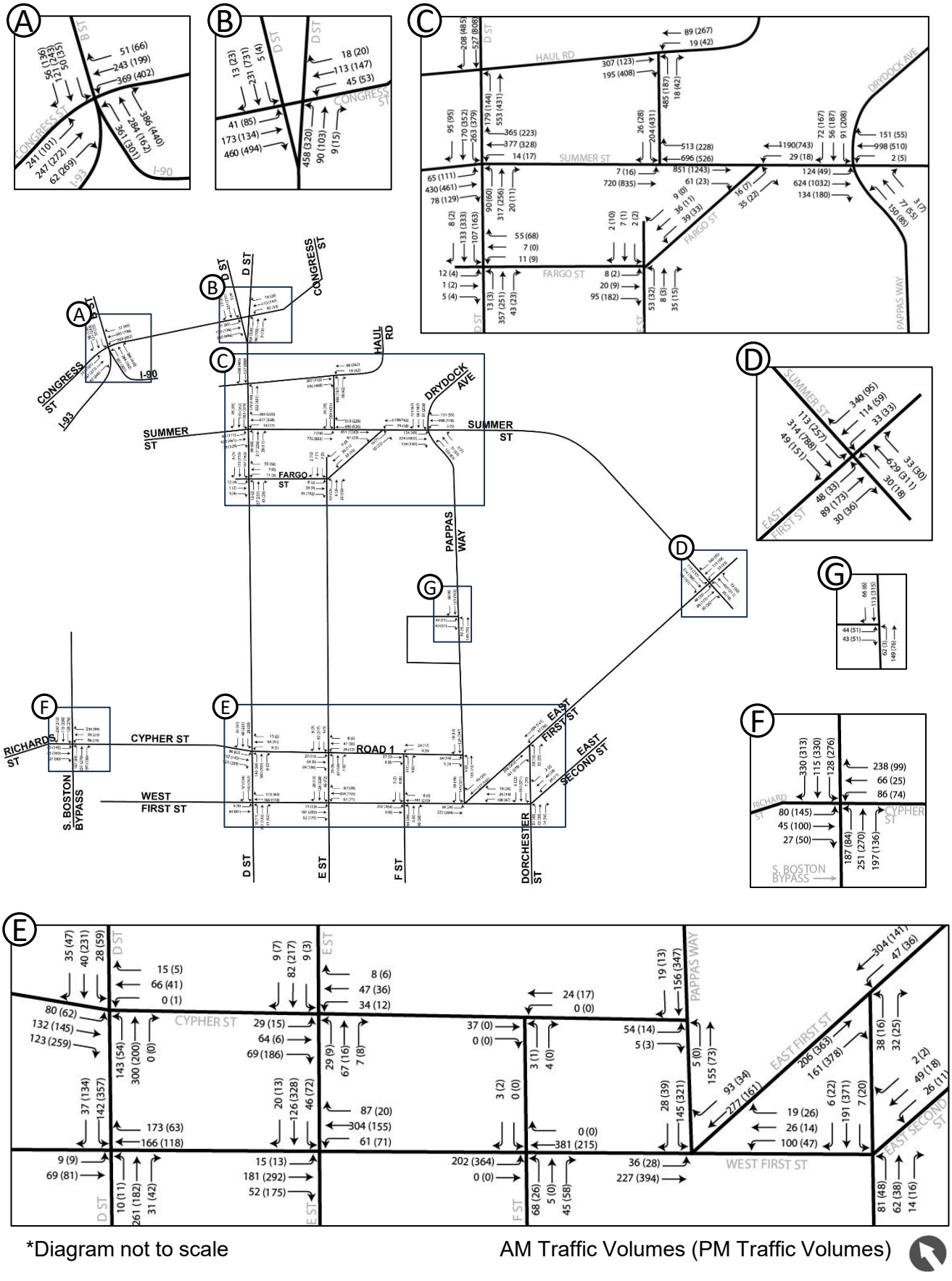


*Diagram not to scale

AM Traffic Volumes (PM Traffic Volumes)

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-16

Phase 1 Condition Traffic Volumes

7.5.3 Phase 1 Project Freight Access

7.5.3.1 Phase 1 Truck Trip Generation

Net new truck trip generation to and from the Phase 1 Project was estimated using a methodology similar to the net new vehicle trip methodology. Estimated daily, a.m. peak hour, and p.m. peak hour existing truck trips across the Master Plan Site were found using the same methodologies cited in Section 7.5.2.1 and Appendix E. This calculation estimates 226 daily, 47 a.m. peak hour, and 43 p.m. peak hour truck trips across the Master Plan Site (Table 7-15).

The majority (94%) of truck trips on the existing Master Plan Site are estimated to be generated by the warehouse land uses. As such, displacement of these trips was based on share of the warehouse area on the Phase 1 Site (about 31%) that will be redeveloped, as shown in Table 7-15.

Table 7-15 Existing Truck Trips for Master Plan Site and by Phase 1 Site to be Redeveloped

Site Extent	Daily Trips	AM Peak	PM Peak
Existing – Master Plan	226 trips	19 trips *(6-hour period divided by 6)*	19 trips *(6-hour period divided by 6)*
Existing – Phase 1 Only	64 trips	5 trips *(6-hour period divided by 6)*	5 trips *(6-hour period divided by 6)*

Future truck trip generation was estimated using the ITE Trip Generation Manual, 12th Edition. Table 7-16 below shows the application of ITE truck trip rates for the Phase 1 Project. Only land uses for which the ITE Manual projects truck trips were included in the projections below. Truck trips associated with the residential uses are expected to be primarily service and delivery trips made by typical service/delivery vehicles or SUVs.

Table 7-16 Phase 1 Project Proposed Truck Trips

Land Use Details				ITE Truck Trips						
Use	LUC	Size	Units	Daily	AM			PM		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Office (Trucks)	*710*	*567,000*	*SF*	*32*	*3*	*3*	*6*	*2*	*4*	*6*
Grocery Store (Trucks)	*850*	*20,000*	*SF*	*11*	*1*	*1*	*1*	*0*	*0*	*0*
Retail (under 40K) (Trucks)	*822*	*11,500*	*SF*	1	0	0	*0*	0	0	*0*
Restaurant (Trucks)	*932*	*22,500*	*SF*	*12*	*1*	*1*	*2*	*0*	*0*	*0*
Trucks Total				***56***	***4***	***4***	***9***	***2***	***4***	***7***

Truck activity projections associated with the Phase 1 Project are shown in Table 7-17. A decrease in daily truck trips is associated with the Phase 1 Project, with minor increases in the a.m. peak hour and p.m. peak hour as the Phase 1 Site transitions from industrial to residential and commercial use.

Table 7-17 Phase 1 Project Net New Truck Trips

Project	Condition	Daily	a.m. Peak Hour	p.m. Peak Hour
Phase 1	Existing	64 trips	7 trips	3 trips
	Proposed	56 trips	9 trips	7 trips
	Net New Truck Trips	**-8 trips**	**+2 trips**	**+4 trips**

7.5.3.2 Phase 1 Loading and Service Accommodations

Five loading entrances will be provided on the Phase 1 Site:

- At the surface level of Building B3, serving the grocery use, accessible from E Street.
- At the surface level of Buildings A1 and A2, serving the ground floor retail and providing for residential move-ins, accessible from Road 1.
- At the surface level of Buildings B1 and B2, serving the ground floor retail and providing for residential move-ins, accessible from Road 1.
- At the surface level of Building C1, serving the commercial research laboratory, wellness/fitness, and restaurant uses, accessible from Road C.
- At the surface level of Building C2, serving the commercial research laboratory and restaurant uses, accessible from Road C.

The remaining industrial uses and freight activity within the Master Plan Site will be maintained until those parcels are developed in the future. Access to and from the Master Plan Site will occur primarily via the existing driveway from E Street, with secondary access to and from Road 1, Road A, and Road C via existing connections.

7.5.3.3 Cypher Street/Road 1 Alignment

Cypher Street, recently extended through from D Street to E Street, connects the South Boston Bypass Road with E Street to define a truck route critical to regional freight access. Given the present and future orientation of this route to serve freight and heavy truck traffic, Road 1 is intentionally misaligned from Cypher Street, providing primary vehicular access to Block A and Block B. The centerline of Road 1 will be offset from the centerline of Cypher Street by

approximately 60 to 65 feet. This offset allows for improved definition of E Street and Road 1 for vehicle traffic to and from Cypher Street by:

- Discouraging truck movements into the Phase 1 Site to and from Cypher Street. By discouraging truck movements into the Phase 1 Site, E Street will continue to serve as the primary freight corridor given its adjacent, logistics-heavy land uses and wider travel way (approximately 40 feet). Pappas Way will better function as a multimodal corridor without the influence of heavy vehicles given the presence of open space along the Reserved Channel and narrower travel way (approximately 28 feet).

- Discouraging truck movements through the Phase 1 Site and along East First Street towards the Conley Container Terminal. Truck movements seeking access between Cypher Street and the Conley Container Terminal are better directed to use E Street, Summer Street, and the Butler Freight Corridor when traveling from west to east with the Cypher Street/Road 1 offset in place.

- Better meeting the goals of the Master Plan Project which proposes to close off each end of Pappas Way (to the south with East First Street/West First Street and to the north with Summer Street/Pappas Way/Drydock Avenue) and extend F Street to the north and south to connect with Summer Street/Pappas Way/Drydock Avenue as a multimodal corridor, with priority for a future north/south transit service.

The City has raised the need for the Cypher Street/E Street/Road 1 intersection to allow for 40- or 60-foot (articulated) bus movements between Cypher Street and Road 1 in a future condition where a transit service may operate in the vicinity of the Phase 1 Project and Master Plan Project. This future service could support the filling in of existing gaps in the transit network between the Phase 1 Site and Broadway Station to the west, and Summer Street and RLFMP to the north. The future F Street corridor, once fully completed, could accommodate this type of service with its envisioned provisions for transit.

The offset intersection in the Phase 1 Condition will accommodate simultaneous 40- and 60-foot bus movements. An open space is located on the northwest corner of Block B which would allow for a future realignment of the intersection should a future transit service require such a modification.

7.5.3.4 Site Environ Freight Impacts

The Phase 1 Project is positioned in a key location in the regional freight network. The E Street and Summer Street corridors are relied upon by trucks daily to transport goods to and from the Conley Container Terminal in South Boston and to marine industrial uses associated with the RLFMP and beyond. The study area intersections of Cypher Street/E Street/Road 1, Summer Street/Pappas Way/Drydock Avenue, Summer Street/Fargo Street, Summer Street/Pumphouse Road, and Haul Road/Pumphouse Road each involve considerable freight uses to and from the regional highway network, with the D Street and Congress Street corridors also facilitating

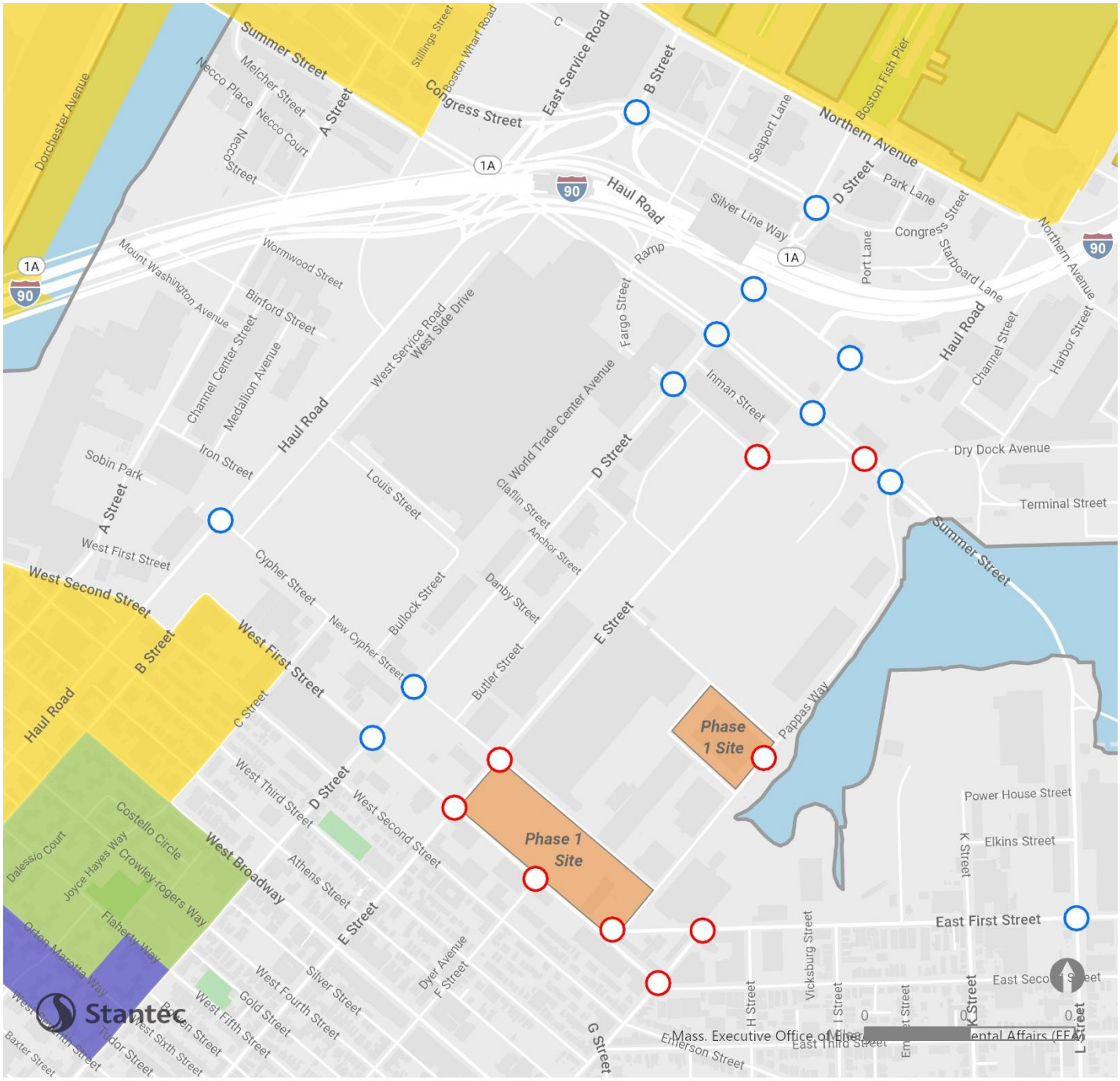
connections to the regional highway network. Vehicle traffic projected in the Phase 1 Build and Master Plan Full Build conditions will travel within these same intersections and along the same corridors. Additionally, remaining land uses within the Master Plan Site will continue to be reliant on local roadway infrastructure.

As shown in Table 7-17, a reduction in the number of daily truck trips in the Phase 1 Build condition is projected, based on traffic count data collected at the Master Plan Site and given projections of truck activity associated with the Phase 1 Project with the Phase 1 Site's transition from industrial to residential and commercial uses. As such, existing maritime and other industrial uses at the Conley Container Terminal and RLFMP will not be adversely affected by the Phase 1 Project, both through:

- The absence of anticipated net new truck trips associated with the Phase 1 Project; and
- The absence of operational changes to the roadway network outside of the Phase 1 Site, which currently cannot be bisected north of West First Street.

As discussed in Section 7.5.3, the Phase 1 Site is designed to encourage trucks to use E Street for east/west travel in the vicinity of the Phase 1 Site via Cypher Street. Discouraging travel through the Phase 1 Site via the offset of Road 1 with Cypher Street is anticipated to limit truck usage of East First Street in the South Boston neighborhood.

Outside of Environmental Justice block groups within the South Boston Bypass Road corridor, no nearby block groups are expected to be adversely impacted by truck traffic introduced by the Phase 1 Project, as daily truck traffic is anticipated to be less than the Existing Condition (see Figure 7-17). Trips are expected to use the regional highway network and not travel on local roadways beyond the study area.



Study Intersections

- Unsignalized
- Signalized

Environmental Justice Populations 2020

- Minority
- Minority and Income
- Minority, Income and English isolation

Reserved Channel Development Boston, MA

Epsilon Associates Inc.

Source: Stantec

Figure 7-17

Environmental Justice Populations in Vicinity of Phase 1 Site

7.6 Master Plan

7.6.1 Master Plan Site Plan

As described in Section 1.2.4.1, the Master Plan Project consists of the demolition of approximately 900,450 sf of existing warehouse distribution, office, and building material uses across ten sites (encompassing demolition proposed in the Phase 1 Project) and the construction of 24 buildings totaling approximately 5,998,000 sf of gross floor area.

Figure 1-4 depicts the Master Plan Site. Blocks A to H will be bounded to the east by Pappas Way, to the north by Anchor Street, to the west by E Street, and to the south by West First Street, and include three east/west streets (Road 1, Road 2, and Road 3), and one north/south street (F Street). Blocks I to J will be bounded to the east by Pappas Way, to the north by Fargo Street (proposed to connect in the long-term condition to F Street and E Street), to the west by the newly-constructed Road 5, and to the south by Anchor Street. A new Road 4 will be positioned between Block I and Block J, proposed to connect to F Street. Block K is proposed to be accessed from Summer Street.

Figure 7-18 displays the Master Plan Access Diagram.

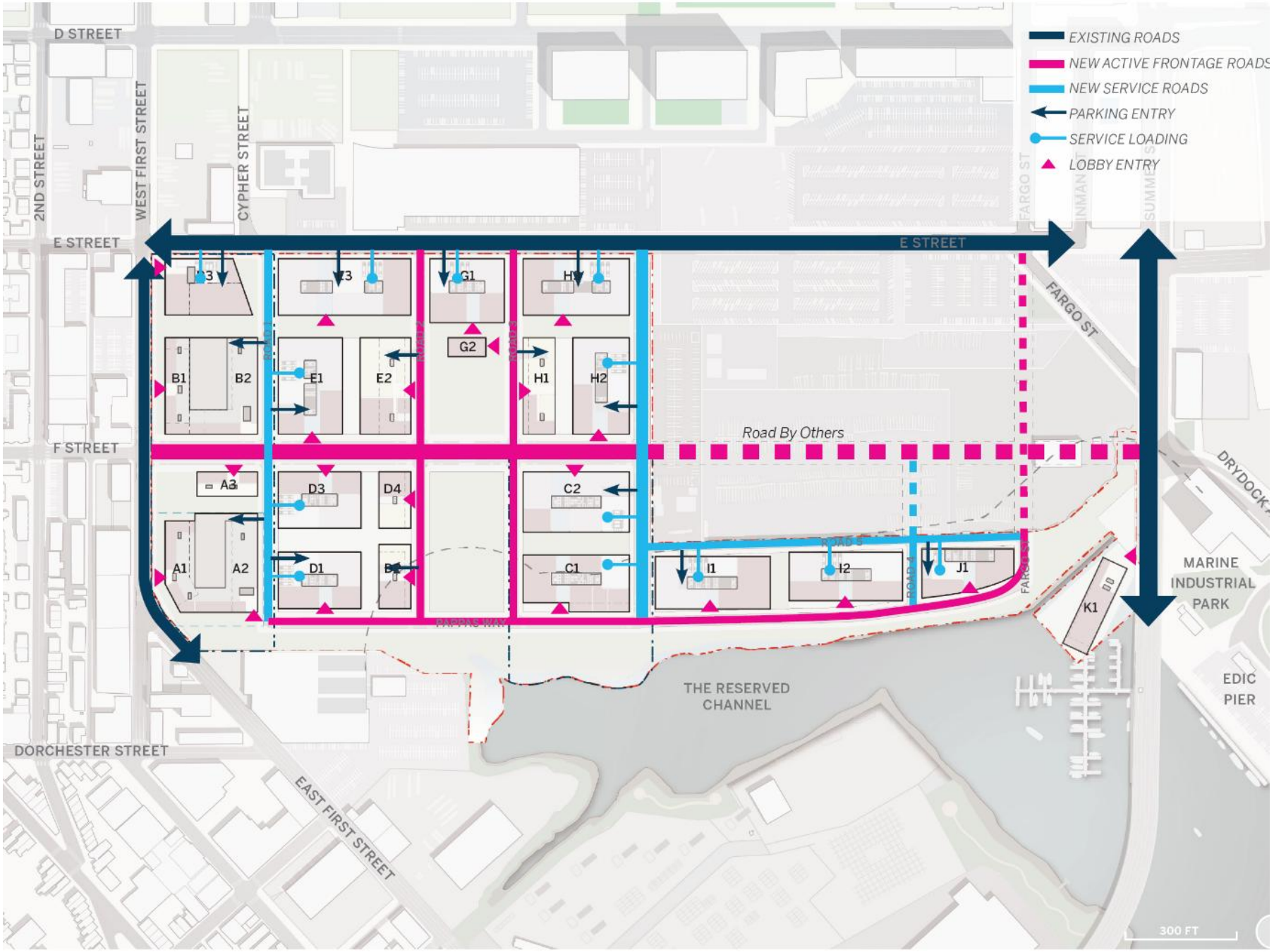
7.6.1.1 Site Access and Vehicle Circulation

The Master Plan Site will build upon the Phase 1 Site design to facilitate a series of east/west streets between Pappas Way and E Street, split by F Street which would connect to Summer Street in the long-term condition. The realization of the Full Build Condition would fill in the existing one-half mile gap between West First Street and Summer Street with smaller blocks and abundant streetscape activity, where the Master Plan Site today is largely a void. The historic disconnect between the traditional South Boston neighborhood and the South Boston Waterfront is proposed to be knitted together in the vicinity of the Reserved Channel through the fulfillment of the Master Plan Project.

As with Phase 1, vehicle access will be facilitated by access points along the east/west street network as well as along E Street:

- Much like Road 1 in the Phase 1 Condition, Anchor Street along the Master Plan Site's northwestern boundary will best facilitate east/west vehicular access, including service uses associated with adjacent buildings, between E Street and Pappas Way.

- Road 2 and Road 3 are each proposed to be designed as active frontage roads, supporting robust walking and bicycling conditions and facilitating both lobby access to adjacent buildings as well as interior access to the Master Plan Project's open space, with select building entries.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-18
Master Plan Site Access Diagram

- F Street will be extended to Anchor Street, and in the long-term vision, to the intersection of Summer Street/Drydock Avenue to provide a continuous link through the Master Plan Site between South Boston, Summer Street, and the RLFMP; realization of a Haul Road/Drydock Avenue connector could further expand the street grid connection towards Northern Avenue. F Street is proposed as an active frontage road with robust walking and bicycling accommodations as well as a wide, approximately 100-foot right-of-way to support separated bicycle lanes in each direction and potential for future transit accommodation. No vehicular access to on-site parking is proposed from F Street in the Master Plan Condition.

7.6.1.2 Site Access and Vehicle Circulation

The Master Plan Site will build upon the Phase 1 Site design to facilitate a series of east/west streets between Pappas Way and E Street, split by F Street which would connect to Summer Street in the long-term condition. The realization of the Full Build Condition would fill in the existing one-half mile gap between West First Street and Summer Street with smaller blocks and abundant streetscape activity, where the Master Plan Site today is largely a void. The historic disconnect between the traditional South Boston neighborhood and the South Boston Waterfront is proposed to be knitted together in the vicinity of the Reserved Channel through the fulfillment of the Master Plan Project.

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- Pappas Way is proposed to be discontinued south of Road 1 and north of Fargo Street (proposed to be extended eastwards from E Street in the long-term condition) in order to direct north/south travel between South Boston and the South Boston Waterfront to the F Street corridor. Pappas Way is proposed to be reconfigured from its present condition to facilitate sidewalks with a landscaped buffer on each side of the roadway, a transition to waterfront open space along the Reserved Channel, and on-street parking along its length. Building entrances will be oriented along Pappas Way as well, with no vehicular entry points proposed; Block I and Block J are each proposed for vehicle and service access via Road 5.

- This design proposal is intended to convert Pappas Way from a primary north/south connector between South Boston and the South Boston Waterfront in its current condition to a more recreational street with limited traffic, with sustained connections between the Summer Street and East First Street corridors for pedestrians and bicyclists.

- E Street is proposed to accommodate vehicle parking and service entries as it continues to accommodate heavy vehicle access between Cypher Street and Summer Street.

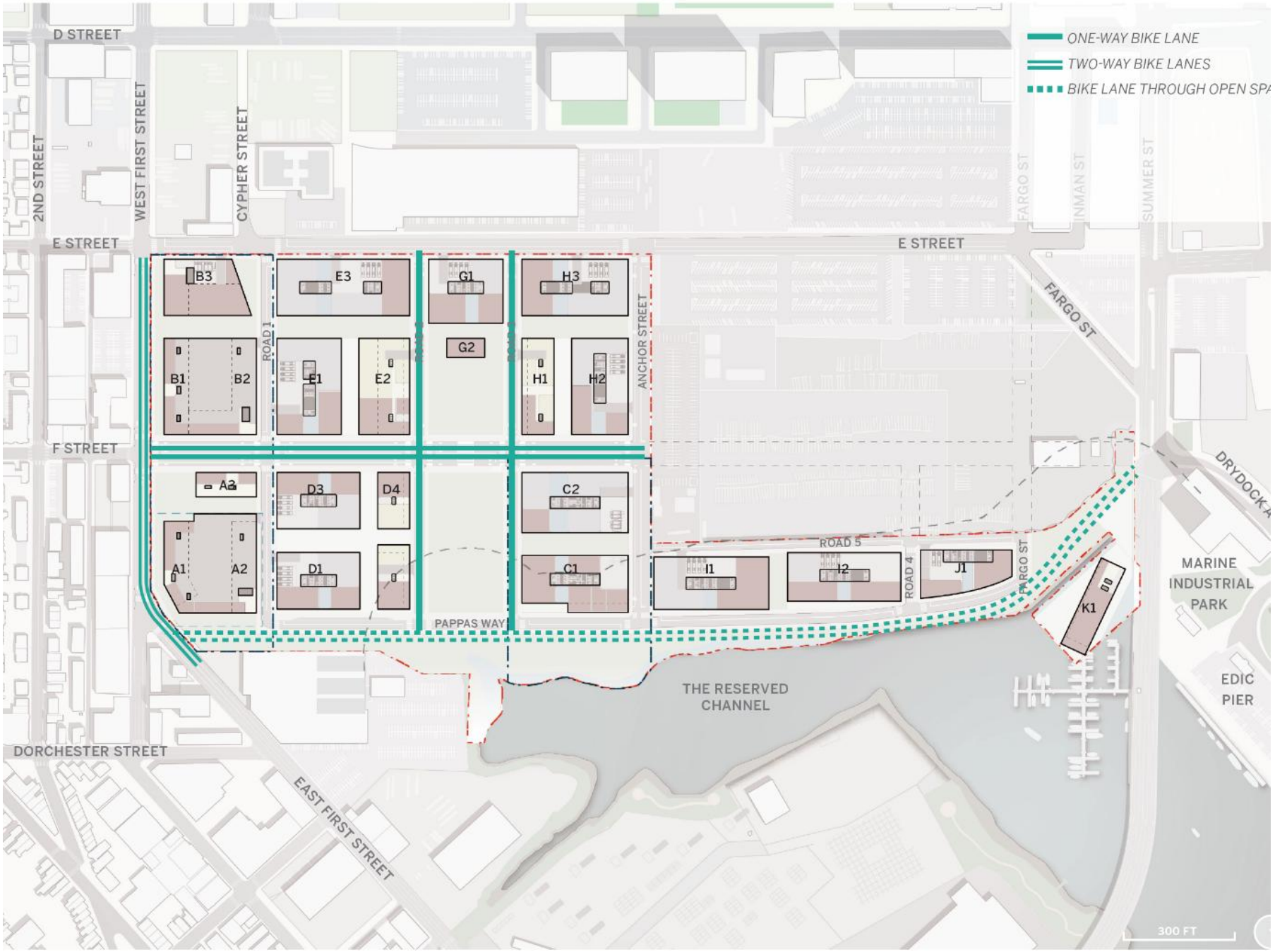
The Master Plan Project access diagram is depicted in Figure 7-18, with bicycle routes depicted in Figure 7-19. The orientation of building frontages, shown in Figure 7-20, will support the envisioned street grid with active ground floor uses facing the primary commercial corridors of F Street, Road 2, and Road 3, as well as to West First Street in the Phase 1 Condition.

7.6.1.3 Vehicle Parking

Specific parking needs by each block and building will be determined as each proceeds into design. The Master Plan Project will continue the parking principles put forward in the Phase 1 Project, subject to refinement and revision given the findings borne by monitoring of parking usage at the Phase 1 Site. The Proponent will comply with the City's EV policy and Massport Sustainability Design Guidelines, as applicable, for any new parking to be added as part of the Master Plan Project.

7.6.1.4 Bicycle Parking

Bicycle facilities in the Master Plan Condition will be provided in accordance with BTD's Bike Parking Guidelines for Fee Parcels, and in compliance with LEED requirements, built out by building and committed by phase. This will include the provision of short-term and long-term bicycle parking in convenient locations for all user types for different land uses associated with the Master Plan Project. The anticipated bicycle parking allocation will be determined as each building and/or block proceeds into design.

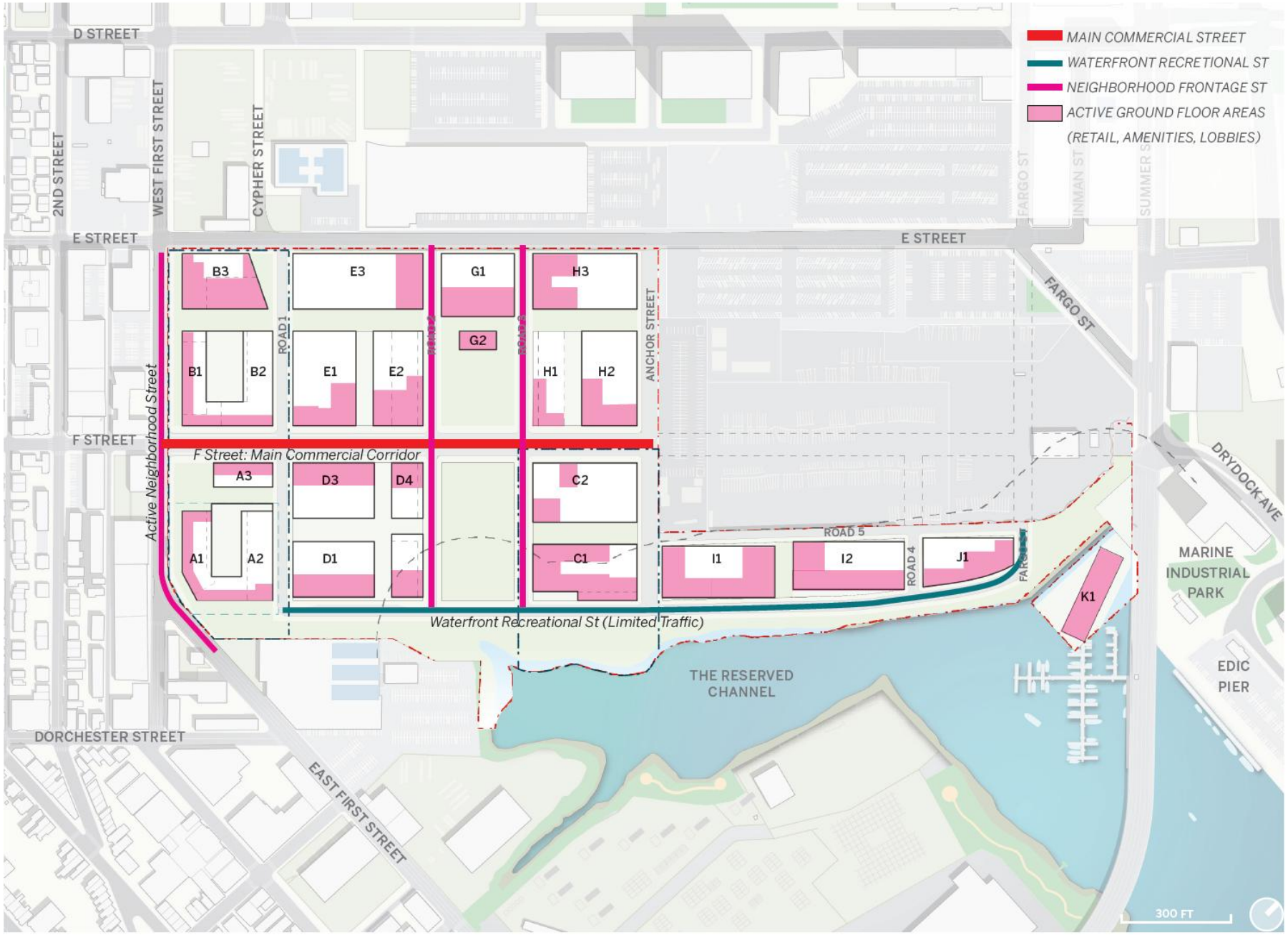


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Source: SOM

Figure 7-19
Master Plan Site Bicycle Access



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Epsilon ASSOCIATES INC.

Source: SOM

Figure 7-20
Master Plan Site Frontages

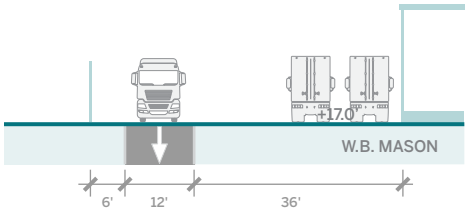
7.6.1.5 Street Network Improvements

All rights-of-way will be designed taking into consideration the Boston Complete Streets guidelines and ultimately be subject to Massport approval. New sidewalks will be constructed adjacent to the Phase 1 Site in accordance with the requirements of the ADA/AAB. This will include reconstruction and widening of the adjacent sidewalks, the installation of new, accessible ramps, improvements to street lighting where necessary, planting of street trees, and providing bicycle storage racks. All internal streets will be owned and maintained by Massport.

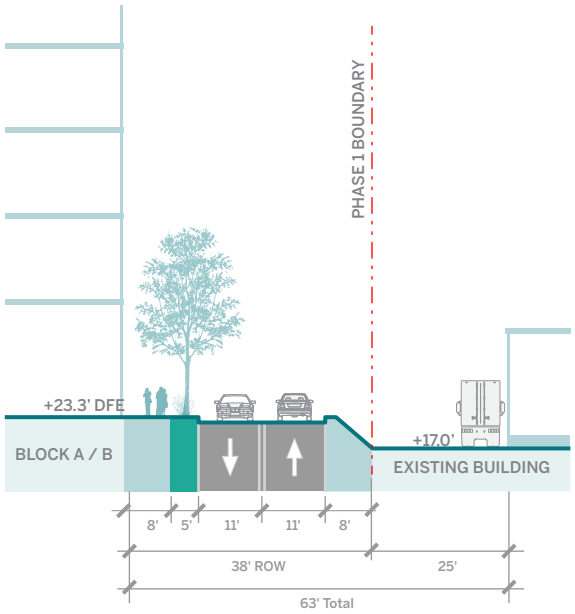
Figure 7-21 through Figure 7-25 detail anticipated cross-sections for the Master Plan Project, compared to existing conditions. Streetscape benefits of the Master Plan Project are anticipated to include:

- Provision of bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.
- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern and northern frontages of Pappas Way.
- Provision of a single bicycle lane adjacent to the central open space, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along Road 2 and Road 3.
- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern and northern frontages of Road 1 (expanded in the Master Plan Condition to accommodate the northern frontage), Road 4, and Fargo Street. Street trees and pedestrian space will be provided along the eastern frontage of Road 5, with street trees along each side and pedestrian space along the southern frontage of Anchor Street.
- Provision of street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage.
- Creation of open space between East First Street/West First Street and Road 1, which has been requested by the community, with F Street serving as the primary north/south vehicle connection through the Master Plan Site between Summer Street and West First Street.

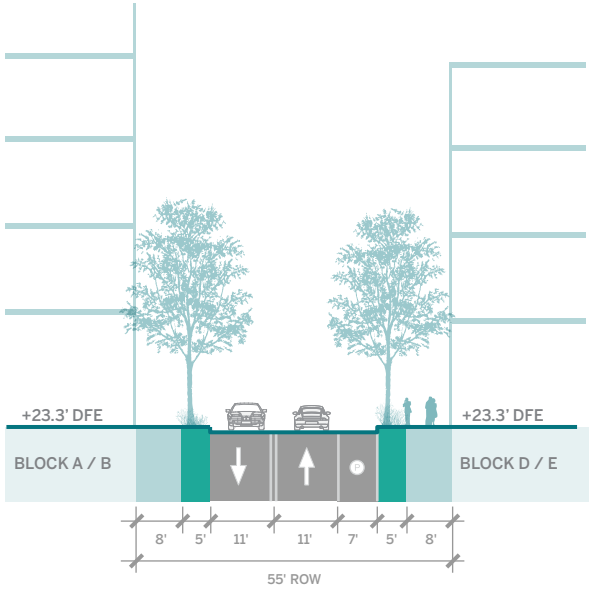
The provision of vehicle entrances along Road 1, Anchor Street, and Road 5 are meant to preserve the Road 2, Road 3, Pappas Way and F Street frontages for non-vehicular access, as the Master Plan Project site design demonstrates. This design intention is carried through from the Phase 1 Project.



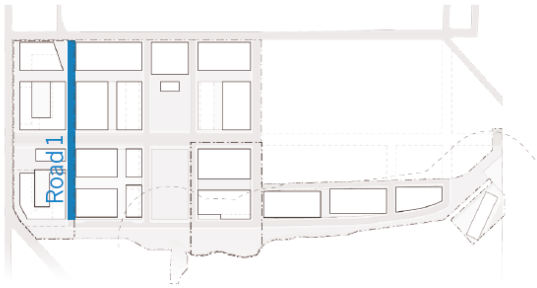
Existing Easement at Road 1 Section



Road 1 Phase 1 Interim Section



Road 1 Full Built Section



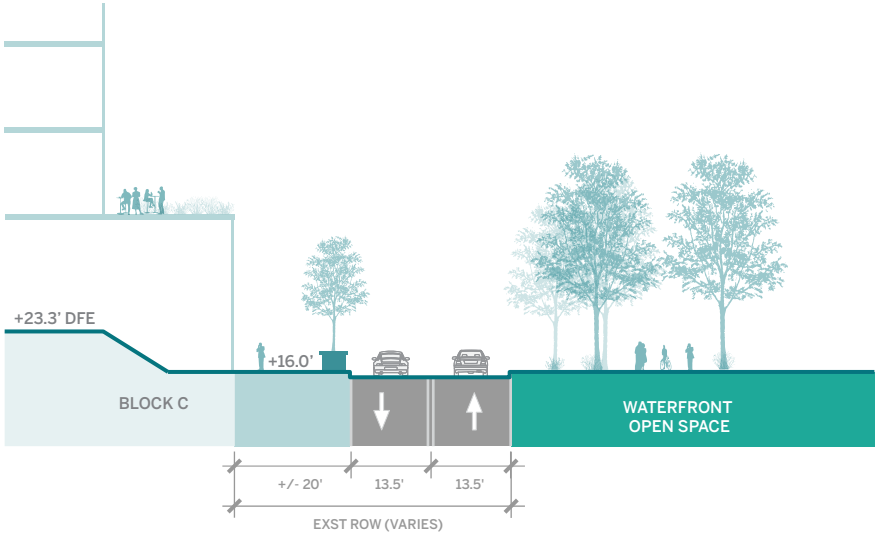
Key Plan

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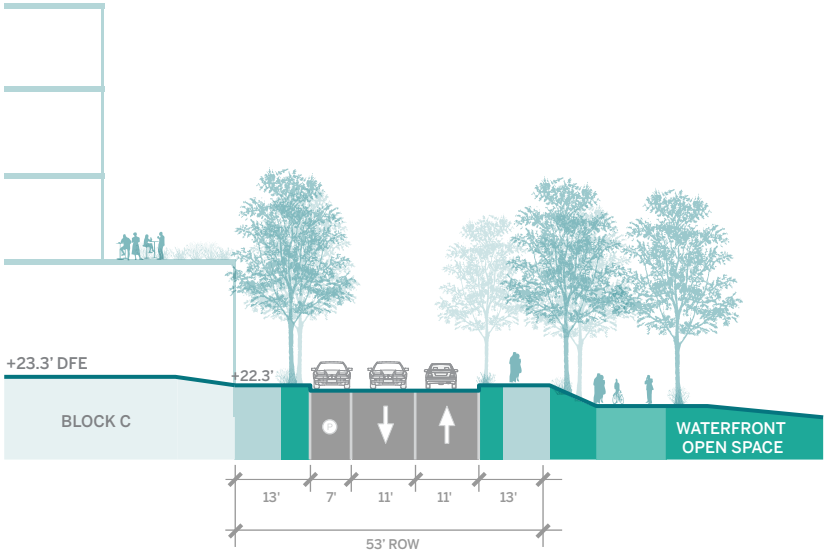
Epsilon ASSOCIATES INC. **Source: SOM**

Figure 7-21

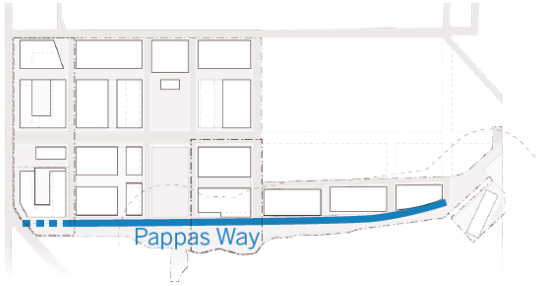
Phase 1 and Full Build Proposed Cross-Section



Pappas Way Phase 1 Interim Section
(Through Block C)



Pappas Way Full Build Section
(Through Block C)

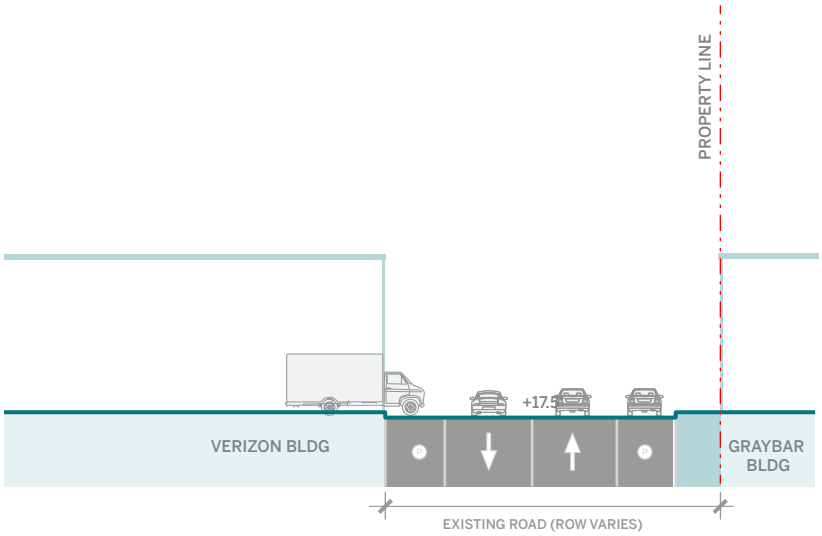


Key Plan

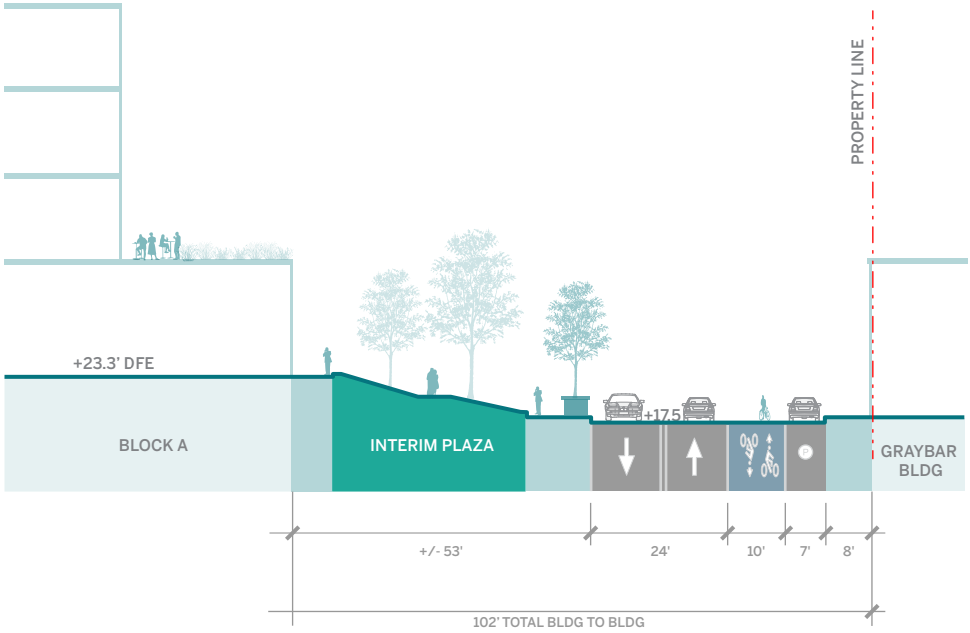
Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

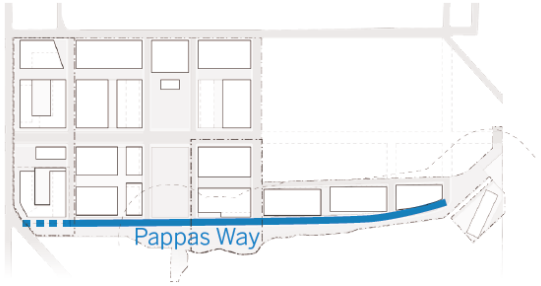
Figure 7-22
Phase 1 and Full Build Proposed Cross-Section



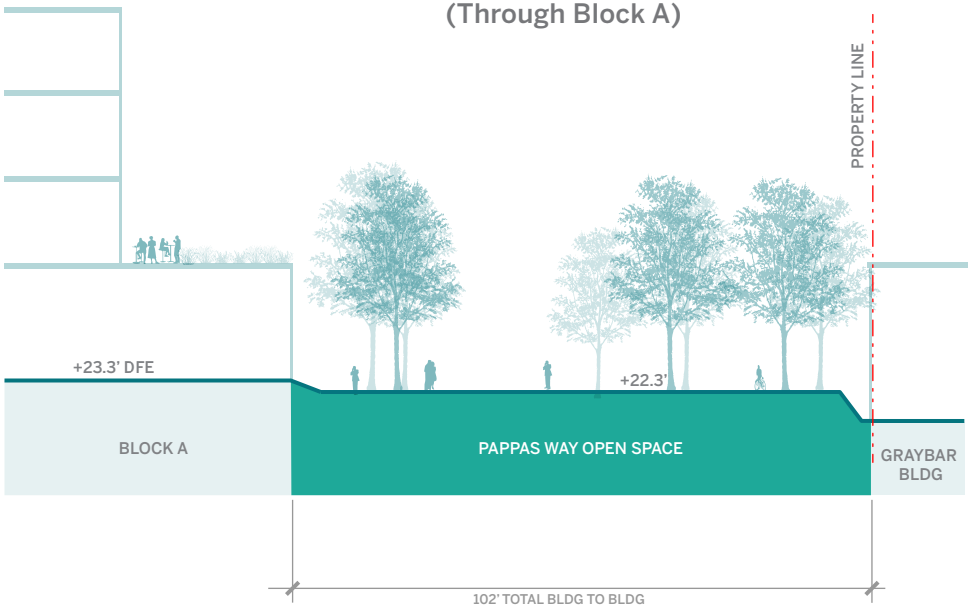
Pappas Way Existing Section (Near West First St)



Pappas Way Phase 1 Interim Section (Through Block A)



Key Plan



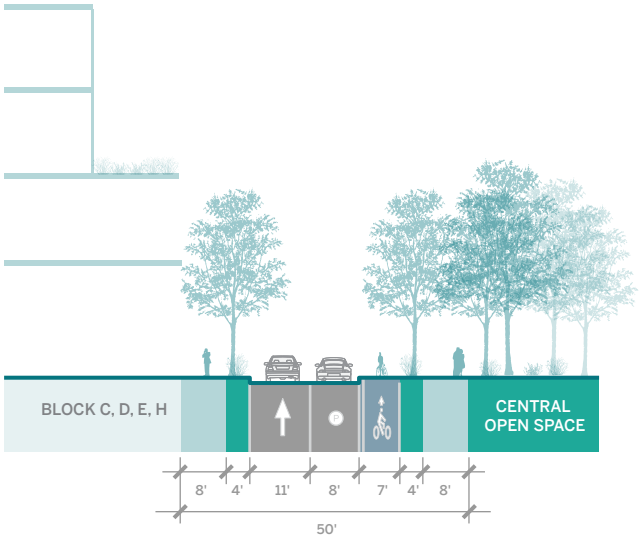
Pappas Way Full Build Open Space Section (Through Block A)

Reserved Channel Development Boston, Massachusetts

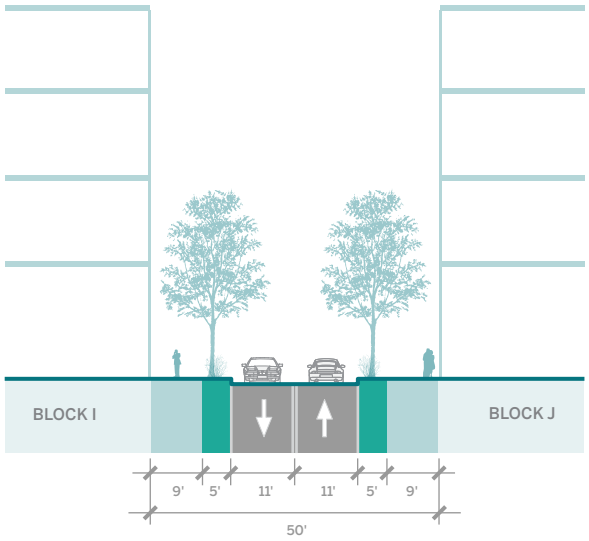
Epsilon ASSOCIATES INC. **Source: SOM**

Figure 7-23

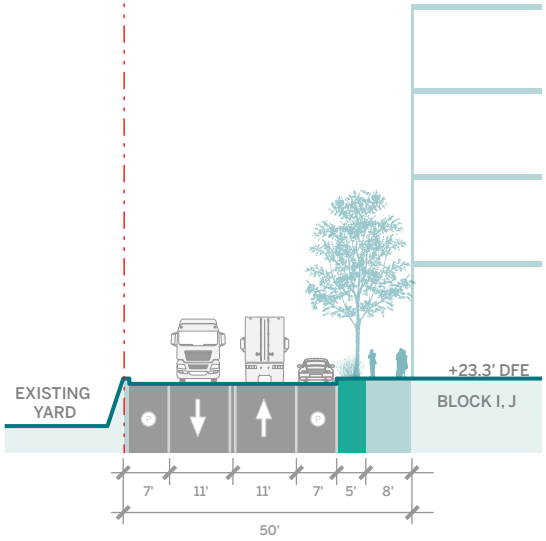
Interim and Full Build Proposed Cross-Sections



Road 2, 3 Section



Road 4, Fargo Street Section



Road 5 Section



Key Plan

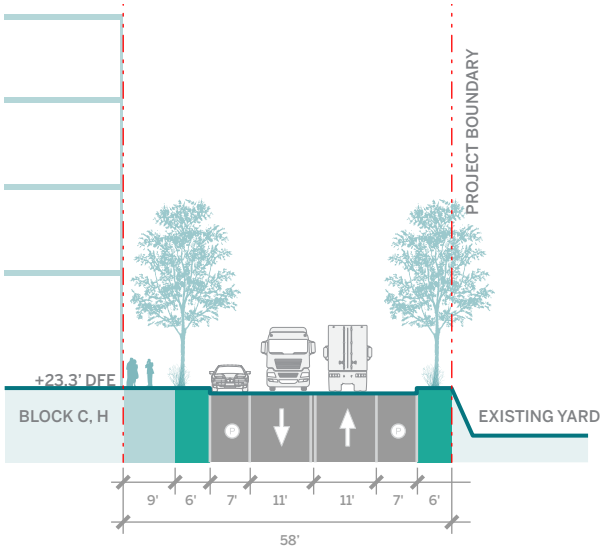
Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

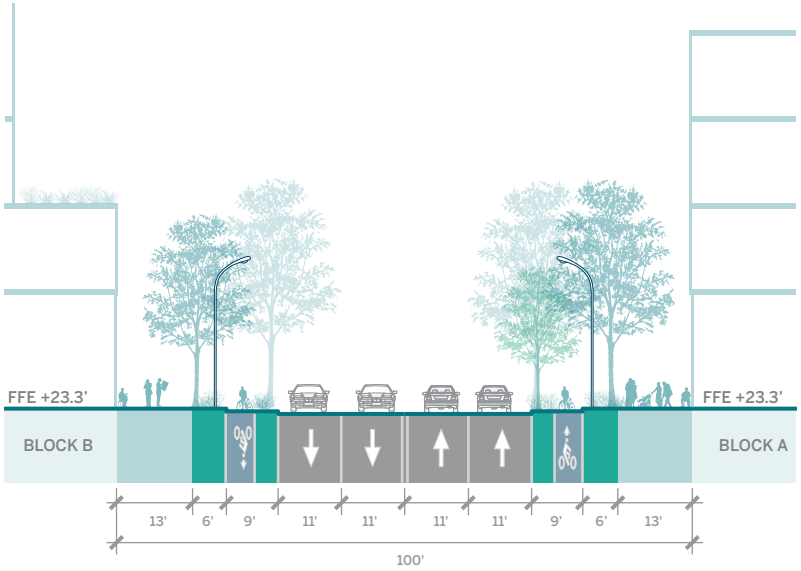
Source: SOM

Figure 7-24

Master Plan Proposed Cross-Sections



Anchor Street Section



F Street Section



Key Plan

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 7-25

Master Plan Proposed Cross-Sections

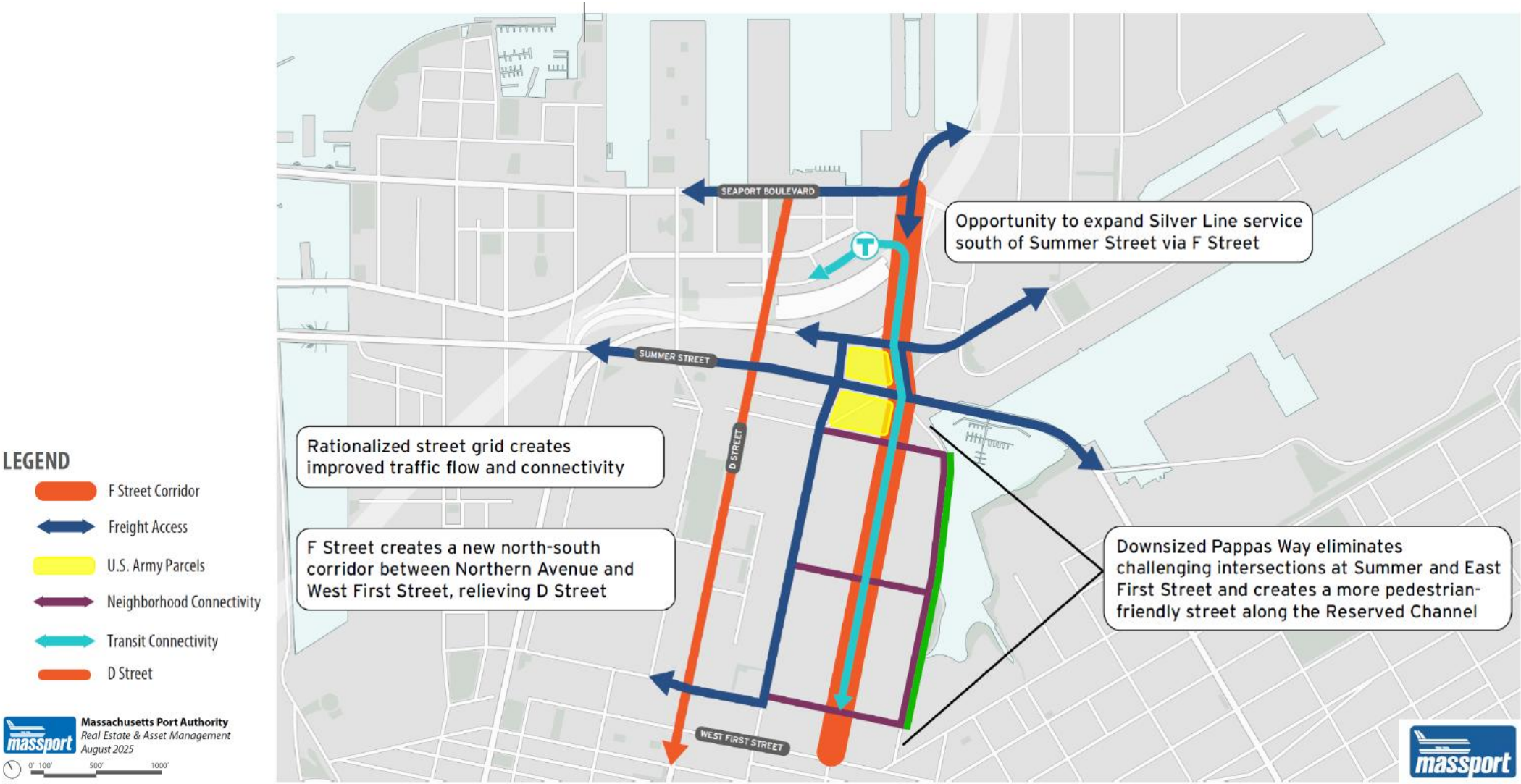
7.6.1.6 F Street Extension

As previously discussed, the extension of F Street, north and east of Anchor Street, towards Summer Street is under study by Massport. Massport envisions that this regional level solution could deliver enhanced access benefits to the Master Plan Site, the Raymond L. Flynn Marine Park, and other commercial and industrial uses in this underserved area of the South Boston Waterfront. An extended F Street between West First Street and Summer Street, and from Summer Street to Northern Avenue, as shown in Figure 7-26, would:

- Create a new north/south corridor between West First Street and Summer Street, with potential northerly expansion to Northern Avenue, relieving pressure on the D Street corridor for north/south travel.
- Serve as the multimodal spine for the long-term redevelopment of the Master Plan Site.
- Facilitate the opportunity to change the character of Pappas Way to create a more reduced speed and pedestrian friendly street along the Reserved Channel.
- Improve intersection operations along Summer Street by extending E Street, connecting F Street, and terminating the Fargo Street and Pappas Way intersections.
- Improve the intersection with East First Street/West First Street by eliminating the Pappas Way approach to the intersection.
- Unlock opportunity to better connect the Silver Line service to the area south of Summer Street and east of E Street, or other transit links, via F Street.
- Result in a more rationalized urban street grid that improves overall traffic flow and connectivity.

Phased implementation of the planned street network by the Proponent, first to Road 1 and later to Anchor Street as part of the Master Plan, is laid out to be compatible with the longer-term opportunity envisioned by Massport to extend F Street to the north.

The final design and potential timing of an F Street extension from Anchor Street to Summer Street, its intersection with Summer Street, and the opportunity it unlocks for improvements to Pappas Way, will be determined through Massport's on-going planning efforts.



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: Massport

Figure 7-26

Master Plan Site Vision For F Street Connectivity

7.6.1.7 Pappas Way Vehicular Closure

Pappas Way is proposed to be discontinued between East First Street/West First Street and the proposed Road 1 in the Master Plan Site, creating a new open space; reconfiguration and alignment through Fargo Street, south of Summer Street, will transform Pappas Way into a multimodal travel corridor and waterfront open space along the Reserved Channel. As a more recreational street with limited traffic, the reimagined corridor will support multimodal travel that is separated from higher speed vehicles and free of regional truck movements.

The proposed closure will redistribute traffic flows between the South Boston neighborhood and the South Boston Waterfront. Today, traffic is directed to Pappas Way to and from the south via the two-way Dorchester Street, which connects further south to Broadway in South Boston. As alternatives to Pappas Way, the one-way directionality of F Street (towards the Master Plan Site from the south) and E Street (away from the Master Plan Site to the south) impact the viability of these streets to serve north/south traffic between the South Boston neighborhood and the South Boston Waterfront, along with the present terminus of F Street at West First Street and the disconnection of E Street from Summer Street.

F Street is designed in the Master Plan Condition to extend the length of the Master Plan Site with Massport facilitating further connection to the existing Summer Street/Drydock Avenue. In the Master Plan Condition, F Street is intended to serve as the primary multimodal corridor serving north/south traffic between D Street and the Summer Street which will enable Pappas Way to be converted to a low-traffic corridor prioritizing recreational and open space opportunities.

Several implications for these north/south connections between the South Boston neighborhood and the South Boston Waterfront in the Master Plan Condition will be considered as part of future traffic operations analyses associated with implementation of the Master Plan program, including:

- Traffic distribution on north/south streets between Broadway and West First Street/East First Street in the South Boston neighborhood, including how one-way directionality of streets south of West First Street (F Street, E Street) and the Master Plan Site street network north of West First Street will interact to facilitate vehicle travel. This will include analysis of operational, safety, and parking impacts associated with converting from one-way to two-way travel operations.

- Design of a future Summer Street/F Street/Drydock Avenue intersection, along with any proposed roadway reconfigurations raised in documents such as the RLFMP Master Plan such as the creation of a new Haul Road/Drydock Avenue intersection. These improvements are intended to create a more integrated street grid north of the Master Plan Site, with a particular benefit for the Master Plan Site of facilitating a north/south transit corridor along F Street between Silver Line Way and West First Street.

- A future connection of E Street with Summer Street at Pumphouse Road, which would likely make the Fargo Street/Summer Street intersection obsolete and could improve traffic operations along Summer Street.

7.6.2 Master Plan Project Trip Generation – Net New Trips

A similar process as the Phase 1 Project was conducted to derive trips generated by the Master Plan Project, given the land use characteristics shown in Table 7-18. Some adjustments were made to account for the expanded project scope and extended timeline, including changing the projected person trip mode shares to match the mode share goals from Boston's GoBoston2030 transportation plan. The Master Plan Condition land uses (consistent with the approach taken for the Phase 1 Project), projected person trips, and net new person trips by mode are shown in Table 7-19 and Table 7-20.

Table 7-18 Master Plan Project Land Uses

Use	LUC	Size	Units
Office	710	4,079,000	sf
Residential (Mid-rise)	221	1,578	DU
Hotel	311	224	Rooms
Grocery Store	850	20,000	sf
Recreational Community Center	495	30,000	sf
Retail (under 40K)	822	145,500	sf
Restaurant	932	22,500	sf

Table 7-19 Master Plan Project Proposed Person Trips By Mode

Mode Share			Person Trips, by Mode					
			AM			PM		
Mode	Mode Share	Daily Trips	IN	OUT	TOTAL	IN	OUT	TOTAL
Drive	25%	11,052	1,306	332	1,638	379	1,122	1,501
Transit	45%	22,348	2,411	829	3,240	769	2,068	2,837
Walk	20%	8,751	1,039	265	1,304	300	894	1,194
Bike	10%	4,376	519	133	652	150	447	597
TOTAL	***100%***	***46,527***	***5,275***	***1,558***	***6,833***	***1,599***	***4,531***	***6,130***
Vehicle Trips		**9,123**	**1,157**	**261**	**1,418**	**298**	**1,005**	**1,303**

Table 7-20 Master Plan Project Net New Person Trips By Mode

Mode Share			Person Trips, by Mode					
			AM			PM		
Mode	Mode Share	Daily Trips	IN	OUT	TOTAL	IN	OUT	TOTAL
Drive	20%	8,936	1,188	291	1,479	326	1,028	1,355
Transit	50%	21,987	2,390	822	3,211	756	2,045	2,801
Walk	20%	8,710	1,036	264	1,300	299	891	1,190
Bike	10%	4,262	513	130	643	146	439	585
TOTAL	***100%***	***43,894***	***5,127***	***1,508***	***6,634***	***1,527***	***4,404***	***5,930***
Vehicle Trips		**7,524**	**1,062**	**231**	**1,293**	**260**	**930**	**1,190**

7.6.3 Master Plan Project Freight Access

7.6.3.1 Master Plan Truck Trip Generation

Building upon the assumptions presented for the Phase 1 Truck Trip Generation analysis, future truck trip generation was estimated using the ITE Trip Generation Manual, 12th Edition. Table 7-21 below shows the application of ITE truck trip rates for the Master Plan Project uses. Only land uses for which the ITE Manual projects truck trips were included in the projections below.

Table 7-21 Master Plan Project Proposed Truck Trips

Land Use Details				ITE Truck Trips						
Use	LUC	Size	Units	Daily	AM			PM		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Office (Truck)	*710*	*4,079,000*	*SF*	208	20	20	41	*13*	*27*	*41*
Grocery Store (Trucks)	*850*	*20,000*	*SF*	*11*	*1*	*1*	*1*	*0*	*0*	*0*
Retail (under 40K) (Truck)	*822*	*145,500*	*SF*	13	1	2	*3*	1	1	*1*
Restaurant (Truck)	*932*	*22,500*	*SF*	*12*	*1*	*1*	*2*	*0*	*0*	*0*
Trucks Total				***244***	***17***	***17***	***34***	***8***	***22***	***31***

Truck activity projections associated with the Master Plan Project are shown in Table 7-22. Small increases in truck trips are projected when comparing the Master Plan Project to the existing condition.

Table 7-22 Phase 1 Project and Master Plan Project Net New Truck Trips

Project	Condition	Daily	a.m. Peak Hour	p.m. Peak Hour
Master Plan	Existing	226 trips	25 trips	13 trips
	Proposed	244 trips	47 trips	43 trips
	Net New Truck Trips	**+18 trips**	**+22 trips**	**+30 trips**

7.6.3.2 Master Plan Loading and Service Accommodations

The Master Plan Project access diagram depicts loading entrances along Anchor Street, Road 5, and E Street, matching the long-term intention of these corridors to primarily accommodate vehicle access to the Master Plan Site. Off-street loading will be compliant with the City's off-street loading design standards for the First Street Local Industrial subdistrict of the South Boston Neighborhood District (Article 68) and accommodate vehicles sized up to WB-40.

The intention of the Master Plan Project is to locate more loading and service-intensive uses along Anchor Street, Road 5, and E Street in order to keep active frontage roads (F Street, Pappas Way, Road 2, Road 3) largely free of heavy vehicles. This approach is anticipated to limit pedestrian and bicyclist conflicts with vehicles within the Master Plan Site, and is further supported by the role of E Street as the primary heavy vehicle corridor through the study area.

The Master Plan Project's loading and service program will be influenced by the operations of the Phase 1 loading and service program, including a determination of the quantity of heavy vehicles expected to access the Master Plan Project and the number of loading bays needed on a block-by-block or building-by-building basis. This will be detailed in future filings.

7.7 Traffic Operations Analysis

7.7.1 Traffic Operations Methodology

Vehicle capacity analyses for study area intersections were conducted for the Existing Condition, No-Build Condition, and Phase 1 Build Condition to determine how roadway operations function in all scenarios. Capacity analyses for a.m. and p.m. peak hour conditions were conducted. The conditions studied are consistent with the seven-year timeframe of the Phase 1 Project and expectation that future phases will be developed beyond that timeframe. Analysis of the Master Plan Condition would require significant assumptions. For example, several potential changes to the surrounding street network are proposed to be evaluated, as discussed in Section 7.6.1.5 and Section 7.6.1.6, which could change traffic flow, and therefore capacity at area intersections. Vehicle capacity analyses are anticipated to be included in future filings. MassDOT and the Boston Planning Department have each approved this approach in pre-filing discussions for the Master Plan.

The primary output of a vehicle capacity analysis is Level of Service ("LOS"), a qualitative measure of control delay at an intersection, which provides an index to the operational qualities of an intersection or an intersection turning movement. LOS designations range from A to F, with LOS A representing the best operating conditions (free flow) and LOS F representing the worst operating conditions (forced flow). LOS D (approaching unstable flow) is typically considered acceptable in a downtown, urban environment. LOS E (unstable flow) indicates that vehicles experience significant delay and queuing, while LOS F suggests unacceptable delays for the average vehicle. LOS designation is reported differently for signalized and unsignalized intersections. Longer delays are perceived as acceptable at signalized intersections, compared to unsignalized intersections.

For signalized intersections, the analysis results in an assessment of the operations of each lane or lane group entering the intersection (e.g., southbound left turns) and includes the LOS conditions for the overall intersection. For unsignalized intersections with stop-control on only one of the directions, however, this analysis assumes the traffic on the major street is not affected by traffic on the side street(s). The LOS is only determined for left turns from the major street onto the minor street and all movements from the minor street to the main street.

Synchro 12 software was used to evaluate the LOS for the study area intersections. This analysis is based on the HCM, Seventh Edition. Table 7-23 and Table 7-24 present the LOS delay threshold criteria as defined in the HCM, Seventh Edition.

Traffic signal phasing and timings for signalized study area intersections were obtained from the City of Boston. In the process of obtaining this data, City staff indicated that all signalized intersections other than West First Street/D Street and Summer Street/L Street/East First Street operate under an adaptive signal system operated jointly between MassDOT and the City which allows for changes to signal timing in real-time to improve traffic flow.

Table 7-23 Level of Service Criteria at Signalized Intersections

Control Delay (seconds/veh)	LOS, by Volume-to-Capacity (V/C) Ratio	
	≤1.0 V/C	>1.0 V/C
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Table 7-24 Level of Service Criteria at Unsignalized Intersections

Control Delay (seconds/veh)	LOS
≤10	A
>10-15	B
>15-25	C
>25-35	D
>35-50	E
>50	F

7.7.2 Intersection Operations Analysis

7.7.2.1 Existing Condition

Table 7-25 and Figure 7-27 show each intersection's overall LOS for the Existing Condition, as described in this section.

Signalized Intersection Capacity Analysis

Several intersections operate at LOS D or better conditions in the Existing Condition. Deficient operations are present at the Summer Street/L Street/East First Street intersections in the a.m. peak hour and p.m. peak hour. The Cypher Street/D Street intersection also operates at LOS F in the a.m. peak hour, with the Congress Street/D Street and West First Street/D Street intersections operating at LOS E and LOS F, respectively, in the p.m. peak hour.

Unsignalized Intersection Capacity Analysis

All unsignalized intersections operate at LOS D or better conditions in the Existing Condition.

Table 7-25 Existing Condition Operations Analysis for Study Area Intersections

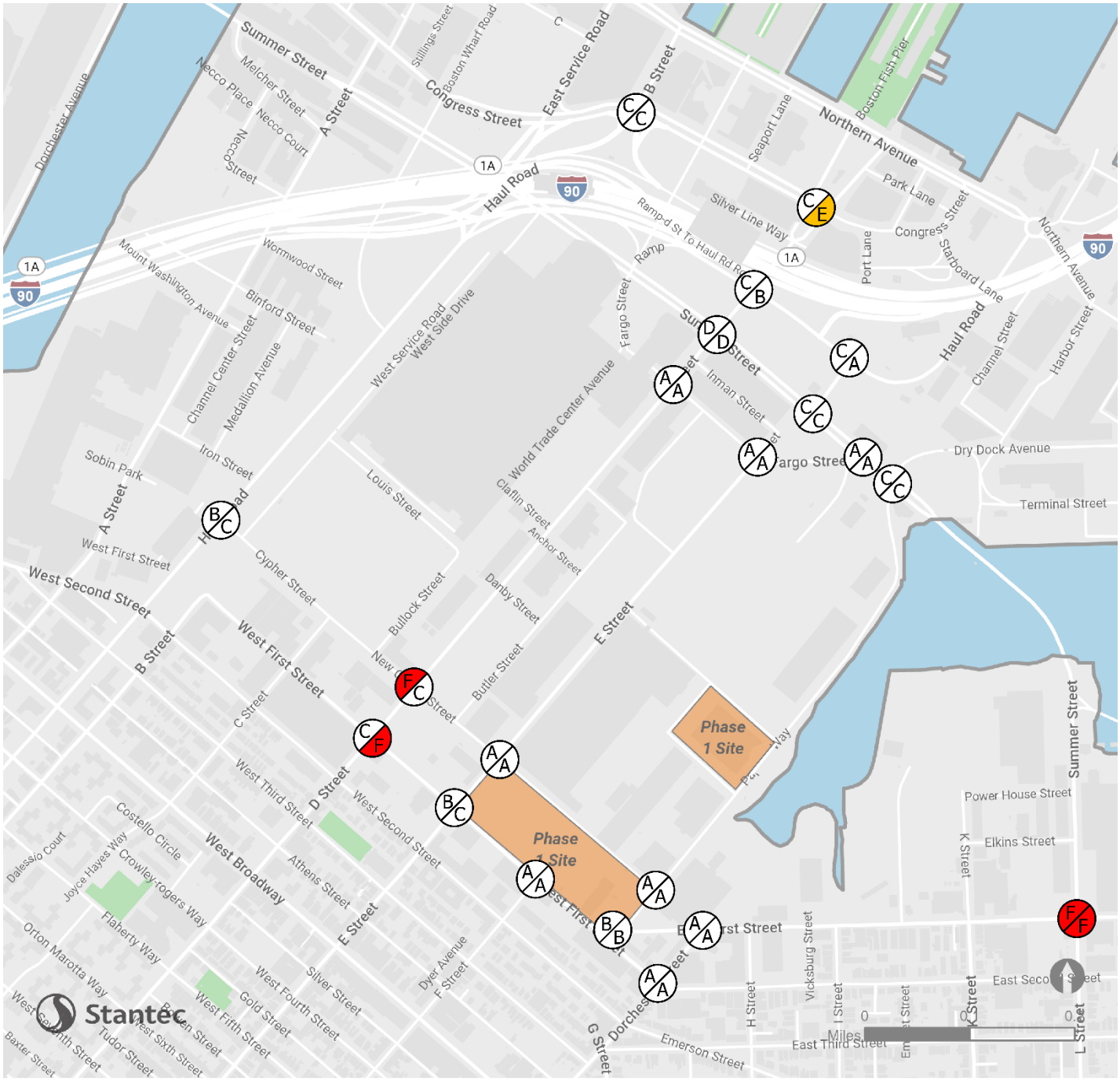
Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Congress Street & B Street/Ramp *Signalized*	**EB-LT**	0.64	42.6	D	120	165	0.55	42.2	D	88	124
	EB-R	0.04	0.1	A	0	0	0.10	0.1	A	0	0
	WB-L	0.35	27.1	C	87	169	0.28	23.9	C	72	148
	WB-LTR	0.29	22.7	C	63	110	0.31	21.4	C	73	130
	NB-L	0.62	34.7	C	126	191	0.79	47.4	D	131	204
	NB-T	0.36	27.8	C	95	148	0.26	26.6	C	66	109
	NB-R	0.31	1.3	A	1	27	0.37	2.9	A	27	68
	SB-T	0.39	43.9	D	40	69	0.55	43.1	D	76	111
	SB-R	0.11	1.0	A	0	4	0.26	3.6	A	2	24
	Intersection	-	**25.3**	**C**	-	-	-	**24.0**	**C**	-	-
Congress Street & D Street *Signalized*	**EB-LTR**	0.24	25.7	C	62	108	0.33	30.2	C	79	121
	EB-R	0.49	6.5	A	0	81	0.75	22.6	C	103	253
	WB-LTR	0.43	45.0	D	41	73	0.56	52.6	D	53	90
	NB-L	0.66	33.8	C	112	154	1.62	355.4	F	86	179
	NB-TR	0.31	22.4	C	41	84	0.38	67.3	E	57	130
	SB-LTR	0.62	52.9	D	82	126	0.88	60.9	E	185	277
	Intersection	-	**29.6**	**C**	-	-	-	**79.5**	**E**	-	-
I-90 Ramp & D Street *Signalized*	**NB-L**	0.68	55.1	E	118	181	0.61	55.1	E	90	146
	NB-T	0.24	16.8	B	76	126	0.17	14.1	B	51	87
	SB-TR	0.42	25.3	C	177	260	0.69	14.5	B	143	194
	Intersection	-	**27.0**	**C**	-	-	-	**18.1**	**B**	-	-
Haul Road & Pump House Road *Signalized*	**EB-T**	0.30	14.2	B	101	195	0.13	9.8	A	35	71
	EB-R	0.15	0.6	A	0	12	0.33	0.9	A	0	18
	WB-L	0.03	5.9	A	4	14	0.05	3.0	A	6	15
	WB-T	0.09	6.0	A	20	49	0.21	3.7	A	42	71
	NB-LR	0.68	38.5	D	157	196	0.41	33.8	C	60	96
	Intersection	-	**22.5**	**C**	-	-	-	**9.6**	**A**	-	-
Summer Street & D Street *Signalized*	**EB-L**	0.18	15.1	B	22	57	0.27	16.2	B	43	93
	EB-TR	0.24	21.3	C	69	128	0.48	26.3	C	158	251
	WB-LTR	0.54	21.5	C	134	219	0.37	32.7	C	98	168
	NB-L	0.48	56.4	E	69	121	0.34	52.3	D	43	82
	NB-LTR	0.56	51.8	D	85	120	0.44	50.0	D	60	88
	SB-L	0.64	58.7	E	124	198	0.79	65.2	E	187	318
	SB-LTR	0.69	55.8	E	124	171	0.84	61.1	E	186	266
	Intersection	-	**35.9**	**D**	-	-	-	**42.5**	**D**	-	-
Summer Street & Pump House Road *Signalized*	**EB-LT**	0.26	10.9	B	44	153	0.46	18.4	B	7	272
	WB-TR	0.65	24.3	C	222	540	0.38	29.1	C	129	234
	SB-LR	0.66	60.4	E	91	138	0.76	53.2	D	179	228
	Intersection	-	**25.1**	**C**	-	-	-	**30.9**	**C**	-	-
Summer Street & Fargo Street *Unsignalized*	**EB-T**	0.22	0.0	A	-	0	0.46	0.0	A	-	0
	WB-LT	0.42	0.5	A	-	3	0.20	0.5	A	-	3
	NB-L	0.04	16.9	C	-	4	0.04	24.8	C	-	3
	NB-R	0.06	11.3	B	-	5	0.04	11.7	B	-	3
	Intersection	-	**0.7**	**A**	-	-	-	**0.4**	**A**	-	-

Table 7-25 Existing Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Summer Street & Pappas Way/ Drydock Avenue *Signalized*	**EB-L**	0.20	10.7	B	122	45	0.06	14.9	B	12	25
	EB-TR	0.27	10.2	B	100	150	0.65	27.2	C	262	496
	WB-L	0.03	20.2	C	1	7	0.10	33.6	C	3	16
	WB-TR	0.65	24.2	C	326	494	0.38	31.1	C	134	181
	NB-LTR	0.63	106.4	F	114	182	0.17	28.1	C	45	87
	SB-LT	0.49	46.8	D	102	165	0.63	39.6	D	226	343
	SB-R	0.14	21.6	C	37	64	0.15	12.1	B	45	77
	Intersection	-	**27.4**	**C**	-	-	-	**28.9**	**C**	-	-
Fargo Street & D Street *Signalized*	**EB-LT**	0.12	42.8	D	8	27	0.04	40.7	D	4	16
	EB-R	0.02	8.6	A	0	6	0.01	6.8	A	0	5
	WB-LT	0.15	43.3	D	12	34	0.09	42.3	D	6	22
	WB-R	0.35	17.6	B	0	44	0.37	16.1	B	0	44
	NB-LTR	0.11	1.9	A	0	8	0.06	2.8	A	14	29
	SB-L	0.17	5.2	A	18	43	0.25	5.7	A	31	68
	SB-TR	0.10	4.3	A	19	43	0.16	5.1	A	35	67
	Intersection	-	**6.8**	**A**	-	-	-	**6.8**	**A**	-	-
Fargo Street & E Street *Unsignalized*	**EB-LTR**	0.16	10.1	B	-	14	0.20	9.4	A	-	19
	WB-LTR	0.16	12.3	B	-	14	0.08	12.0	B	-	7
	NB-LTR	0.04	4.2	A	-	3	0.02	4.6	A	-	1
	SB-LTR	0.00	1.2	A	-	0	0.00	1.0	A	-	0
	Intersection	-	**8.6**	**A**	-	-	-	**8.7**	**A**	-	-
Summer Steet/L Street & E First Street *Signalized*	**EB-LTR**	0.56	37.2	D	69	130	0.61	48.6	D	88	153
	WB-LT	0.45	36.7	D	61	112	0.28	42.5	D	37	76
	WB-R	0.52	5.3	A	0	56	0.24	7.3	A	0	41
	NB-LT	1.32	185.6	F	451	717	0.86	52.8	D	174	371
	NB-R	0.04	21.6	C	5	24	0.03	17.9	B	7	22
	SB-LT	1.87	428.8	F	319	543	1.54	273.3	F	966	1300
	SB-R	0.06	13.8	B	12	34	0.17	12.6	B	41	83
	Intersection	-	**178.6**	**F**	-	-	-	**172.7**	**F**	-	-
Cypher Street/ Richards Street & S Boston Bypass *Signalized*	**EB-L**	0.45	58.8	E	57	106	0.60	60.1	E	99	158
	EB-TR	0.39	56.6	E	48	92	0.58	59.2	E	94	152
	WB-L	0.42	59.6	E	51	101	0.32	56.4	E	36	74
	WB-T	0.30	53.7	D	39	79	0.13	51.5	D	15	40
	WB-R	0.47	7.3	A	0	56	0.15	1.5	A	0	11
	NB-LT	0.45	23.3	C	183	345	0.68	43.8	D	220	400
	NB-R	0.19	0.5	A	0	0	0.21	0.7	A	0	0
	SB-L	0.17	10.7	B	31	68	0.42	13.8	B	96	175
	SB-TR	0.28	8.4	A	77	162	0.54	15.5	B	251	438
	Intersection	-	**19.7**	**B**	-	-	-	**26.3**	**C**	-	-
Cypher Street & D Street *Signalized*	**EB-LT**	0.44	31.9	C	93	149	0.50	32.7	C	111	179
	EB-R	0.21	3.9	A	0	34	0.40	4.1	A	0	50
	WB-LTR	0.25	37.1	D	25	64	0.07	40.1	D	8	28
	NB-LTR	1.82	415.5	F	317	492	0.66	54.2	D	83	168
	SB-LTR	0.54	48.2	D	74	132	0.71	46.6	D	126	188
	Intersection	-	**190.3**	**F**	-	-	-	**30.1**	**C**	-	-
Cypher Street/Road 1 & E Street *Unsignalized*	**EB-LTR**	0.16	10.5	B	-	14	0.30	11.7	B	-	31
	WB-LTR	0.08	12.4	B	-	6	0.02	15.2	C	-	1
	NB-LTR	0.02	2.2	A	-	2	0.01	2.1	A	-	1
	SB-LTR	0.00	0.1	A	-	0	0.00	0.1	A	-	0
	Intersection	-	**5.2**	**A**	-	-	-	**5.5**	**A**	-	-

Table 7-25 Existing Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Road 1 & F Street *Unsignalized*	**EB-TR**	Intersection Does Not Exist					Intersection Does Not Exist				
	WB-LT										
	NB-LR										
	Intersection										
Road 1 & Pappas Way *Unsignalized*	**EB-LR**	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	NB-LT	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	SB-TR	0.09	0.0	A	-	0	0.21	0.0	A	-	0
	Intersection	**-**	**0.0**	**A**	**-**	**-**	**-**	**0.0**	**A**	**-**	**-**
Road C & Pappas Way *Unsignalized*	**EB-LR**	Intersection Does Not Exist					Intersection Does Not Exist				
	NB-LT										
	SB-TR										
	Intersection										
W First Street & D Street *Signalized*	**EB-L**	0.04	16.0	B	2	14	0.04	25.0	C	3	14
	EB-T	0.17	17.0	B	17	46	0.28	28.4	C	31	70
	WB-T	0.39	20.2	C	40	91	0.35	29.9	C	39	83
	WB-R	0.17	1.3	A	0	18	0.05	0.9	A	0	8
	NB-LT	0.33	20.0	B	35	81	0.23	29.1	C	25	61
	NB-R	0.09	0.5	A	0	0	0.14	1.0	A	0	0
	SB-L	1.08	137.5	F	64	185	2.48	715.6	F	163	327
	SB-R	0.06	0.2	A	0	0	0.11	2.6	A	0	22
	Intersection	**-**	**35.0**	**C**	**-**	**-**	**-**	**270.2**	**F**	**-**	**-**
W First Street & E Street *Unsignalized*	**EB-LTR**	0.36	11.1	B	-	0	0.58	15.9	C	-	0
	WB-LTR	0.66	16.6	C	-	0	0.41	13.0	B	-	0
	SB-LTR	0.31	11.4	B	-	0	0.67	19.7	C	-	0
	Intersection	**-**	**14.0**	**B**	**-**	**-**	**-**	**16.7**	**C**	**-**	**-**
W First Street & F Street *Unsignalized*	**EB-T**	0.13	0.0	A	-	0	0.19	0.0	A	-	0
	EB-LT	Movement Does Not Exist					Movement Does Not Exist				
	WB-T	0.24	0.0	A	-	0	0.14	0.0	A	-	0
	WB-TR	Movement Does Not Exist					Movement Does Not Exist				
	NB-L	0.16	14.4	B	-	14	0.06	13.2	B	-	5
	NB-R	0.06	9.7	A	-	5	0.09	10.6	B	-	8
	NB-TR	Movement Does Not Exist					Movement Does Not Exist				
	SB-LR	Movement Does Not Exist					Movement Does Not Exist				
	Intersection	**-**	**2.0**	**A**	**-**	**-**	**-**	**1.6**	**A**	**-**	**-**
W First Street/ E First Street & Pappas Way *Unsignalized*	**EB-LT**	0.44	12.9	B	-	0	0.57	15.9	C	-	0
	WB-TR	0.56	14.6	B	-	0	0.28	11.1	B	-	0
	NB-LTR	0.25	11.2	B	-	0	0.14	10.3	B	-	0
	SB-LR	0.27	11.6	B	-	0	0.56	15.9	C	-	0
	Intersection	**-**	**13.1**	**B**	**-**	**-**	**-**	**14.6**	**B**	**-**	**-**
E First Street & Dorchester Street *Unsignalized*	**EB-TR**	0.23	0.0	A	-	0	0.39	0.0	A	-	0
	WB-LT	0.05	1.6	A	-	4	0.04	2.2	A	-	3
	NB-LR	0.20	15.5	C	-	18	0.10	13.9	B	-	8
	Intersection	**-**	**2.2**	**A**	**-**	**-**	**-**	**1.2**	**A**	**-**	**-**
W First Street/ E Second Street & Dorchester Street *Unsignalized*	**WB-LTR**	0.19	14.7	B	-	18	0.07	14.1	B	-	6
	NB-LTR	0.06	4.2	A	-	5	0.04	4.1	A	-	3
	SB-LTR	0.01	0.3	A	-	0	0.01	0.6	A	-	1
	Intersection	**-**	**4.5**	**A**	**-**	**-**	**-**	**2.2**	**A**	**-**	**-**



Level Of Service - Existing Conditions

AM/PM Level of Service

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-27

Existing Condition Intersection Capacity Analysis

7.7.2.2 No-Build Condition

All intersections and intersection approaches which experience a letter grade deterioration in LOS operations between the Existing Condition and No-Build Condition, as described in this section, are defined in red font in Table 7-26. Figure 7-28 shows each intersection's overall LOS in the No-Build Condition.

Signalized Intersection Capacity Analysis

Several signalized intersections which operate at LOS D or better conditions in the Existing Condition continue to do so in the No-Build Condition with the addition of background trips. The a.m. peak hour at Summer Street/Pumphouse Road and Summer Street/Pappas Way/Drydock Avenue deteriorates from an LOS C to LOS E primarily owing to the addition of westbound movements along Summer Street.

In the p.m. peak hour, the Congress Street/D Street intersection deteriorates from an LOS E to LOS F with the addition of movements from several directions. The Summer Street/D Street intersection deteriorates from LOS D to LOS E, primarily associated with added southbound movement volumes from D Street and westbound movements along Summer Street. The Cypher Street/D Street intersection deteriorates from LOS C to LOS E, primarily associated with northbound movements along Cypher Street.

Unsignalized Intersection Capacity Analysis

All unsignalized intersections which operate at LOS D or better conditions in the Existing Condition continue to do so in the No-Build Condition with the addition of background trips.

Table 7-26 No Build Condition Operations Analysis for Study Area Intersections

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Congress Street & B Street/Ramp *Signalized*	EB-LT	0.79	46.8	D	166	228	0.66	42.6	D	124	171
	EB-R	0.05	0.1	A	0	0	0.20	0.3	A	0	0
	WB-L	0.45	33.5	C	108	202	0.42	29.7	C	107	204
	WB-LTR	0.59	32.7	C	146	224	0.53	28.6	C	135	216
	NB-L	0.90	54.0	D	204	318	1.01	85.3	F	174	243
	NB-T	0.49	27.9	C	148	208	0.31	25.9	C	82	126
	NB-R	0.38	4.4	A	48	89	0.43	5.6	A	68	128
	SB-T	0.53	44.0	D	60	93	0.60	42.4	D	92	128
	SB-R	0.11	0.9	A	0	4	0.26	4.9	A	12	32
	Intersection	-	**33.0**	**C**	-	-	-	**30.5**	**C**	-	-
Congress Street & D Street *Signalized*	EB-LTR	0.36	30.2	C	95	142	0.37	31.1	C	90	136
	EB-R	0.66	8.3	A	0	108	0.86	33.4	C	159	381
	WB-LTR	0.62	54.2	D	70	111	0.79	68.0	E	81	145
	NB-L	0.85	40.7	D	178	264	2.76	838.8	F	189	301
	NB-TR	0.40	23.6	C	69	127	0.47	71.6	E	78	153
	SB-LTR	0.75	58.9	E	107	167	1.31	187.4		373	498
	Intersection	-	**34.3**	**C**	-	-	-	**209.7**		-	-
I-90 Ramp & D Street *Signalized*	NB-L	0.68	55.1	E	118	181	0.61	55.1	E	90	146
	NB-T	0.38	19.4	B	131	204	0.27	15.5	B	85	135
	SB-TR	0.55	26.1	C	246	346	0.90	30.2	C	243	205
	Intersection	-	**26.8**	**C**	-	-	-	**28.6**	**C**	-	-
Haul Road & Pump House Road *Signalized*	EB-T	0.34	14.7	B	114	217	0.13	10.1	B	36	75
	EB-R	0.15	0.6	A	0	12	0.33	1.0	A	0	19
	WB-L	0.03	5.9	A	4	14	0.05	3.0	A	6	15
	WB-T	0.10	6.0	A	21	51	0.22	3.8	A	44	74
	NB-LR	0.68	38.6	D	157	196	0.41	33.8	C	60	96
	Intersection	-	**22.4**	**C**	-	-	-	**9.6**	**A**	-	-
Summer Street & D Street *Signalized*	EB-L	0.25	19.4	B	27	58	0.36	19.9	B	48	93
	EB-TR	0.46	30.0	C	154	228	0.59	31.8	C	204	292
	WB-LTR	0.82	24.8	C	126	460	0.62	51.8	D	207	274
	NB-L	0.38	47.8	D	68	124	0.29	47.3	D	46	87
	NB-LTR	0.73	55.3	E	150	204	0.65	53.9	D	117	159
	SB-L	0.70	60.5	E	152	243	0.98	95.1		259	461
	SB-LTR	0.77	57.6	E	155	213	1.05	95.8		279	403
	Intersection	-	**39.3**	**D**			-	**60.7**	**E**	-	-
Summer Street & Pump House Road *Signalized*	EB-LT	0.40	11.3	B	70	215	0.54	19.2	B	7	313
	WB-TR	0.74	82.5	F	518	530	0.53	38.9	D	251	371
	SB-LR	0.66	60.4	E	91	138	0.76	53.2	D	179	228
	Intersection	-	**56.3**	**E**	-	-	-	**33.7**	**C**	-	-
Summer Street & Fargo Street *Unsignalized*	EB-TR	0.33	0.0	A	-	0	0.51	0.0	A	-	0
	WB-LT	0.48	0.7	A	-	4	0.28	0.5	A	-	3
	NB-L	0.04	14.8	B	-	3	0.04	24.9	C	-	3
	NB-R	0.06	11.5	B	-	5	0.04	11.6	B	-	3
	Intersection	-	**0.6**	**A**	-	-	-	**0.4**	**A**	-	-

Table 7-26 No Build Condition Operations Analysis for Study Area Intersections (Continued)

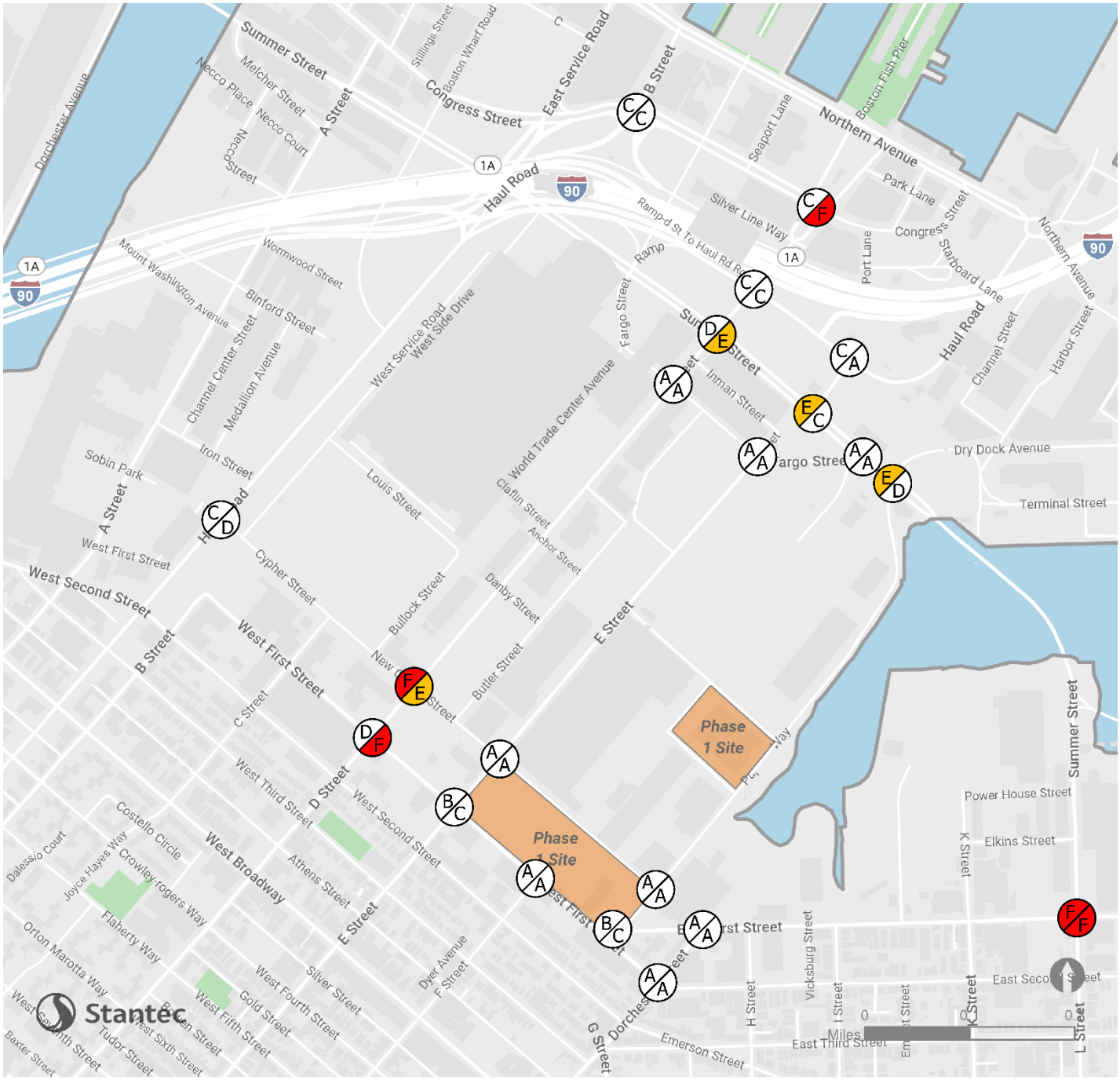
Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Summer Street & Pappas Way/ Drydock Avenue *Signalized*	EB-L	0.38	20.1	C	38	109	0.19	25.1	C	22	59
	EB-TR	0.43	16.3	B	187	347	0.87	51.6	D	432	552
	WB-L	0.03	26.5	C	1	7	0.10	33.6	C	3	16
	WB-TR	1.05	97.5	F	564	725	0.53	33.8	C	198	257
	NB-LTR	0.51	122.9	F	133	214	0.15	18.5	B	42	76
	SB-LT	0.41	37.0	D	111	185	0.62	28.9	C	241	355
	SB-R	0.13	14.0	B	36	67	0.22	12.8	B	65	104
	Intersection	-	**64.9**	**E**	-	-	-	**39.5**	**D**	-	-
Fargo Street & D Street *Signalized*	EB-LT	0.12	42.8	D	8	27	0.04	40.7	D	4	16
	EB-R	0.02	8.4	A	0	6	0.01	6.8	A	0	5
	WB-LT	0.15	43.3	D	12	34	0.09	42.3	D	6	22
	WB-R	0.35	17.6	B	0	44	0.37	16.1	B	0	44
	NB-LTR	0.17	2.1	A	24	10	0.11	4.6	A	39	47
	SB-L	0.19	5.6	A	19	45	0.28	6.1	A	32	71
	SB-TR	0.14	4.6	A	27	57	0.28	6.3	A	66	120
	Intersection	-	**5.9**	**A**	-	-	-	**7.1**	**A**	-	-
Fargo Street & E Street *Unsignalized*	EB-LTR	0.16	10.1	B	-	14	0.20	9.4	A	-	19
	WB-LTR	0.16	12.3	B	-	14	0.08	12.0	B	-	7
	NB-LTR	0.04	4.2	A	-	3	0.02	4.6	A	-	1
	SB-LTR	0.00	1.2	A	-	0	0.00	1.0	A	-	0
	Intersection	-	**8.6**	**A**	-	-	-	**8.7**	**A**	-	-
Summer Steet/L Street & E First Street *Signalized*	EB-LTR	0.72	47.5	D	91	165	0.82	63.5	E	166	288
	WB-LT	0.57	40.3	D	78	139	0.48	48.8	D	60	114
	WB-R	0.52	5.2	A	0	56	0.22	6.9	A	0	41
	NB-LT	1.60	306.7	F	565	820	1.05	96.1	F	267	447
	NB-R	0.12	23.5	C	19	53	0.05	19.2	B	13	32
	SB-LT	2.07	520.2	F	378	596	1.83	403.2	F	1181	1435
	SB-R	0.09	14.7	B	17	42	0.22	14.4	B	58	99
	Intersection	-	**242.2**	**F**	-	-	-	**240.2**	**F**	-	-
Cypher Street/ Richards Street & S Boston Bypass *Signalized*	EB-L	0.49	59.3	E	65	117	0.63	57.9	E	120	183
	EB-TR	0.43	57.0	E	56	103	0.67	60.2	E	128	194
	WB-L	0.44	60.1	E	54	106	0.34	56.8	E	39	80
	WB-T	0.39	56.2	E	53	98	0.17	51.9	D	20	49
	WB-R	0.49	7.0	A	0	56	0.15	1.6	A	0	15
	NB-LT	0.79	39.8	D	323	666	1.19	150.7	F	343	620
	NB-R	0.21	0.6	A	0	0	0.26	1.1	A	0	0
	SB-L	0.24	11.8	B	34	75	0.50	23.2	C	136	255
	SB-TR	0.43	10.2	B	131	265	0.65	20.2	C	341	600
	Intersection	-	**24.5**	**C**	-	-	-	**50.4**	**D**	-	-
Cypher Street & D Street *Signalized*	EB-LT	0.46	32.1	C	96	154	0.50	32.7	C	111	179
	EB-R	0.21	3.8	A	0	34	0.40	4.1	A	0	50
	WB-LTR	0.25	37.1	D	25	64	0.07	40.1	D	8	28
	NB-LTR	2.25	598.0	F	503	704	1.27	189.2	F	231	397
	SB-LTR	0.57	48.4	D	77	137	0.73	36.0	D	204	306
	Intersection	-	**318.4**	**F**	-	-	-	**64.6**	**E**	-	-

Table 7-26 No Build Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Cypher Street/Road 1 & E Street *Unsignalized*	**EB-LTR**	0.16	10.5	B	-	14	0.30	11.7	B	-	31
	WB-LTR	0.08	12.4	B	-	6	0.02	15.2	C	-	1
	NB-LTR	0.02	2.2	A	-	2	0.01	2.1	A	-	1
	SB-LTR	0.00	0.1	A	-	0	0.00	0.1	A	-	0
	Intersection	-	**5.2**	**A**	-	-	-	**5.5**	**A**	-	-
Road 1 & F Street *Unsignalized*	**EB-TR**	Intersection Does Not Exist					Intersection Does Not Exist				
	WB-LT										
	NB-LR										
	Intersection										
Road 1 & Pappas Way *Unsignalized*	**EB-LR**	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	NB-LT	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	SB-TR	0.09	0.0	A	-	0	0.21	0.0	A	-	0
	Intersection	-	**0.0**	**A**	-	-	-	**0.0**	**A**	-	-
Road C & Pappas Way *Unsignalized*	**EB-LR**	Intersection Does Not Exist					Intersection Does Not Exist				
	NB-LT										
	SB-TR										
	Intersection										
W First Street & D Street *Signalized*	**EB-L**	0.05	18.7	B	3	17	0.05	28.3	C	4	17
	EB-T	0.18	19.5	B	21	56	0.30	31.6	C	36	82
	WB-T	0.45	23.5	C	55	120	0.45	34.7	C	53	111
	WB-R	0.20	1.8	A	0	24	0.06	1.5	A	0	12
	NB-LT	0.56	22.7	C	82	165	0.57	34.5	C	85	159
	NB-R	0.08	0.4	A	0	0	0.13	0.8	A	0	0
	SB-L	1.35	235.5	F	80	225	4.13	-	F	292	532
	SB-R	0.08	0.3	A	0	0	0.17	3.3	A	0	32
	Intersection	-	**50.6**	**D**	-	-	-	**532.8**	**F**	-	-
W First Street & E Street *Unsignalized*	**EB-LTR**	0.39	11.5	B	-	0	0.80	27.4	D	-	0
	WB-LTR	0.67	17.1	C	-	0	0.46	14.4	B	-	0
	SB-LTR	0.31	11.5	B	-	0	0.72	23.4	C	-	0
	Intersection	-	**14.4**	**B**	-	-	-	**23.1**	**C**	-	-
W First Street & F Street *Unsignalized*	**EB-T**	0.13	0.0	A	-	0	0.24	0.0	A	-	0
	EB-LT	Movement Does Not Exist					Movement Does Not Exist				
	WB-T	0.24	0.0	A	-	0	0.14	0.0	A	-	0
	WB-TR	Movement Does Not Exist					Movement Does Not Exist				
	NB-L	0.16	14.4	B	-	14	0.07	14.3	B	-	14
	NB-R	0.06	9.7	A	-	5	0.10	11.3	B	-	5
	NB-TR	Movement Does Not Exist					Movement Does Not Exist				
	SB-LR	Movement Does Not Exist					Movement Does Not Exist				
	Intersection	-	**2.0**	**A**	-	-	-	**1.5**	**A**	-	-
W First Street/ E First Street & Pappas Way *Unsignalized*	**EB-LT**	0.46	13.6	B	-	0	0.75	24.2	C	-	0
	WB-TR	0.60	16.1	C	-	0	0.36	12.8	B	-	0
	NB-LTR	0.27	11.6	B	-	0	0.18	11.3	B	-	0
	SB-LR	0.28	11.9	B	-	0	0.61	18.7	C	-	0
	Intersection	-	**14.0**	**B**	-	-	-	**19.2**	**C**	-	-

Table 7-26 No Build Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
E First Street & Dorchester Street *Unsignalized*	**EB-TR**	0.23	0.0	A	-	0	0.45	0.0	A	-	0
	WB-LT	0.05	1.6	A	-	4	0.05	2.4	A	-	4
	NB-LR	0.20	15.5	C	-	18	0.11	15.1	C	-	9
	Intersection	**-**	**2.2**	**A**	**-**	**-**	**-**	**1.1**	**A**	**-**	**-**
W First Street/ E Second Street & Dorchester Street *Unsignalized*	**WB-LTR**	0.19	14.7	B	-	18	0.08	14.8	B	-	7
	NB-LTR	0.06	4.2	A	-	5	0.05	4.2	A	-	4
	SB-LTR	0.01	0.3	A	-	0	0.01	0.5	A	-	1
	Intersection	**-**	**4.5**	**A**	**-**	**-**	**-**	**2.1**	**A**	**-**	**-**



Level Of Service - No-Build Conditions

AM/PM Level of Service

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-28
No-Build Condition Intersection Capacity Analysis

7.7.2.3 Phase 1 Build Condition

All intersections and intersection approaches which experience a letter grade deterioration in LOS operations between the No-Build Condition and Phase 1 Build Condition, as described in this section, are defined in red font in Table 7-27. Figure 7-29 shows each intersection's overall LOS in the Phase 1 Build Condition.

Signalized Intersection Capacity Analysis

All intersections operate at an acceptable condition in the Phase 1 Build Condition, observe no deterioration in operations to LOS E or LOS F from the No-Build Condition to the Phase 1 Build Condition, or are already operating at a deficient condition in the No-Build Condition. The northbound left/thru approach at the Cypher Street/Richards Street/South Boston Bypass Road intersection deteriorates from an LOS D to LOS E in the a.m. peak hour due to added volumes in other directions resulting in worsened operations for this particular approach.

Unsignalized Intersection Capacity Analysis

All unsignalized intersections operate at an acceptable condition in the Phase 1 Build Condition or observe no deterioration in operations to LOS E or LOS F from the No-Build Condition to the Phase 1 Build Condition.

Table 7-27 Phase 1 Build Condition Operations Analysis for Study Area Intersections

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Congress Street & B Street/Ramp *Signalized*	**EB-LT**	0.79	46.8	D	166	228	0.66	42.6	D	124	171
	EB-R	0.05	0.1	A	0	0	0.20	0.3	A	0	0
	WB-L	0.47	34.1	C	115	212	0.44	30.1	C	113	214
	WB-LTR	0.60	33.0	C	150	228	0.54	28.8	C	139	221
	NB-L	0.90	54.0	D	204	318	1.01	85.3	F	174	243
	NB-T	0.49	27.9	C	148	208	0.31	25.9	C	82	126
	NB-R	0.39	4.5	A	50	93	0.43	5.6	A	68	128
	SB-T	0.53	44.0	D	60	93	0.60	42.4	D	92	128
	SB-R	0.11	0.9	A	0	4	0.26	4.9	A	12	32
	Intersection	-	**33.0**	**C**	-	-	-	**30.6**	**C**	-	-
Congress Street & D Street *Signalized*	**EB-LTR**	0.37	30.2	C	95	142	0.37	31.1	C	90	136
	EB-R	0.67	8.5	A	0	110	0.86	33.9	C	159	381
	WB-LTR	0.62	54.2	D	70	111	0.79	68.0	E	81	145
	NB-L	0.88	42.5	D	187	282	2.93	912.8	F	217	319
	NB-TR	0.40	22.0	C	68	108	0.47	74.4	E	87	153
	SB-LTR	0.75	58.9	E	107	167	1.31	188.7	F	373	498
	Intersection	-	**34.7**	**C**	-	-	-	**227.0**	**F**	-	-
I-90 Ramp & D Street *Signalized*	**NB-L**	0.71	54.8	D	134	199	0.65	54.7	D	104	163
	NB-T	0.41	21.0	C	141	219	0.28	16.6	B	92	146
	SB-TR	0.58	27.8	C	253	356	0.92	36.5	D	244	206
	Intersection	-	**28.5**	**C**	-	-	-	**33.3**	**C**	-	-

Table 7-27 Phase 1 Build Condition Operations Analysis for Study Area Intersections (Continued)

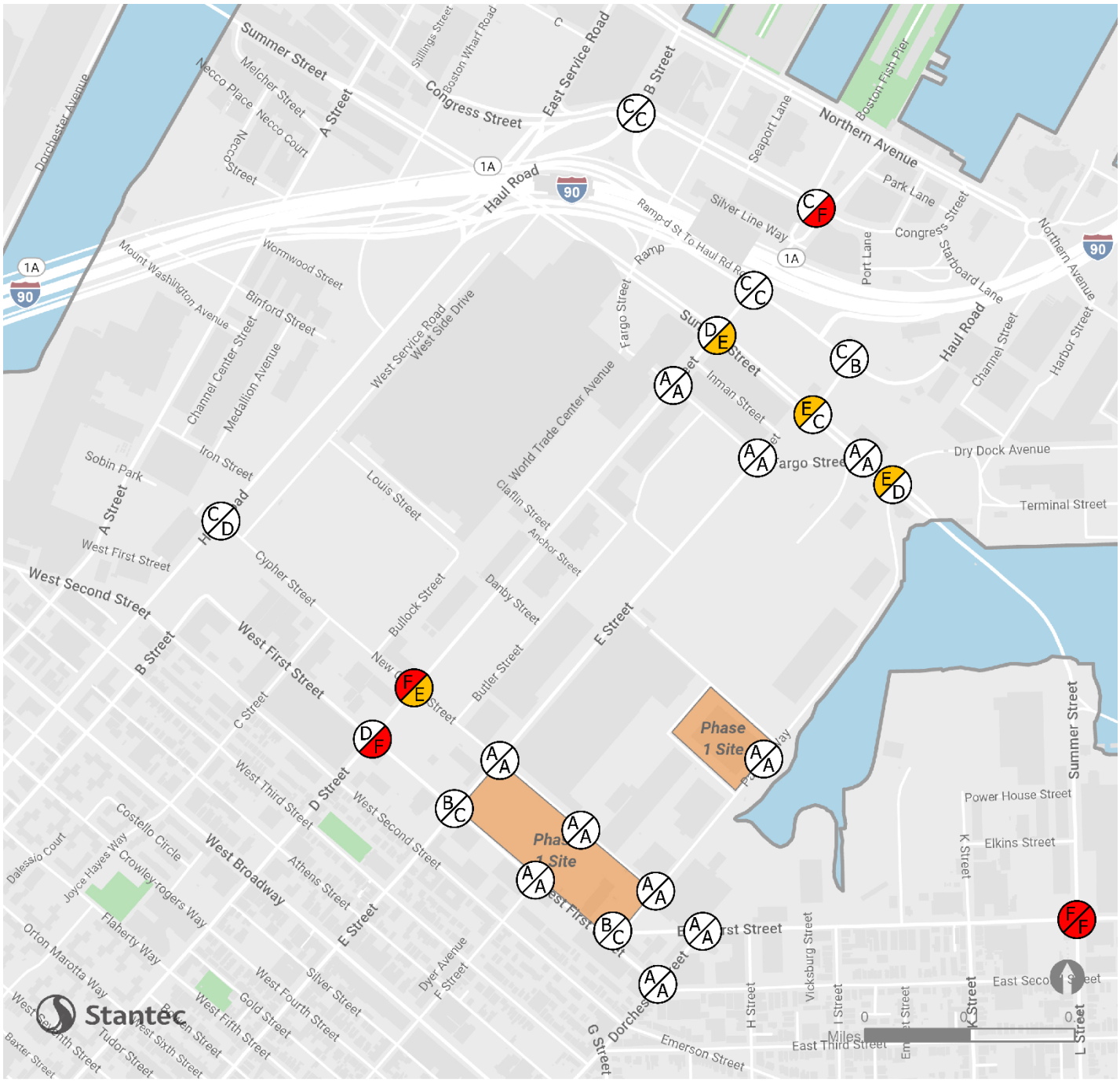
Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Haul Road & Pump House Road *Signalized*	**EB-T**	0.34	15.3	B	118	223	0.13	10.3	B	36	77
	EB-R	0.17	0.6	A	0	12	0.33	1.0	A	0	19
	WB-L	0.03	6.2	A	4	15	0.05	3.1	A	6	15
	WB-T	0.10	6.3	A	22	53	0.22	3.9	A	44	77
	NB-LR	0.68	37.9	D	159	198	0.43	34.7	C	65	102
	Intersection	-	**22.1**	**C**	-	-	-	**10.1**	**B**	-	-
Summer Street & D Street *Signalized*	**EB-L**	0.26	19.8	B	27	58	0.38	20.5	C	49	93
	EB-TR	0.50	31.0	C	170	247	0.60	32.2	C	205	292
	WB-LTR	0.89	30.6	C	197	504	0.69	54.0	D	228	298
	NB-L	0.38	47.4	D	68	125	0.28	46.9	D	45	87
	NB-LTR	0.74	55.5	E	154	210	0.66	54.0	D	122	166
	SB-L	0.71	61.1	E	154	248	0.98	95.1	F	259	461
	SB-LTR	0.78	58.0	E	157	217	1.05	95.8	F	279	403
	Intersection	-	**41.3**	**D**	-	-	-	**61.2**	**E**	-	-
Summer St & Pump House Road *Signalized*	**EB-LT**	0.41	12.1	B	74	239	0.54	19.3	B	7	312
	WB-TR	0.77	82.2	F	554	545	0.57	38.2	D	270	395
	SB-LR	0.73	63.8	E	106	158	0.77	53.3	D	184	236
	Intersection	-	**56.7**	**E**	-	-	-	**33.8**	**C**	-	-
Summer Street & Fargo Street *Unsignalized*	**EB-T**	0.35	0.0	A	-	0	0.51	0.0	A	-	0
	EB-R	0.50	0.7	A	-	4	0.31	0.6	A	-	3
	WB-LT	0.05	16.3	C	-	4	0.04	26.3	D	-	3
	NB-L	0.06	11.6	B	-	5	0.04	11.6	B	-	3
	NB-R	-	0.6	A	-	-	-	0.4	A	-	-
	Intersection	**0.69**	**43.1**	**D**	**73**	**155**	**0.19**	**25.3**	**C**	**23**	**58**
Summer Street & Pappas Way/ Drydock Avenue *Signalized*	**EB-L**	0.56	25.4	C	238	365	0.87	52.0	D	433	552
	EB-T	0.03	26.5	C	1	7	0.10	33.6	C	3	16
	EB-R	1.06	97.0	F	583	725	0.53	33.8	C	198	257
	WB-L	0.50	95.5	F	148	241	0.35	22.9	C	74	130
	WB-T	0.31	25.9	C	90	156	0.64	29.8	C	244	363
	WB-R	0.12	13.8	B	35	67	0.22	12.8	B	65	104
	NB-LTR	-	65.6	E	-	-	-	39.7	D	-	-
	SB-LT	0.26	19.8	B	27	58	0.38	20.5	C	49	93
	SB-R	0.50	31.0	C	170	247	0.60	32.2	C	205	292
	Intersection	**0.89**	**30.6**	**C**	**197**	**504**	**0.69**	**54.0**	**D**	**228**	**298**
Fargo Street & D Street *Signalized*	**EB-LT**	0.12	42.7	D	8	27	0.04	40.5	D	4	16
	EB-R	0.02	8.4	A	0	6	0.01	6.8	A	0	5
	WB-LT	0.15	43.2	D	12	34	0.09	42.2	D	6	22
	WB-R	0.37	17.9	B	0	47	0.39	16.0	B	0	45
	NB-LTR	0.18	2.0	A	23	10	0.11	4.5	A	38	46
	SB-L	0.20	5.7	A	20	48	0.28	6.1	A	32	71
	SB-TR	0.14	4.6	A	28	60	0.28	6.4	A	66	121
	Intersection	-	**5.9**	**A**	-	-	-	**7.1**	**A**	-	-
Fargo Street & E Street *Unsignalized*	**EB-LTR**	0.17	10.1	B	-	15	0.20	9.4	A	-	19
	WB-LTR	0.17	12.5	B	-	15	0.08	12.1	B	-	7
	NB-LTR	0.04	4.4	A	-	3	0.02	4.8	A	-	2
	SB-LTR	0.00	1.2	A	-	0	0.00	1.0	A	-	0
	Intersection	-	**8.7**	**A**	-	-	-	**8.7**	**A**	-	-
Summer Steet/L Street & E First Street *Signalized*	**EB-LTR**	0.72	47.5	D	91	165	0.82	63.5	E	166	288
	WB-LT	0.57	40.3	D	78	139	0.48	48.8	D	60	114
	WB-R	0.52	5.2	A	0	56	0.22	6.9	A	0	41
	NB-LT	1.60	306.7	F	565	820	1.05	96.1	F	267	447
	NB-R	0.12	23.5	C	19	53	0.05	19.2	B	13	32
	SB-LT	2.07	520.2	F	378	596	1.83	403.2	F	1181	1435
	SB-R	0.09	14.7	B	17	42	0.22	14.4	B	58	99
	Intersection	-	**242.2**	**F**	-	-	-	**240.2**	**F**	-	-

Table 7-27 Phase 1 Build Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Cypher Street/ Richards Street & S Boston Bypass *Signalized*	EB-L	0.49	59.3	E	65	117	0.63	57.9	E	120	183
	EB-TR	0.43	57.0	E	56	103	0.67	60.2	E	128	194
	WB-L	0.54	60.7	E	81	144	0.46	58.5	E	60	108
	WB-T	0.32	50.5	D	51	94	0.15	49.3	D	19	47
	WB-R	0.43	5.5	A	0	52	0.15	1.7	A	0	16
	NB-LT	0.92	58.7	E	352	712	1.23	167.5	F	362	620
	NB-R	0.27	1.7	A	0	15	0.26	1.1	A	0	0
	SB-L	0.31	14.5	B	44	93	0.51	25.6	C	145	270
	SB-TR	0.47	12.3	B	143	286	0.67	21.8	C	356	633
	Intersection	-	**29.8**	**C**	-	-	-	**54.5**	**D**	-	-
Cypher Street & D Street *Signalized*	EB-LT	0.54	32.3	C	125	190	0.52	32.8	C	117	184
	EB-R	0.20	3.8	A	0	34	0.40	4.1	A	0	50
	WB-LTR	0.40	41.4	D	52	101	0.24	40.9	D	28	63
	NB-LTR	2.08	527.0	F	492	693	1.29	193.8	F	233	398
	SB-LTR	0.59	48.6	D	81	142	0.73	35.6	D	208	324
	Intersection	-	**259.7**	**F**	-	-	-	**64.3**	**E**	-	-
Cypher Street/Road 1 & E Street *Unsignalized*	EB-LTR	0.30	12.8	B	-	31	0.30	11.8	B	-	32
	WB-LTR	0.21	14.1	B	-	20	0.11	12.8	B	-	10
	NB-LTR	0.02	2.2	A	-	2	0.01	2.1	A	-	1
	SB-LTR	0.01	0.7	A	-	1	0.00	0.1	A	-	0
	Intersection	-	**8.0**	**A**	-	-	-	**6.2**	**A**	-	-
Road 1 & F Street *Unsignalized*	EB-TR	0.02	0.0	A	-	0	0.00	0.0	A	-	0
	WB-LT	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	NB-LR	0.01	8.6	A	-	1	0.00	8.6	A	-	0
	Intersection	-	**0.8**	**A**	-	-	-	**0.5**	**A**	-	-
Road 1 & Pappas Way *Unsignalized*	EB-LR	0.10	11.1	B	-	8	0.03	11.6	B	-	3
	NB-LT	0.00	0.2	A	-	0	0.00	0.0	A	-	0
	SB-TR	0.11	0.0	A	-	0	0.23	0.0	A	-	0
	Intersection	-	**1.8**	**A**	-	-	-	**0.4**	**A**	-	-
Road C & Pappas Way *Unsignalized*	EB-LR	0.16	12.6	B	-	15	0.18	12.1	B	-	16
	NB-LT	0.05	2.7	A	-	4	0.00	0.3	A	-	0
	SB-TR	0.11	0.0	A	-	0	0.21	0.0	A	-	0
	Intersection	-	**3.5**	**A**	-	-	-	**2.5**	**A**	-	-
W First Street & D Street *Signalized*	EB-L	0.05	18.8	B	3	17	0.05	28.6	C	4	17
	EB-T	0.18	19.6	B	21	56	0.30	31.8	C	36	82
	WB-T	0.45	23.6	C	55	120	0.45	34.9	C	53	111
	WB-R	0.20	1.8	A	0	24	0.06	1.5	A	0	13
	NB-LT	0.57	22.9	C	85	170	0.58	34.7	C	87	163
	NB-R	0.08	0.4	A	0	0	0.13	0.8	A	0	0
	SB-L	1.36	236.5	F	80	225	4.13	-	F	293	535
	SB-R	0.08	0.3	A	0	0	0.17	3.4	A	0	32
	Intersection	-	50.7	D	-	-	-	532.9	F	-	-
W First Street & E Street *Unsignalized*	EB-LTR	0.40	11.7	B	-	0	0.81	28.8	D	-	0
	WB-LTR	0.67	17.6	C	-	0	0.46	14.7	B	-	0
	SB-LTR	0.34	11.9	B	-	0	0.75	25.3	D	-	0
	Intersection	-	**14.7**	**B**	-	-	-	**24.5**	**C**	-	-
W First Street & F Street *Unsignalized*	EB-T	Movement does not exist					Movement does not exist				
	EB-LT	0.00	0.0	A	-	0	0.00	0.0	A	-	0
	WB-T	Movement does not exist					Movement does not exist				
	WB-TR	0.24	0.0	A	-	0	0.14	0.0	A	-	0
	NB-L	0.18	16.0	C	-	16	0.08	15.7	C	-	6
	NB-R	Movement does not exist					Movement does not exist				
	NB-TR	0.07	10.2	B	-	6	0.10	11.3	B	-	8
	SB-LR	0.00	10.6	B	-	0	0.00	9.5	A	-	0
	Intersection	-	**2.3**	**A**	-	-	-	**1.6**	**A**	-	-

Table 7-27 Phase 1 Build Condition Operations Analysis for Study Area Intersections (Continued)

Intersection	Lane Group	AM Peak Hour					PM Peak Hour				
		v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	v/c Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
W First Street/ E First Street & Pappas Way *Unsignalized*	**EB-LT**	0.48	14.4	B	-	0	0.77	26.3	D	-	0
	WB-TR	0.63	17.5	C	-	0	0.38	13.3	B	-	0
	NB-LTR	0.29	12.1	B	-	0	0.18	11.5	B	-	0
	SB-LR	0.35	13.1	B	-	0	0.69	22.0	C	-	0
	Intersection	-	**15.0**	**B**	-	-	-	**21.2**	**C**	-	-
E First Street & Dorchester Street *Unsignalized*	**EB-TR**	0.25	0.0	A	-	0	0.47	0.0	A	-	0
	WB-LT	0.05	1.6	A	-	4	0.05	2.4	A	-	4
	NB-LR	0.20	15.9	C	-	19	0.11	15.3	C	-	9
	Intersection	-	**2.1**	**A**	-	-	-	**1.1**	**A**	-	-
W First Street/ E Second Street & Dorchester Street *Unsignalized*	**WB-LTR**	0.21	15.6	C	-	19	0.08	15.4	C	-	7
	NB-LTR	0.07	4.4	A	-	6	0.05	4.2	A	-	4
	SB-LTR	0.01	0.3	A	-	0	0.01	0.5	A	-	1
	Intersection	-	**4.4**	**A**	-	-	-	**2.0**	**A**	-	-



Level Of Service - Build Conditions

AM/PM Level of Service

Reserved Channel Development Boston, MA

Epsilon ASSOCIATES INC. **Source: Stantec**

Figure 7-29
Build Condition Intersection Capacity Analysis

7.8 Build Transit Analysis

An evaluation of nearby service (modes and closest stops) and service characteristics (frequency and destinations) was completed following current MassDOT/MBTA methodology for MBTA services anticipated to be accessed to reach the Phase 1 Site. The analysis assumes transit riders will utilize MBTA Bus Routes 4, 7, 9, 10, and 11, Silver Line Routes 1, 2, and 3, and the Red Line. Fall 2025 ridership data for each of these identified routes was obtained from the MBTA's Open Data Portal. Particular emphasis was placed on the analysis of the closest bus routes that operate on Summer Street, north of the Phase 1 Site, and on Broadway, south of the Phase 1 Site.

Table 7-28 depicts the anticipated transit trip distribution to and from the Phase 1 Site, given the existing transit network described in Section 7.3.10 and the net new transit trips generated by the Phase 1 Project as described in Section 7.5.2.2. The trip distribution analysis builds off the regional origin/destination analysis by transit mode developed through the South Boston Seaport Strategic Transit Plan. Trips were evaluated to highlight pockets of potential origin trips which will be identified for their propensity to use transit based on existing services and mode shares. Trips were assigned to the regional transit network, including subway, Silver Line, ferry, and local bus services, and include transit users who use two transit services (such as the Red Line and Route 9) to access the Phase 1 Site. Refer to Table 7-29 for additional information on the anticipated transit trip volumes by service to and from the Phase 1 Site.

Transit capacity analyses were performed on these services. These analyses were performed to determine if existing transit services adequately meet projected ridership levels for the Existing Condition, No-Build Conditions, and Phase 1 Build Condition. The transit capacity analyses are consistent with the MBTA's methodology established in the 2024 Service Delivery Policy.[12]

Table 7-28 Phase 1 Project Transit Trip Distribution

Transit Trip Origin/Destination	% of Project-Generated Trips
Bus Route 4	0%
Bus Route 7 (Outbound southeast from South Station)	3%
Bus Route 9	4.5%
Bus Route 10	0.5%
Bus Route 11	0.5%
Silver Line (SL1)	6%
Silver Line (SL2)	6%

[12] Service Delivery Policy, published by the Policy & Strategic Planning Department of the MBTA (https://cdn.mbta.com/sites/default/files/2025-2-7-service-delivery-policy-fall-2024-final.pdf)

Table 7-28 Phase 1 Project Transit Trip Distribution (Continued)

Transit Trip Origin/Destination	% of Project-Generated Trips
Silver Line (SL3)	8%
Silver Line (SL3)	6%
Red Line (Northbound) & Walk	8%
Red Line (Southbound) & Walk	41
Commuter Rail & Walk	16.5%
TOTAL:	**~100%**

Table 7-29 Phase 1 Project Transit Trips

MBTA Transit Line/Route	Direction	Distance from Phase 1 Site (Closest Stop)	Daily/AM/PM Transit Trips	
			Trips IN	Trips OUT
Bus Route 4	**Inbound** *SE from North Station*	**0.6 miles** (Summer St opp WTC Ave)	0/0/0	0/0/0
	Outbound *NW from Design Center*	**0.5 miles** (Drydock Ave @ Design Center Place)	0/0/0	0/0/0
Bus Route 7	**Inbound** *NW from City Point*	**0.3 miles** (Summer St @ Drydock Ave)	0/0/0	52/5/6
	Outbound *SE from South Station*	**0.3 miles** (Summer St @ Pappas Way)	50/5/5	0/0/0
Bus Route 9	**Inbound** *NW from City Point*	**0.3 miles** (West Broadway @ F St)	60/5/6	194/17/17
	Outbound *SE from Back Bay*	**0.3 miles** (West Broadway @ F St)	184/16/17	61/6/6
Bus Route 10	**Inbound** *NW from City Point*	**0.3 miles** (Dorchester St @ Broadway)	11/1/2	105/10/11
	Outbound *SE from Arlington*	**0.3 miles** (Dorchester St @ East Broadway)	101/9/10	11/1/1

Table 7-29 Phase 1 Project Transit Trips (Continued)

MBTA Transit Line/Route	Direction	Distance from Phase 1 Site (Closest Stop)	Daily/AM/PM Transit Trips	
			Trips IN	Trips OUT
Bus Route 11	**Inbound** *NW from City Point*	**0.5 miles** (West Sixth St @ F St)	0/0/0	4/1/1
	Outbound *SE from South Station*	**0.5 miles** (West Seventh St @ F St)	4/1/1	0/0/0
Silver Line (SL1)	**Inbound** *SW from Airport*	**0.7 miles** (Silver Line Way)	0/0/0	162/14/15
	Outbound *NE from South Station*	**0.7 miles** (Silver Line Way)	172/15/16	0/0/0
Silver Line (SL2)	**Inbound** *NW from Drydock Ave*	**0.7 miles** (Silver Line Way)	0/0/0	162/14/15
	Outbound *SE from South Station*	**0.7 miles** (Silver Line Way)	172/15/16	0/0/0
Silver Line (SL3)	**Inbound** *S from Chelsea*	**0.7 miles** (Silver Line Way)	82/7/8	162/14/15
	Outbound *N from South Station*	**0.7 miles** (Silver Line Way)	172/15/15	84/7/8
Red Line	**Northbound**	**0.7 miles** (Broadway Station)	190/16/18	1,029/83/97
	Southbound	**0.7 miles** (Broadway Station)	1,004/81/94	180/15/17
Commuter Rail[13]	**Inbound** *to terminus at South Station*	**1.2 miles** (South Station)	603	0
	Outbound *from terminus at South Station*	**1.2 miles** (South Station)	0	545
		TOTAL	**2,801 Daily**	**2,746 Daily**

[13] AM and PM peak hour Commuter Rail trips not studied per MassDOT guidance

7.8.1 Passenger Crowding Evaluation Methodology

To access passenger crowding within Existing, No-Build, and Phase 1 Build conditions for each of the identified surrounding transit routes, capacity levels and projected ridership growth were assessed for MBTA Bus, Silver Line, and Red Line services.

The existing conditions analyses began with establishing capacity for each of the identified service routes, based on the Maximum Vehicle Loads established in the MBTA's Service Delivery Policy. An existing condition utilization rate (v/c rate) was then calculated for each service type and route by dividing the hourly ridership by the hourly capacity for a.m. peak, p.m. peak, and off-peak periods. If the v/c rate was found to be 1.0 or above, then ridership would be at or exceeding capacity.

The future No-Build Condition and Phase 1 Build Condition analyses assumed the same peak hour and off-peak hour capacity as the Existing Condition. Using a seven-year horizon to project the No-Build Condition, an annual growth rate was applied to the existing ridership levels for each service type and route. Growth rates were identified in the Boston Region Metropolitan Planning Organization's Destination 2050 Needs Assessment.[14] For MBTA bus routes, an annual 0.34% growth rate was used. For the Silver Line routes, an annual 1.03% growth rate was used. For the Red Line, an annual 0.54% growth rate was used. A 2033 No-Build utilization rate (v/c rate) was then calculated for each service type and route by dividing the hourly ridership by the hourly capacity for a.m. peak, p.m. peak, and off-peak periods.

7.8.2 Existing Conditions Transit Analysis

The existing ridership data and MBTA capacity levels show v/c ratios below 1.0 for each of the identified bus routes, Silver Line routes, and Red Line service, with no trips exceeding the MBTA's Passenger Crowding Threshold.

7.8.3 No-Build Condition Transit Analysis

The No-Build Condition projected ridership and MBTA capacity levels show v/c ratios below 1.0 for each of the identified bus routes, Silver Line routes, and Red Line service, with no trips exceeding the MBTA's Passenger Crowding Threshold.

7.8.4 Phase 1 Build Condition Transit Analysis

One trip on the Silver Line 1 inbound service at the Silver Line Way stop was found to be exceeding the MBTA's Passenger Crowding Threshold, with an estimated two passengers found to be over the crowding threshold of 51 passengers during a single p.m. peak period trip; it is likely in this

[14] Future Conditions and Travel Demand - Projected Change in Person-Trips by Travel Mode, published by the Boston Region Metropolitan Planning Organization (https://storymaps.arcgis.com/collections/a3424af397574cae8c7789f433b89bca?item=3)

condition Phase 1-generated passengers would choose to take an earlier or later trip to avoid an uncomfortable ride. The Phase 1 Build Condition projected ridership and MBTA capacity levels show v/c ratios below 1.0 for each of the remaining identified bus routes, Silver Line routes, and Red Line service.

Table 7-30 shows the results of the passenger crowding evaluation summary for existing MBTA services, with summary tables and charts provided in Appendix E. A similar analysis on future Bus Network Redesign services could not be provided without detailed schedule and ridership projections and was not requested by MassDOT during pre-filing coordination. Analysis of the Master Plan Condition would require significant assumptions, and therefore would not provide reliable conclusions of future conditions or what mitigation could be required. Transit analyses on services in place at the time of future filings for the Master Plan Project will be provided.

Table 7-30 Passenger Crowding Evaluation Summary

MBTA Transit Line/Route	Direction	Distance from Phase 1 Site (Closest Stop)	Daily # of Trips	Estimated Daily # of Trips Over Capacity	Identified Trips estimated to be over capacity
Bus Route 4	**Inbound** *southeast from North Station*	**0.6 miles** (Summer St opp WTC Ave)	17	0	
	Outbound *northwest from Design Center*	**0.5 miles** (Drydock Ave @ Design Center Place)	17	0	
Bus Route 7	**Inbound** *northwest from City Point*	**0.3 miles** (Summer St @ Drydock Ave)	69	0	
	Outbound *southeast from South Station*	**0.3 miles** (Summer St @ Pappas Way)	70	0	
Bus Route 9	**Inbound** *northwest from City Point*	**0.3 miles** (West Broadway @ F St)	91	0	
	Outbound *southeast from Back Bay*	**0.3 miles** (West Broadway @ F St)	88	0	

Table 7-30 Passenger Crowding Evaluation Summary (Continued)

MBTA Transit Line/Route	Direction	Distance from Phase 1 Site (Closest Stop)	Daily # of Trips	Estimated Daily # of Trips Over Capacity	Identified Trips estimated to be over capacity
Bus Route 10	**Inbound** *northwest from City Point*	**0.3 miles** (Dorchester St @ Broadway)	41	0	
	Outbound *southeast from Arlington*	**0.3 miles** (Dorchester St @ East Broadway)	40	0	
Bus Route 11	**Inbound** *northwest from City Point*	**0.5 miles** (West Sixth St @ F St)	47	0	
	Outbound *southeast from South Station*	**0.5 miles** (West Seventh St @ F St)	47	0	
Silver Line (SL1)	**Inbound** *southwest from Airport*	**0.7 miles** (Silver Line Way)	117	1	PM Peak Trip starting at 4:30 *(2 passengers over capacity)*
	Outbound *northeast from South Station*	**0.7 miles** (Silver Line Way)	116	0	
Silver Line (SL2)	**Inbound** *northwest from Drydock Ave*	**0.7 miles** (Silver Line Way)	98	0	
	Outbound *southeast from South Station*	**0.7 miles** (Silver Line Way)	100	0	
Silver Line (SL3)	**Inbound** *south from Chelsea*	**0.7 miles** (Silver Line Way)	112	0	
	Outbound *north from South Station*	**0.7 miles** (Silver Line Way)	112	0	
Red Line	**Northbound**	**0.7 miles** (Broadway Station)	157	0	
	Southbound	**0.7 miles** (Broadway Station)	157	0	

7.9 Proposed Mitigation Measures

The Phase 1 Project and Master Plan Project will fill the existing void in the transportation and land use network which presently disconnects the South Boston neighborhood with the South Boston Waterfront between West First Street and Summer Street. The Phase 1 Site will initiate the evolution of the transportation system within the Master Plan Site; the Master Plan Project will broaden the existing east/west roadway network with new streets, extend F Street with accommodations for transit between West First Street and Summer Street (advanced in conjunction with Massport), and deemphasize Pappas Way as a vehicular corridor with the closure of the southern and northern portions of Pappas Way and redirection of vehicles toward F Street.

The Phase 1 Project and the Master Plan Project will:

- Create a hierarchy of street types based on uses and characteristics which connect into the existing City road network. New streets will be constructed or reconstructed to prioritize pedestrian, bicycling, and buses.
- Provide more than 12 acres of new rights-of-way (sidewalks and roadways) accessible to the public.
- Invest in an inviting pedestrian network (such as through traffic calming measures including curb extensions at crosswalks and intersections to improve pedestrian safety), improve existing sidewalks, and create new public spaces including along the Reserved Channel for an improved experience for pedestrians and bicyclists.
- Comply with the City of Boston's EV policy and Bike Parking Guidelines, as well as the Massport Sustainability Design Guidelines related to EV chargers and LEED bicycle storage requires, as applicable.
- Offer a robust transportation demand management ("TDM") program to reduce dependence on vehicle travel, minimize single occupancy vehicle ("SOV") drive trips, and enhance mobility via sustainable transportation modes.
- Establish precedent monitoring programs to guide refinement of the Master Plan Project with empirical Phase 1 Project operations, including monitoring travel behavior among tenants.
- Respect neighboring areas and maintain access without disruption as redevelopment occurs.
- Provide approximately 4,300 linear feet of new bicycle infrastructure.

Chapter 13 includes a list of proposed mitigation commitments, and Appendix A provides additional design-related considerations for the proposed transportation improvements.

The Phase 1 Site's frontage with the South Boston neighborhood along West First Street and Pappas Way will be significantly improved by the Phase 1 Project. A dedicated, two-way bicycle path, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, are proposed along the northern frontage of West First Street. The internal street network will be provided with street trees and planters, dedicated pedestrian space, instances of bi-directional bicycle lanes, and improved sidewalk.

In the Phase 1 Condition, a reconfiguration of the East First Street/West First Street/Pappas Way intersection will improve vehicular and multimodal safety through improved sight distances from the Pappas Way approach. Pappas Way and East First Street will meet at more of a 90-degree angle in order to reduce the curb-to-curb footprint of the intersection and reduce vehicle speeds. The improvement concept is consistent with the ideals cited in the South Boston Transportation Action Plan, and will continue to be refined in coordination with Massport and the City.

In the Master Plan Project full-build condition, Pappas Way is proposed to be discontinued between East First Street/West First Street and the proposed Road 1, creating a new open space. Closure south of Summer Street will transform Pappas Way into a more recreational travel corridor that prioritizes pedestrian and bicycles along with the waterfront open space along the Reserved Channel.

Land use and phased access has been carefully considered for the Master Plan Project. To support future development, the Phase 1 Project will create approximately 4.2 acres of new site access (new roadways open to the public and public realm improvements to support walkability) which will grow to over 12 acres through buildout of the complete Master Plan. Enhancing the utility of these roadways, within them approximately 1,500 linear feet of new bicycle infrastructure will be created in the Phase 1 Project, reaching approximately 4,300 linear feet through completion of the Master Plan.

The Phase 1 Project and the Master Plan Project are aligned with the City's multimodal travel ambitions, as expressed in local and citywide plans, and fits within the broader South Boston neighborhood and South Boston Waterfront travel network which includes facilitation of freight travel. The Phase 1 Site's roadway network is oriented to encourage vehicular access to and from the north via Summer Street, D Street, and Cypher Street, limiting the impacts of increased vehicle trips on the South Boston roadway network. The roadway network will be designed to discourage truck travel through the Phase 1 Site towards Conley Container Terminal, supporting the design intention of E Street to carry freight trips and reducing truck impacts on local streets such as East First Street.

Mitigation measures by specific modes are as follows:

7.9.1 Vehicular Mitigation

7.9.1.1 Phase 1 Project

The Phase 1 Project is not expected to meaningfully deteriorate operations in either the a.m. peak hour or p.m. peak hour at any study area intersection compared to the No-Build Condition. The Cypher Street/D Street and West First Street/D Street intersections each see deficient operations in the No-Build and Phase 1 Build conditions; the West First Street/D Street intersection is not included in the joint adaptive signal system operated jointly by the City and MassDOT in the study area. The Proponent will commit to signal timing improvements at this intersection which will improve intersection operations.

The Phase 1 Project proposes to modify the approach of Pappas Way with East First Street to allow these roadways to meet at more of a 90-degree angle than the present condition. This improvement will create sight distance improvements for motorists accessing East First Street from Pappas Way and reduce the curb-to-curb footprint of the intersection to reduce vehicle speeds and support multimodal travel. The improvement is consistent with the ideals cited in the SBTAP, including to accommodate the two-way cycle track along the northern frontage of West First Street east of this location. The concept will continue to be refined in coordination with Massport and the City as design progresses and be planned to not preclude the longer-term Master Plan objective.

Additional improvements associated with the Phase 1 site design involve the extension of F Street from West Street to Road 1. The centerline of Road 1 will be offset from the centerline of Cypher Street by approximately 60 to 65 feet. This offset allows for improved definition of E Street and Road 1 for vehicle traffic to and from Cypher Street by discouraging truck movements into and through the Phase 1 Site to and from Cypher Street, encouraging use of the E Street corridor and discouraging truck activity on local streets in the South Boston neighborhood such as East First Street.

The Phase 1 Site is designed to orient vehicle trips toward the regional highway network for access, particularly by designing for vehicle access to and from Block A and Block B via the internal Road 1 and E Street. Vehicle trips are anticipated to be funneled to and from South Boston Bypass Road, Haul Road, and Congress Street to access the I-90 and I-93 corridors. Impacts on residential streets to the south of the Phase 1 Site in the South Boston neighborhood as well as to neighborhoods undergoing redevelopment, such as the RLFMP, will be minimized.

The Phase 1 Project parking supply will be constrained to minimize dependence on auto travel and encourage the use of alternative, multimodal means of access. This is supported by the land use program for the Phase 1 Project itself, where the presence of uses such as a wellness/fitness center, grocery store, and restaurant and retail uses will encourage internal walking trips from the residential and commercial research laboratory uses. Active management of the vehicle parking program will seek to reduce spillover effects to the surrounding neighborhood.

The Proponent will provide EV charging and EV-ready infrastructure at all proposed parking facilities. A minimum of 10% of parking spaces within a parking garage on Massport-owned parcels will be equipped with EV charging upon opening, with an additional 15% of spaces supplied with EV-ready infrastructure. For Fee Parcels, the Proponent will comply with the City of Boston's EV policy by providing the equivalent of 25% of the total parking supply with EV chargers and sufficient infrastructure capacity for future accommodation of the remaining parking supply. Based on currently anticipated parking count for Phase 1, approximately 142 spaces across the Phase 1 Project parking garages will have EV chargers.

7.9.1.2 Master Plan Site

The Master Plan Site, with a disconnected Pappas Way from the East/West First Street corridor and a connected F Street to Anchor Street (further extended to Summer Street by others), will further knit the South Boston and South Boston Waterfront with a connected street grid which sensibly distributes traffic in a way which is not expected to exacerbate local congestion.

Several implications for these north/south connections between the South Boston neighborhood and the South Boston Waterfront in the Master Plan Condition will be considered as part of future traffic operations analyses associated with implementation of the Master Plan program, including:

- Traffic distribution on north/south streets between Broadway and West First Street/East First Street in the South Boston neighborhood, including how one-way directionality of streets south of West First Street (F Street, E Street) and the Master Plan Site street network north of West First Street will interact to facilitate vehicle travel. This will include analysis of operational, safety, and parking impacts associated with converting from one-way to two-way travel operations.

- Design of a future Summer Street/F Street/Drydock Avenue intersection, along with any proposed roadway reconfigurations raised in documents such as the RLFMP Master Plan such as the creation of a new Haul Road/Drydock Avenue intersection. These improvements are intended to create a more integrated street grid north of the Master Plan Site, with a particular benefit for the Master Plan Site of facilitating a north/south transit corridor along F Street between Silver Line Way and West First Street.

- A future connection of E Street with Summer Street at Pumphouse Road, which would likely make the Fargo Street/Summer Street intersection obsolete and could improve traffic operations along Summer Street.

7.9.2 Pedestrian and Bicycle Mitigation

7.9.2.1 Phase 1 Site

All rights-of-way will be designed taking into consideration the Boston Complete Streets guidelines and ultimately be subject to Massport approval. New sidewalks will be constructed adjacent to the Phase 1 Site in accordance with the requirements of the ADA/AAB. This will include reconstruction and widening of the adjacent sidewalks, the installation of new, accessible ramps, improvements to street lighting where necessary, planting of street trees, and providing bicycle storage racks. All internal streets will be owned and maintained by Massport.

Streetscape benefits of the Phase 1 Project include:

- 4.2 acres of new site access (new roadways open to the public and public realm improvements to support walkability).
- Provision of a dedicated, two-way bicycle lane, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along the northern frontage of West First Street. This is consistent with improvement concepts indicated for West First Street at this location in the SBTAP.
- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern frontage of Road 1, as well as sidewalks along the northern frontage of Road 1. The right-of-way of Road 1 will be expanded in the Master Plan Condition.
- Provision of bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.
- Provision of street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage. These temporary roads will be replaced when the parcels that abut them are developed and the right-of-way will be expanded.
- The provision of vehicle entrances along Road 1 to serve Block A and Block B are meant to preserve the West First Street and F Street frontages for non-vehicular access, as the Phase 1 Site design demonstrates. This design intention is carried through the Master Plan Site, with vehicle entrances designed to be accessed from secondary east/west streets with north/south streets, such as F Street and Pappas Way, designed to facilitate multimodal travel, uninterrupted by curb cuts.
- Bicycle facilities will be provided in accordance with BTD's Bike Parking Guidelines, where applicable. This will include the provision of short-term and long-term bicycle parking in convenient locations for all user types for different land uses associated with the Phase 1

Project. The Phase 1 Project will also work with BTD to fulfill BTD's bikeshare requirement, built out by applicable building. Bicycle parking on Massport-owned parcels will comply with LEED requirements.

7.9.2.2 Master Plan Site

Streetscape benefits of the Master Plan Project are anticipated to include:

- Approximately 12 acres of new site access (new roadways open to the public and public realm improvements to support walkability).
- Provision of bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.
- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern and northern frontages of Pappas Way.
- Provision of a single bicycle lane adjacent to the central open space, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along Road 2 and Road 3.
- Provision of street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern and northern frontages of Road 1 (expanded in the Master Plan Condition to accommodate the northern frontage), Road 4, and Fargo Street. Street trees and pedestrian space will be provided along the eastern frontage of Road 5, with street trees along each side and pedestrian space along the southern frontage of Anchor Street.
- Provision of street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage.
- Creation of open space between East First Street/West First Street and Road 1, which has been requested by the community, with F Street serving as the primary north/south vehicle connection through the Master Plan Site between Summer Street and West First Street.
- The provision of vehicle entrances along Road 1, Anchor Street, and Road 5 are meant to preserve the Road 2, Road 3, Pappas Way and F Street frontages for non-vehicular access, as the Master Plan Project site design demonstrates. This design intention is carried through from the Phase 1 Project.
- The proposed closure of Pappas Way in the Master Plan Condition south of Road 1 (disconnecting from East First Street/West First Street) and north of Fargo Street (disconnecting from Summer Street) will provide a multimodal travel corridor and waterfront open space along the Reserved Channel.

7.9.3 Transit Mitigation

7.9.3.1 Phase 1 Site

The Phase 1 Site allows for future integration of bus service along new roadways, such as F Street and Road 1. This fits with the Master Plan Project goal of a well-integrated, continuous street grid between West First Street and Summer Street. The F Street right-of-way in the Phase 1 Site is designed to facilitate a potential future transit service connecting the South Boston neighborhood with the South Boston Waterfront, allowing for front-door access to the Phase 1 Site. Road 1 is designed to allow for integration of an east/west transit service should one be integrated in the future.

A transit capacity analysis showed existing MBTA services as having sufficient capacity to accommodate Phase 1 Project-generated trips. Changes to the local bus network borne by the MBTA's BNRD project will re-orient how transit users access the Phase 1 Site, mainly through closer service provided by the BNRD Route 12 service on D Street.

The Phase 1 Project will replace deficient sidewalks, curb ramps, and pedestrian crossings between the Phase 1 Site and existing and future BNRD transit services along Broadway (Route 9, via F Street), D Street (future BNRD Route 12, via Cypher Street or West First Street dependent upon future bus stop location) and Summer Street (Route 7, via Pappas Way). Details of these improvements will be determined in coordination with the City and MBTA.

7.9.3.2 Master Plan Site

F Street will be designed to serve as a multimodal corridor which, in a future condition with continuous travel between West First Street and Summer Street, allows for the introduction of a north/south transit service which can better carry visitors from regional transit hubs such as South Station. Subsequent street grid buildout envisioned by Massport could create a continuous north/south corridor between Broadway and Northern Avenue via F Street, including connection to the Silver Line. Subsequent filings as the Master Plan Program is advanced will detail possibilities for transit services along the F Street corridor which may connect to the RLFMP and Broadway.

7.9.4 Transportation Demand Management

The Phase 1 Project and Master Plan Project will be supported by a robust transportation demand management ("TDM") program intended to reduce dependence on vehicle travel, minimize single occupancy vehicle ("SOV") drive trips, and enhance mobility via sustainable transportation modes. This TDM program will be developed based upon the latest BTD TDM Point System model based on the Phase 1 Site's mobility score. At a minimum, the TDM program will include:

- Membership in the Seaport Transportation Management Association ("TMA")

- Designation of an on-site Transportation Coordinator. The Transportation Coordinator will oversee all transportation management including the following measures:
- Marketing that promotes multimodal travel options and benefits
- At least two annual events that promote multimodal travel
- Real-time transit information in building lobbies
- Emergency Ride home services or reimbursement
- Participation in the MBTA Perq program
- Provision of an option of unbundled market rate parking as part of tenant leases

Additional TDM measures to be considered will include provision of transit pass subsidies, parking pricing, carpool incentives, and support for micromobility. The Proponent will closely evaluate the provision of micromobility solutions such as e-bikes and e-scooters, including provision of rental equipment for tenants and charging infrastructure in bicycle rooms.

7.9.5 Monitoring

The travel characteristics of tenants of the Phase 1 Site will be actively monitored to support compliance with the TDM program and assess the ability of the Phase 1 Site to facilitate walking, bicycling, transit, and carpooling trips. Future submissions detailing the Master Plan Project conducted while the Phase 1 Site is operational will evaluate the Phase 1 Site's ability to meet the Phase 1 Project's mode share projections and inform Master Plan Site design and mitigation program development, including TDM commitments.

The Master Plan Project carries more ambitious mode share targets (based on aspirational figures outlined in Go Boston 2030) than the Phase 1 Project, speaking to the importance to first establish a strong, multimodal focus with the Phase 1 Project which can be built upon as part of the Master Plan Site design.

7.9.6 Construction Management

Most construction activities will be accommodated within the current Phase 1 Site. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan ("CMP") to be filed with BTD in accordance with the City's transportation maintenance plan requirements and with Massport.

To minimize transportation impacts during the construction period, the following measures will be considered for the CMP:

- Limited construction worker parking on-site;

- Encouragement of worker carpooling;
- Consideration of a subsidy for MBTA passes for full-time employees; and
- Providing secure spaces on-site for workers' supplies and tools so they do not have to be brought to the construction site each day.

The CMP to be executed with the City prior to commencement of construction will document all committed measures.

Chapter 8

Infrastructure

8.0 INFRASTRUCTURE

8.1 Water

8.1.1 Existing Water Supply System

BWSC owns and maintains water mains in all streets bordering the Master Plan Site. As shown in Figure 8-1, the water infrastructure includes:

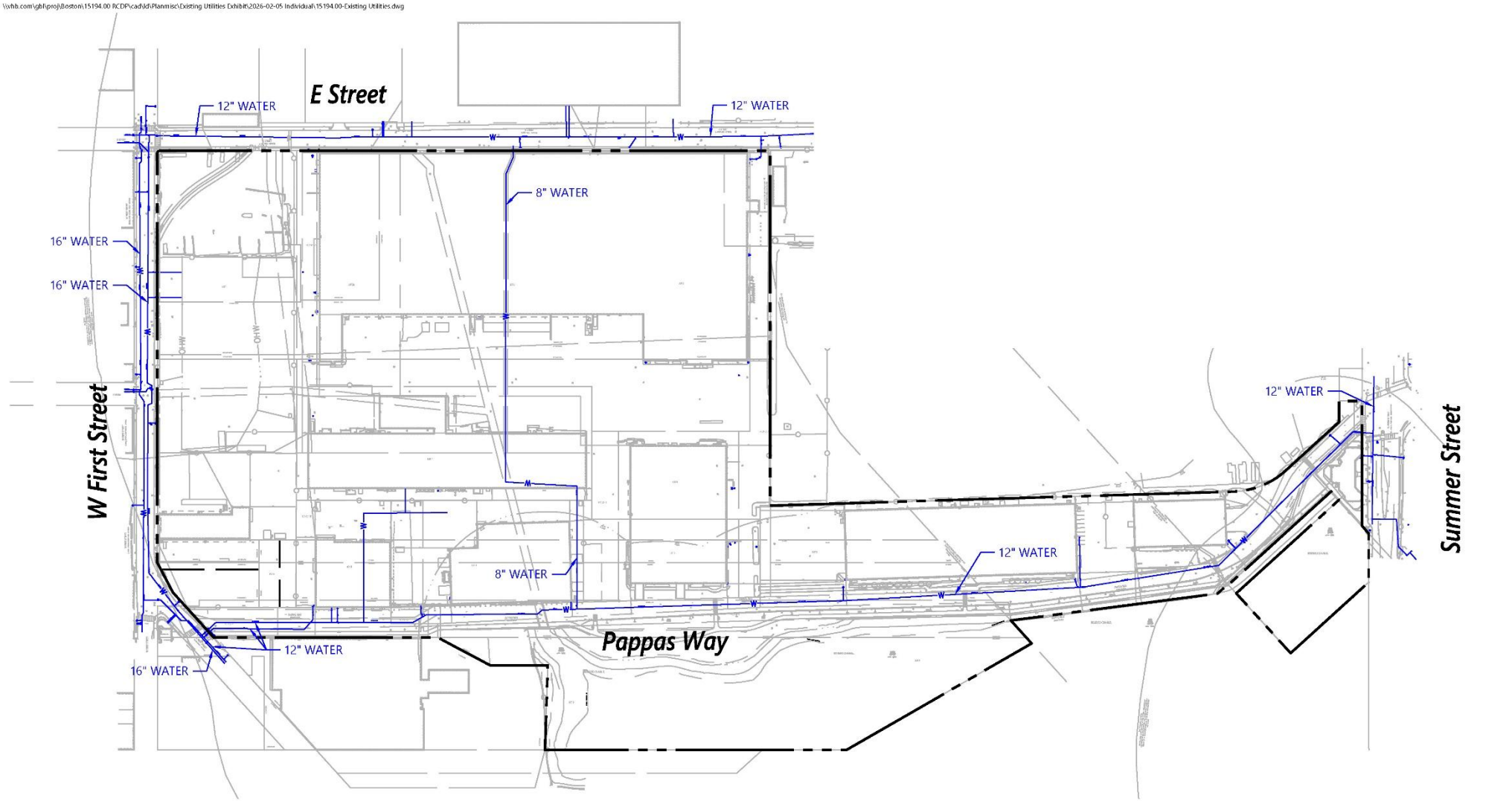
- E Street – A 12-inch ductile iron cement lined ("DICL") water main installed in 2003 within the Southern Low-Pressure Zone.
- Summer Street – A 12-inch pit cast iron water main installed in 1916 which was cleaned and cement lined in 1992 within the Southern Low-Pressure Zone.
- West First Street- Two 16-inch DICL water mains installed in 2011 and 2012 within the Southern Low-Pressure Zone (the 16-inch installed in 2012 is within the Southern High Pressure Zone).
- Pappas Way – A 12-inch water main extending from East First Street to a hydrant off Pappas Way within the Southern High Pressure Zone.

Additionally, a 12-inch private water main is located in Pappas Way and a 8-inch private water main that extends northwest from the private main in Pappas Way towards E Street.

8.1.2 Proposed Water Demand and Connection

Domestic water demand is based on estimated sewage generation with an added factor of 10% for consumption, system losses, and other use. Based upon standard sewage generation rates outlined in the MassDEP System Sewage Flow Design Criteria, 310 CMR 15.203, the Master Plan Project will require approximately 820,842 gallons per day ("GPD") of water. The Proponent will continue to consider and evaluate methods to conserve water as building design evolves.

New water connections to BWSC infrastructure will be designed in accordance with BWSC design standards and requirements. Water services to new buildings will be metered in accordance with BWSC's Site Plan Requirements and Site Review Process. The review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and fire department connections to ensure conformance with BWSC, Boston Fire Department ("BFD"), and Massport Fire Marshal requirements, as required. The Proponent will provide for the connection of each meter to BWSC's automatic meter reading system.



Existing Utilities - Water

RCDP

Boston, MA 02210

Source: **VHB**
Prepared for: **Review**
Date: **March 27, 2026**

0 100 200 Feet

vhb

The Proponent will meet, prior to the initial site plan development, with the BWSC's Design and Engineering Customer Services Departments to review water main availability and potential upgrades that could impact each building within the development. This will ensure that sufficient capacity exists for each building.

8.1.3 Water Conservation Measures

The Master Plan Project will include water conservation measures. As the design of buildings moves forward, it is anticipated that the following low-flow/high-efficiency domestic and commercial plumbing fixtures:

- 1.28 gallons per flush ("gpf") water closet;
- 0.125 gpf urinal;
- 0.35 gallon per minute ("gpm") lavatory faucet;
- 1.5 gpm shower head; and
- sensor-operated faucets and toilets in common areas of buildings.

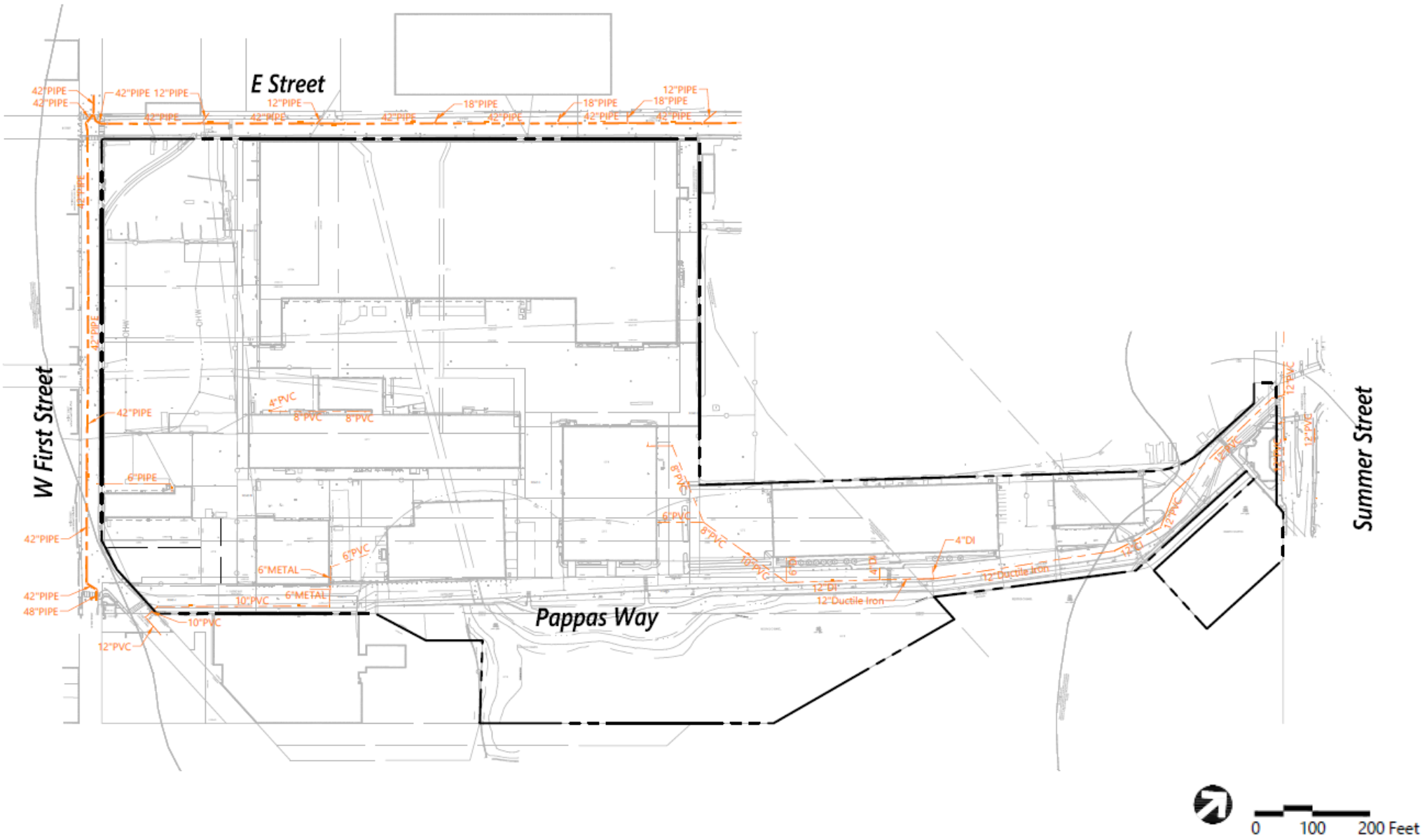
Using low-flow and high-efficiency plumbing fixtures, the proposed buildings are expected to reduce potable water use. WaterSense labeled fixtures will be specified where applicable. The Master Plan Project's at-grade landscape design and the vegetated areas will use a mixture of drought tolerant trees, shrubs, and groundcover that grow well in an urban environment. The irrigation system will be designed to be efficient and use significantly less potable water when compared to a conventional irrigation system through the use of timers, soil moisture indicators and rainfall sensors.

8.2 Wastewater

8.2.1 Existing Sewer System

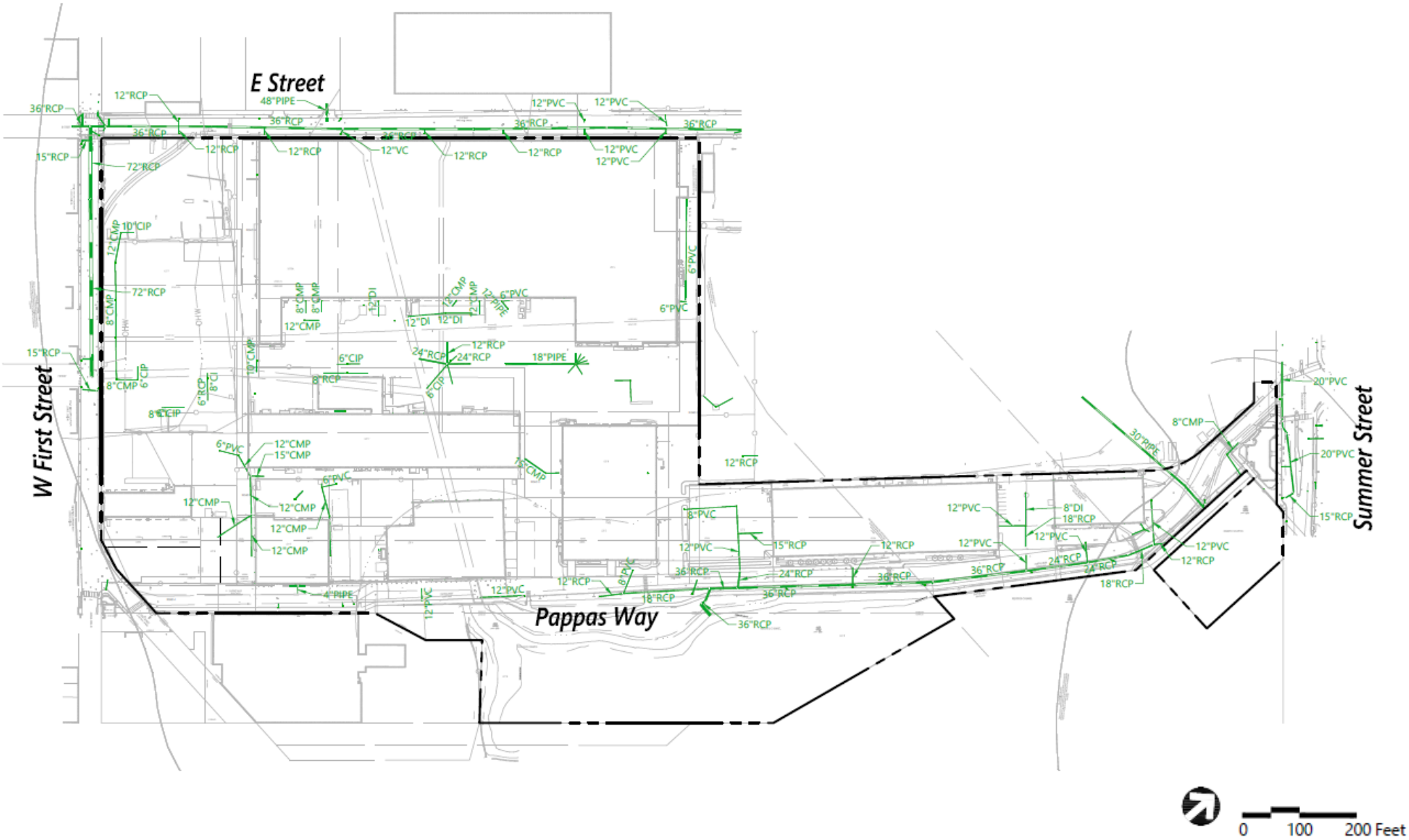
BWSC owns and maintains sewer and drain service in the vicinity of the Master Plan Site. As shown in Figures 8-2 to 8-4, the sewer and drain infrastructure includes:

- E Street - A 30-inch by 45-inch sewer and 36-inch storm drain.
- Summer Street - Two 12-inch sewers, an 18-inch storm drain, and a 72- inch storm drain.
- West First Street - A 42-inch sewer and 72-inch by 48-inch storm drain. The 72-inch by 48-inch storm drain changes to a 72-inch combined sewer overflow ("CSO") pipe at a regulator located near the intersection of West First Street and F Street.
- Pappas Way - A 10- inch sanitary sewer and an 84-inch CSO pipe.



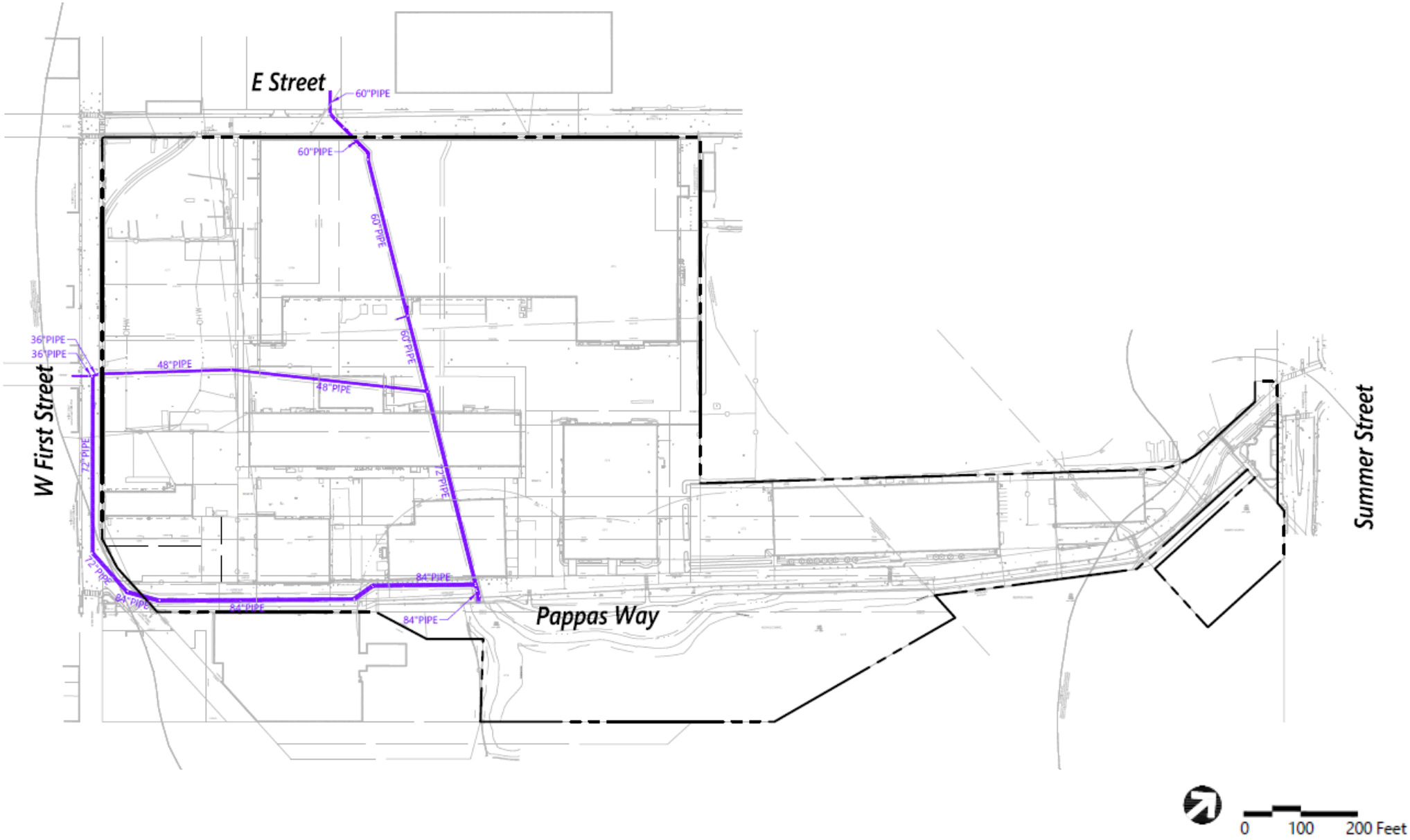
Reserved Channel Development Boston, Massachusetts

Figure 8-2
Existing Utilities- Sewer



Reserved Channel Development Boston, Massachusetts

Figure 8-3
Existing Utilities- Drainage



Reserved Channel Development Boston, Massachusetts

Figure 8-4
Existing Utilities - CSO

In addition, BWSC owns two CSO pipes that traverse the Master Plan Site. A 48-inch pipe extending easterly from the regulator chamber at F Street that ends at a manhole that transitions a 60-inch CSO pipe to a 72-inch pipe. The 60-inch CSO pipe extends across E Street in a southeasterly direction under the WB Mason building, onto the Master Plan Site and increases to a 72-inch pipe that ends at an outfall in the Reserved Channel. There is also a private sewer on the Master Plan Site within Pappas Way that serves 647B Summer Street.

8.2.2 Proposed Sewage Flow and Connection

Table 8-1 summarizes the proposed estimated sewer generation based on Massachusetts State Environmental Code (Title 5) generation rates. Based on the anticipated development program, the Master Plan Project is estimated to generate approximately 722,812 GPD of new sanitary sewage flow.

Changes to the proposed building program will vary the anticipated sanitary flow. Final flow estimates will be determined as each building and/phase advances in design. New sewer connections to BWSC infrastructure will be designed in accordance with BWSC design standards and requirements. Sewer services to new buildings will be in accordance with BWSC's Site Plan Requirements and Site Review Process. Proposed utilities are depicted in Figure 8-3.

8.2.3 Infiltration and Inflow Mitigation

Following MassDEP and BWSC policy, projects that generate flows greater than the 15,000 gpd threshold are responsible for mitigating infiltration and inflow ("I/I") at a ratio of 4:1 relative to the net new wastewater generated. Since the Master Plan Project is expected to generate an increase of net new sanitary flows of approximately 722,062 GPD, the Master Plan Project intends to mitigate the impacts in accordance with BWSC and MassDEP policies in effect at the time of each building permit or water service activation in accordance with its then generated flows. It is anticipated that the Master Plan Project will mitigate the impacts of the development by removing approximately 2,888,248 GPD of I/I present in the existing sanitary sewer system. I/I is the component of flows in sanitary sewer systems that does not come from wastewater generated by building uses. I/I includes groundwater infiltration from leaking/broken sewer infrastructure as well as illicit stormwater connections from roof leaders and drainage infrastructure.

As the design of individual buildings advances and approval is sought, BWSC will review and confirm appropriate mitigation volume and value of compensation to be paid to the I/I mitigation fund, or provided through alternative mitigation mechanisms, such as individual improvement projects. The Proponent is committed to working with BWSC to define appropriate I/I mitigation.

Table 8-1 Master Plan Project Sewage Generation

Block	Use	Program	Rate	GPD
A	Residential	800 bedrooms	110 gpd/bedroom	88,000
	Restaurant	315 seats	35 gpd/seat	11,025
	Retail	5,000 sf	50 gpd/1,000 sf	250
B	Residential	1,070 bedrooms	110 gpd/bedroom	117,700
	Restaurant	150 seats	35 gpd/seat	5,250
	Retail	6,500 sf	50 gpd/1,000 sf	325
	Grocer	20,000 sf	97 gpd/1,000 sf	1,940
C	Commercial Research Lab	567,000 sf	75 gpd/1,000 sf	42,525
	Restaurant	425 seats	35 gpd/seat	14,875
	Club with Lockers/Showers	1,000 participants	25 gpd/participant	25,000
D	Commercial Research Lab	541,000 sf	75 gpd/1,000 sf	40,575
	Residential	414 bedrooms	110 gpd/bedroom	45,540
	Retail	20,000 sf	75 gpd/1,000 sf	1,500
E	Commercial Research Lab	944,000 sf	75 gpd/1,000 sf	70,800
	Residential	464 bedrooms	110 gpd/bedroom	51,040
	Retail	30,000 sf	75 gpd/1,000 sf	2,250
F	Park	-	-	-
G	Commercial Research Lab	325,000 sf	75 gpd/1,000 sf	24,375
	Retail	10,000 sf	75 gpd/1,000 sf	750
H	Commercial Research Lab	749,000 sf	75 gpd/1,000 sf	56,175
	Residential	406 bedrooms	110 gpd/bedroom	44,660
	Retail	19,000 sf	75 gpd/1,000 sf	1,425
I	Commercial Research Lab	746,000 sf	75 gpd/1,000 sf	55,950
	Retail	25,000 sf	75 gpd/1,000 sf	1,875
J	Commercial Research Lab	207,000 sf	75 gpd/1,000 sf	15,525
	Retail	10,000 sf	75 gpd/1,000 sf	750
K	Hotel	224 bedrooms	110 gpd/bedroom	24,640
	Retail	10,000 sf	75 gpd/1,000 sf	750

EXISTING:	**23,408**
MASTER PLAN TOTAL:	**745,470**
NET NEW:	**722,062**

8.2.4 Sewer Discharge Mitigation

Laboratory or facilities that discharge chemicals or other industrial waste require a Sewer Use Discharge Permit from the MWRA's Toxic Reduction and Control ("TRAC") Department. The Master Plan Project is committed to filing appropriate documentation for a Sewer Use Discharge Permit as information of potential toxic discharges is available.

Oil/gas separators are required by the Massachusetts Uniform State Plumbing Code and the MWRA in parking garages and loading docks. The Master Plan Project is committed to using oil/gas separators as required and will notify the MWRA of the installation of a new oil/gas separator so that it may be inspected and approved prior to backfilling.

The Proponent will meet, prior to the initial site plan development, with the BWSC's Design and Engineering Customer Services Departments to review sewer and storm drainage system availability and potential upgrades that could impact the development. This will ensure that sufficient capacity exists for each building.

Chapter 9

Hazardous Waste

9.0 HAZARDOUS WASTE

9.1 Introduction

As required by the ENF Certificate, this chapter provides additional information to address the "Hazardous Waste" section of the DEIR Scope.

9.2 Existing Site Conditions

There are multiple known Release Tracking Numbers ("RTNs") associated with releases of oil and hazardous materials ("OHM") which have been reported to MassDEP, and which are located within the Master Plan Site, as listed in Table 9-1 and shown on Figure 9-1. Figures 9-1 and 9-2 also show the RTNs in relation to the proposed streets, open spaces, buildings, and for Phase 1 utilities. These releases are primarily attributed to historic/urban fill soil placed as part of area filling in the 1940s and/or related to releases of petroleum and other OHM from past industry and naval uses. The Disposal Sites have reached regulatory closure under the Massachusetts Contingency Plan ("MCP"). Two of the RTNs rely on Activity and Use Limitations ("AULs") to maintain a Condition of No Significant Risk as documented in Table 9-1.

The Proponent has engaged a Licensed Site Professional ("LSP") to assist with redevelopment planning. As each block or building is redeveloped, soil and groundwater characterization will be conducted to define the extent of contamination, and the appropriate MCP response actions will be integrated with the redevelopment of each block or building.

Table 9-1 Summary of MCP Disposal Sites at the Master Plan Site

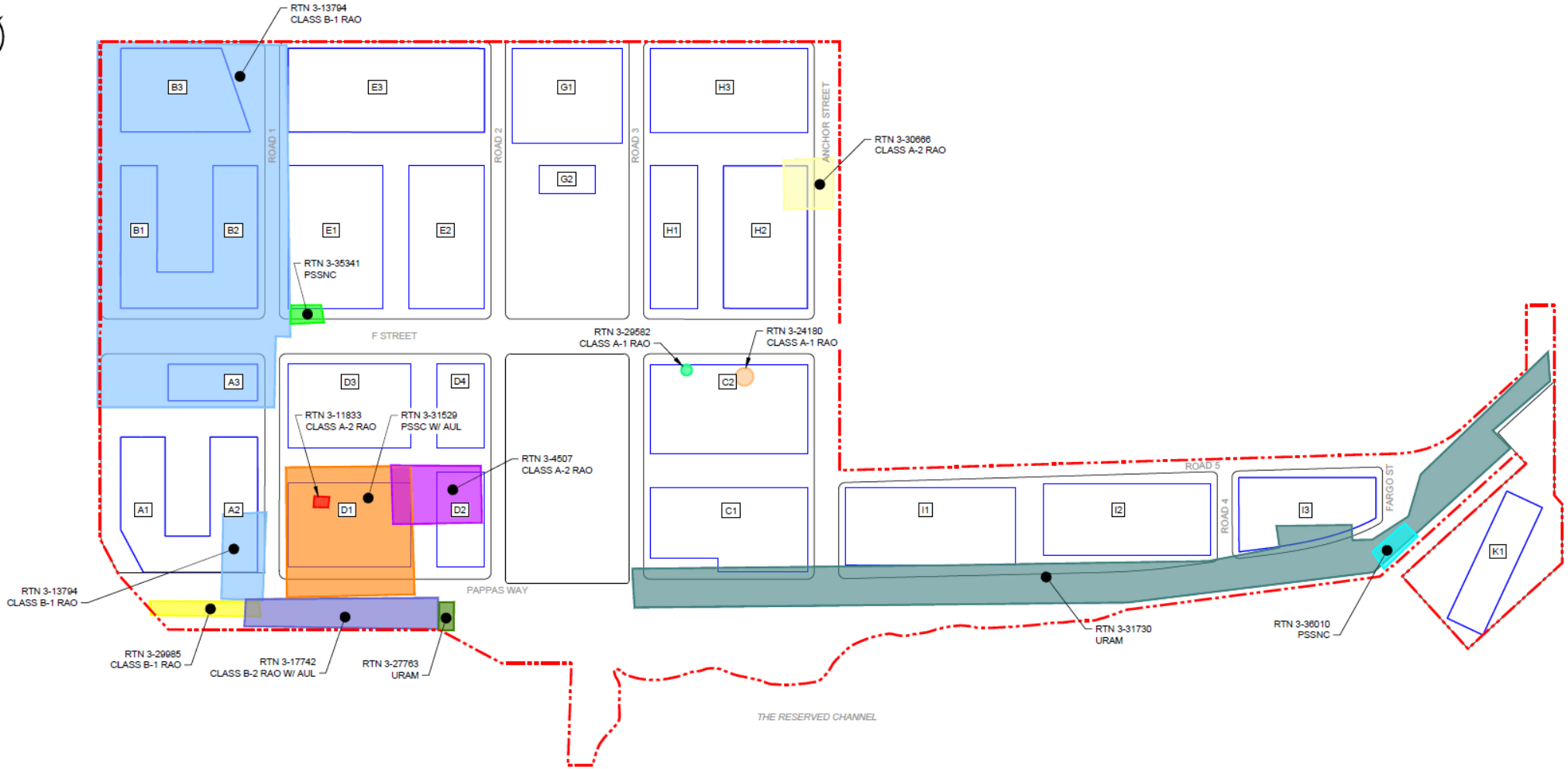
Release Tracking Number	Site Address/ Parcel ID	Release Description	Compliance Status	AUL (Yes/No)	AUL Prohibited Uses and Obligations
3-0004507	651 Summer Street/ Block D	Leaking Underground Storage Tank	Class A-2 Response Action Outcome ("RAO")	No	--
3-0011833	649 Summer Street/ Block D	Leaking Underground Storage Tank	Class A-2 RAO	No	--
3-0013794	300 West First Street/ Block A/B	Urban Fill	Class B-1 RAO	No	--

Table 9-1 Summary of MCP Disposal Sites at the Master Plan Site (Continued)

Release Tracking Number	Site Address/ Parcel ID	Release Description	Compliance Status	AUL (Yes/No)	AUL Prohibited Uses and Obligations
3-0016841	370 West First Street/ Block A	Chlorine and Sodium Hypochlorite	Class A-1 RAO	No	--
3-0017742	Pappas Way/ Block A/D	Urban Fill	Class B-2 RAO	Yes	Use as residence, school, daycare, nursery, playground, recreational area, agricultural activity, removal of pavement prohibited.
3-0024180	647B Summer Street/ Block C	Diesel Fuel	Class A-1 RAO	No	--
3-0027763	Pappas Way/ Block D	Urban Fill	Utility Related Abatement Measure ("URAM")	No	--
3-0029582	647B Summer Street/ Block C	Formalin (37% Formaldehyde Solution)	Class A-1 RAO	No	--
3-0029985	Pappas Way	Urban Fill	URAM	No	--
3-0030666	647 Summer Street/ Block H	Mineral Oil Dielectric Fluid (MODF)	Class A-2 RAO	No	--

Table 9-1 Summary of MCP Disposal Sites at the Master Plan Site (Continued)

Release Tracking Number	Site Address/ Parcel ID	Release Description	Compliance Status	AUL (Yes/No)	AUL Prohibited Uses and Obligations
3-0031529	651 Summer Street/ Block D	Urban Fill	Permanent Solution with Conditions	Yes	Access to Site soils and the use of the Disposal Site for residential use and for growing consumable produce prohibited.
3-0031730	Pappas Way/ Block C, I, J	Urban Fill	URAM	No	--
3-0035341	647 Summer Street/ Block H	Sulfuric Acid	Permanent Solution with No Conditions	No	--
3-0036010	643 Pappas Way/ Block J	Diesel Fuel	Permanent Solution with No Conditions	No	--

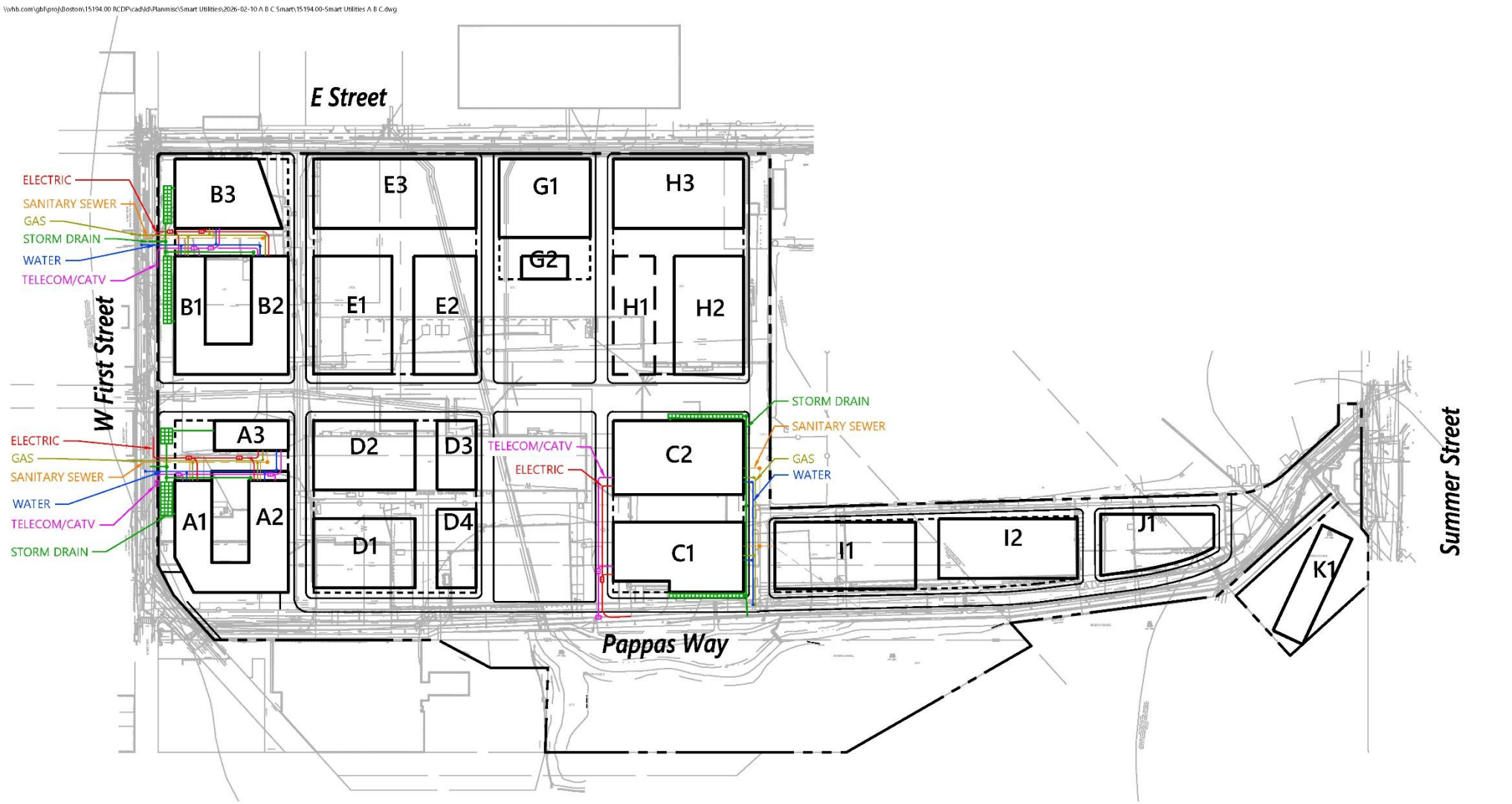


Reserved Channel Development Boston, Massachusetts

HALEY ALDRICH

Figure 9-1

Full Site Building Framework with RTN Boundaries



Phase I - Block A/B/C Utilities

RCDP

Boston, MA 02210

Source: **VHB**
Prepared for: **Review**
Date: **March 27, 2026**

Legend

- Water
- Sewer
- Drain
- Gas
- Telecom
- Electric

0 100 200 Feet

Reserved Channel Development Boston, Massachusetts

Figure 9-2
Blocks A, B, and C Utilities

Environmental Soil Conditions

As noted above, there are multiple known releases of OHM to soil and/or groundwater across the Master Plan Site. The releases are primarily attributed to historic/urban fill soil placed as part of area filling in the 1940s and/or releases of petroleum and other OHM from past industrial use.

Soil impacts at the Master Plan Site are listed in Table 9-1. Soil contaminants generally consist of urban fill constituents (metals and polycyclic aromatic hydrocarbons; PAHs), volatile organic compounds ("VOCs"), and petroleum constituents. Soil impacts have generally been limited to urban fill soils that extend to depths of approximately 5 to 30 feet across the Master Plan Site. Additional soil assessment will be conducted by the LSP prior to construction at each block or building.

Environmental Groundwater Conditions

Because of the Master Plan Site's waterfront location, groundwater levels are anticipated to be subject to tidal influence. In general, groundwater levels at the Master Plan Site may reflect tide levels in the harbor, typically ranging from approximate elevation 1.5 feet to 11.5 feet BCB (-5.0 to 5.0 feet NAVD88). Groundwater was typically measured, at the recently installed observation wells, between approximate elevation 8.0 feet and 13.0 feet BCB (1.5 feet and 6.5 feet NAVD88). Groundwater levels will fluctuate, as they are influenced by tides, precipitation, the presence of below grade structures and utilities in the area, leakage into or out of utility pipes, the infiltration of surface water runoff, construction activities, localized water recharging, and other factors.

Across most of the Master Plan Site, environmental assessment of groundwater quality has indicated no contaminants above Reportable Concentrations, except for the areas described below:

- 647 Summer Street/Block H: light, non-aqueous phase liquid ("LNAPL") has been observed historically in groundwater monitoring wells.
- 651 Summer Street/Block D: elevated concentrations of total petroleum hydrocarbons ("TPH") have been detected historically in groundwater at the property.
- Pappas Way: elevated concentrations of PAHs and petroleum hydrocarbons have been detected historically in groundwater beneath Pappas Way.
- 300 and 370 West First Street/Blocks A and B: elevated concentrations of metals and PAHs have been detected historically in groundwater at the property.

At the locations of known groundwater contamination, as determined by the LSP, stormwater infiltration will be restricted to limit the potential for contaminant migration, and vapor intrusion evaluations will be performed prior to construction of any new buildings.

Existing AULs

As summarized in Table 9-1, there are two existing AULs recorded at the Master Plan Site. Generally, the AULs require maintenance of Protective Cover to mitigate contact with underlying contaminated soils and restrict certain site uses (such as residential or schools). In these areas, response actions are planned to be conducted in conjunction with site redevelopment which will achieve a Condition of No Significant Risk for the proposed uses, and the AULs will be amended accordingly to allow those uses.

The AULs require that future soil management during construction be conducted under the oversight of an LSP. Prior to subsurface work occurring, the following will be implemented:

- A Release Abatement Measure ("RAM") Plan will be submitted to MassDEP outlining the plan to demolish and replace protective cover, manage contaminated soil and/or groundwater during the work, and/or construct vapor intrusion mitigation systems.
- Any contractor disturbing or in contact with contaminated soils will be required to have OSHA 40-hr HAZWOPER training.
- If contaminated soil will be exposed or disturbed, dust control and perimeter dust monitoring will be implemented to mitigate construction worker and abutter exposure to dust.

Asbestos

City records reviewed indicate multiple asbestos abatement permits on file for the Master Plan Site's buildings, confirming that some older structures did contain ACM that required removal (specifically 647/647A Summer Street and 653 Summer Street). Given the construction era of most of the buildings on-site (1960s–70s), other Master Plan Site buildings may have contained or still contain some asbestos in original materials (e.g., insulation, floor tiles, siding). An assessment to determine which specific buildings may contain asbestos has not been completed. The Proponent has been handling, and will continue to handle, these hazards separately via building-specific hazardous material inspections. All known ACM on-site will be abated prior to demolition or redevelopment of the affected structures.

9.3 Proposed Conditions and Mitigation Measures

Prior to the start of construction activities, an LSP will evaluate site conditions and conduct additional soil, groundwater, and/or soil gas sampling as appropriate. Construction activities which disturb contaminated soil or groundwater will be conducted in accordance with the provisions of MGL c.21E (and, potentially, C.21c), the Massachusetts Contingency Plan (310 CMR 40.0000), and all other applicable federal, state, and local laws, regulations, and bylaws.

Construction activities will be performed under a RAM Plan (or similar regulatory document) describing planned response actions, contaminated soil and groundwater handling and disposal approach, and health and safety precautions. The RAM Plan will include provisions for work zone and perimeter dust and VOC monitoring. To the extent that groundwater is encountered during construction, it will be pumped from the excavation, treated (if required) and discharged off-site under an MWRA Temporary Construction Dewatering Permit or NPDES Dewatering and Remediation General Permit.

Excavation of contaminated soils to construct clean utility corridors will be conducted for all new utility installations.

If required based on site-specific risk characterizations conducted by the LSP, long-term mitigation measures may include:

- Implementation and maintenance of protective cover (e.g., building slab, pavement or clean soil cover) to mitigate exposure to impacted soil; and/or
- Vapor barriers and sub-slab depressurization systems to mitigate potential for vapor intrusion in areas of VOC contamination.
- If long-term/permanent mitigation measures are required to achieve a condition of No Significant Risk, AULs will be implemented to prescribe allowable and prohibited uses and to require ongoing operation, maintenance and/or monitoring of the mitigation measures.

MassDEP-established climate change resiliency regulations in the 2024 Massachusetts Contingency Plan which will be incorporated into the Master Plan Project design and selection of response actions. In accordance with 301 CMR 40.0192(3)(f), response actions associated with the Master Plan Project will incorporate climate change resilience to the extent practicable and consistent with response action requirements. A climate change vulnerability assessment that considers the four primary exposure parameters (precipitation, sea level rise, extreme weather, and temperature change) in the updated 2023 Massachusetts State Hazard Mitigation and Climate Adaptation Plan ("SHMCAP") and site-specific sensitivity to the projected adverse impacts of climate change will be prepared as part of future planning and response actions.

9.3.1 RTNs Impacted by Construction

Figure 9-1 shows the location of existing RTNs in relation to each of the proposed buildings. As described previously, an LSP will evaluate site conditions prior to construction at each parcel and conduct additional soil, groundwater, and/or soil gas sampling as appropriate to identify necessary response actions to be conducted in conjunction with redevelopment. Construction activities will be performed under the oversight of an LSP.

9.3.2 Groundwater Management

Groundwater within portions of the Master Plan Site may be impacted by metals, PAHs, and/or petroleum constituents, as discussed above. Additional groundwater assessment activities will be performed to evaluate conditions at each block or building site prior to construction. If groundwater is encountered during construction activities, it will be managed under the oversight of an LSP and in accordance with a RAM Plan, Soil and Groundwater Management Plan, and Health and Safety Plan.

If temporary construction dewatering is required to facilitate construction activities, dewatering will be performed under a MWRA Temporary Construction Dewatering Permit or a NPDES Dewatering and Remediation General Permit, as appropriate. Baseline groundwater sampling will be performed in the area of dewatering to evaluate groundwater conditions prior to dewatering, and a groundwater treatment system will be designed and operated as needed to meet the requirements of the Construction Dewatering or Remediation General Permit.

An LSP will evaluate groundwater conditions, proposed construction dewatering, and proposed stormwater infiltration to make recommendations for water management that will be protective of groundwater quality and avoid exacerbating groundwater contamination.

9.3.3 Air Monitoring During Construction

To mitigate potential exposure to contaminated dust and vapors during construction, the LSP will evaluate and recommend an air monitoring program as needed, which will be described in the RAM Plan. Consistent with MassDEP guidance and the MCP, an evaluation of contaminant concentrations in soil and groundwater will be completed to determine site-specific dust and VOC action levels protective of construction workers and nearby human receptors. Air monitoring will include the installation of real-time, perimeter air monitoring stations that will be located based on wind direction and sensitive receptors. Air monitoring instrumentation capable of detecting contaminants at the action levels will be utilized and will provide alerts when concentrations are approaching action levels. In addition, the air monitoring program will include mitigation measures for dust and vapors that will be employed by the contractor, as necessary.

Construction in areas of VOC-impacted soil or groundwater, if applicable, will be evaluated by an LSP for potential vapor intrusion concerns. Where necessary, vapor intrusion mitigation systems including a sub-slab vapor barrier and sub-slab depressurization system will be designed and installed as part of the new construction. Vapor intrusion mitigation systems will be designed in accordance with MassDEP guidance and the MCP. Confirmatory indoor air sampling will also be performed in accordance with the MCP and MassDEP guidance.

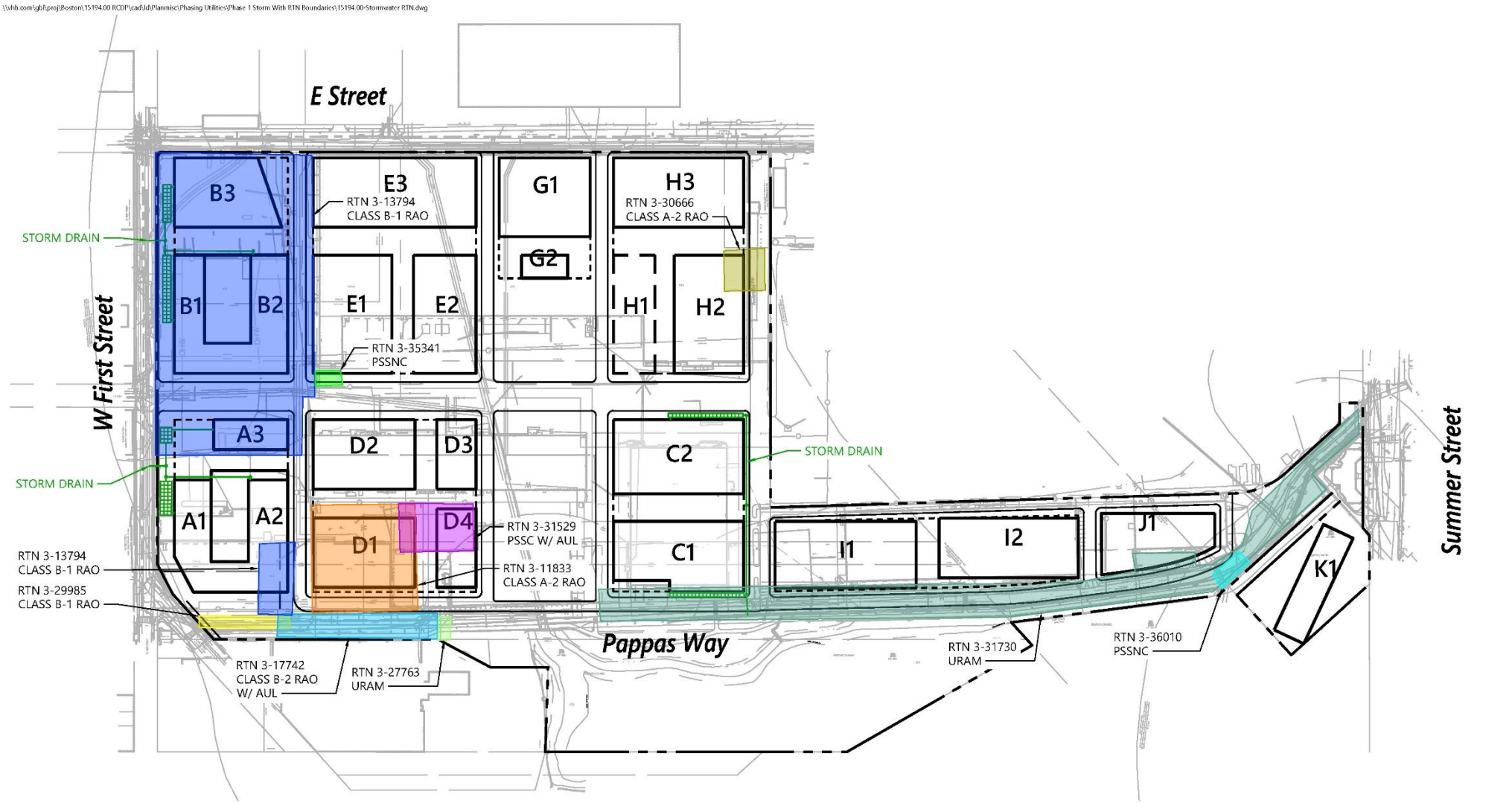
9.3.4 Stormwater Management

One of the Master Plan Project's objectives is to infiltrate stormwater within the Master Plan Site boundary at higher recharge rates than those being achieved in the existing conditions. Therefore, stormwater will be stored and infiltrated within the Master Plan Site using basins, chambers,

and/or recharge wells where subsurface conditions allow for such infiltration. The LSP will review proposed locations, volumes, and frequency of infiltration to confirm that the proposed stormwater systems will not exacerbate groundwater conditions. In certain areas of known groundwater contamination or significant soil contamination, infiltration will not be conducted to avoid potential contaminant migration and exacerbating conditions, and alternate methods of managing stormwater will be employed as permitted by local agencies. Figure 9-3 shows the preliminary stormwater system in relation to RTNs on the Phase 1 Site.

9.4 Regulatory Compliance

Construction activities which disturb contaminated soil or groundwater will be conducted in accordance with the provisions of MGL c.21E (and, potentially, C.21c), the Massachusetts Contingency Plan (310 CMR 40.0000), and all other applicable federal, state, and local laws, regulations, and bylaws. Appropriate permits will be obtained from MWRA or EPA/NPDES for offsite management of construction dewatering effluent. Work which disturbs or is in contact with contaminated soil or groundwater will be performed by OSHA 40-hour HAZWOPER trained workers.



Phase I Stormwater with RTN Boundaries

RCDP

Boston, MA 02210

Source: **VHB**
Prepared for: **Review**
Date: **March 27, 2026**

Figure 9-3
Phase I Stormwater with RTN Boundaries

Chapter 10

Climate Change

10.0 CLIMATE CHANGE

10.1 Introduction

The Master Plan Project is being designed with an understanding of expected future climate-related risks, seeking to minimize the impacts of climate change on the Master Plan Project and incorporating measures to allow for adaptation to future conditions. Impacts related to the following areas are anticipated: increased heat and drought, increased precipitation, and sea level rise and related flooding.

The existing Master Plan Site is approximately 95% impervious and has little vegetation or tree canopy. In addition, site stormwater controls appear very limited and there is no evidence of infiltration or treatment systems on the Master Plan Site. The most significant resilience measure proposed by the Master Plan Project is increasing most of the Master Plan Site from approximately 16 to 18 feet BCB (9.5 feet to 10.5 feet NAVD88) up to approximately 23.3 feet BCB (16.8 feet NAVD88), placing most of the Master Plan Site above the predicted 2070 100-year flood level. Additional measures include new stormwater management systems, increased pervious area, significant new tree canopy, and the use of native and drought tolerant plants. This chapter describes the proposed adaptation and resiliency measures, as well as the implementation of the measures as the Master Plan Project is built out.

10.2 Future Flood Risk

10.2.1 Flood Risk Mitigation Approach

To reduce the risk both from future tidal inundations and coastal storm flooding, most of the Master Plan Site will be raised to a higher elevation accounting for future sea level rise and storm surge. Increasing the elevation of the Master Plan Site is expected to occur in Phases, starting with Phase 1. Each phase will include sloped areas to connect open spaces and transportation infrastructure to the existing grades at the edge of each phase boundary. With the inclusion of Phase 2, grade transitions will occur from Summer Street south; it is anticipated that the Block I and Block J buildings will be raised further above the new grade to provide the necessary Design Flood Elevation ("DFE"). Phase 2 also includes a large open space on Block F that will be lower than the buildings, allowing for the collection of stormwater runoff within specific stormwater features. Following Phase 2, the elevation of the Master Plan Site along the Reserved Channel will be approximately 19 feet BCB (12.5 feet NAVD88) rising up to approximately 22.3 feet BCB (15.8 feet NAVD88) from East First Street to Summer Street. During Phase 3, the remainder of the Master Plan Site will be elevated. Figures 10-1 to 10-5 show the phasing of the Master Plan Site elevation for each phase as well as the design flood elevations for the district.

The Master Plan Project proposes relocating Pappas Way further away from the waterfront to allow for a more generous open space that will help navigate the grade change and maintain direct access to the Reserved Channel. As part of this future phase, it is contemplated that flood defense infrastructure and retaining structures will be integrated into this new waterfront open

space through thoughtful landscape design. The proposed interventions will meet or exceed the City's Design Flood Elevations recommendations identified in Climate Ready Boston and align with Massport's climate adaptation guidance. At the water's edge and to allow water access, the site elevation is set at 19.1 feet BCB (12.6 feet NAVD88), Pappas Way and the open space will be set at elevation 22.3 feet BCB (15.8 feet NAVD88), finished floor elevations for buildings will be either 23.3 feet BCB (16.8 feet NAVD88) or 24.3 feet BCB (17.8 feet NAVD88) depending on the use of the building. The relocation of Pappas-Way and implementation of a waterfront open scape will not only serve as a public amenity, increasing access to the water's edge, but will also allow for the Master Plan Site to be out of the floodplain and for adjacent neighborhoods to connect a flood defense system to higher ground. Please refer to Figure 10-4 for the Waterfront Section.

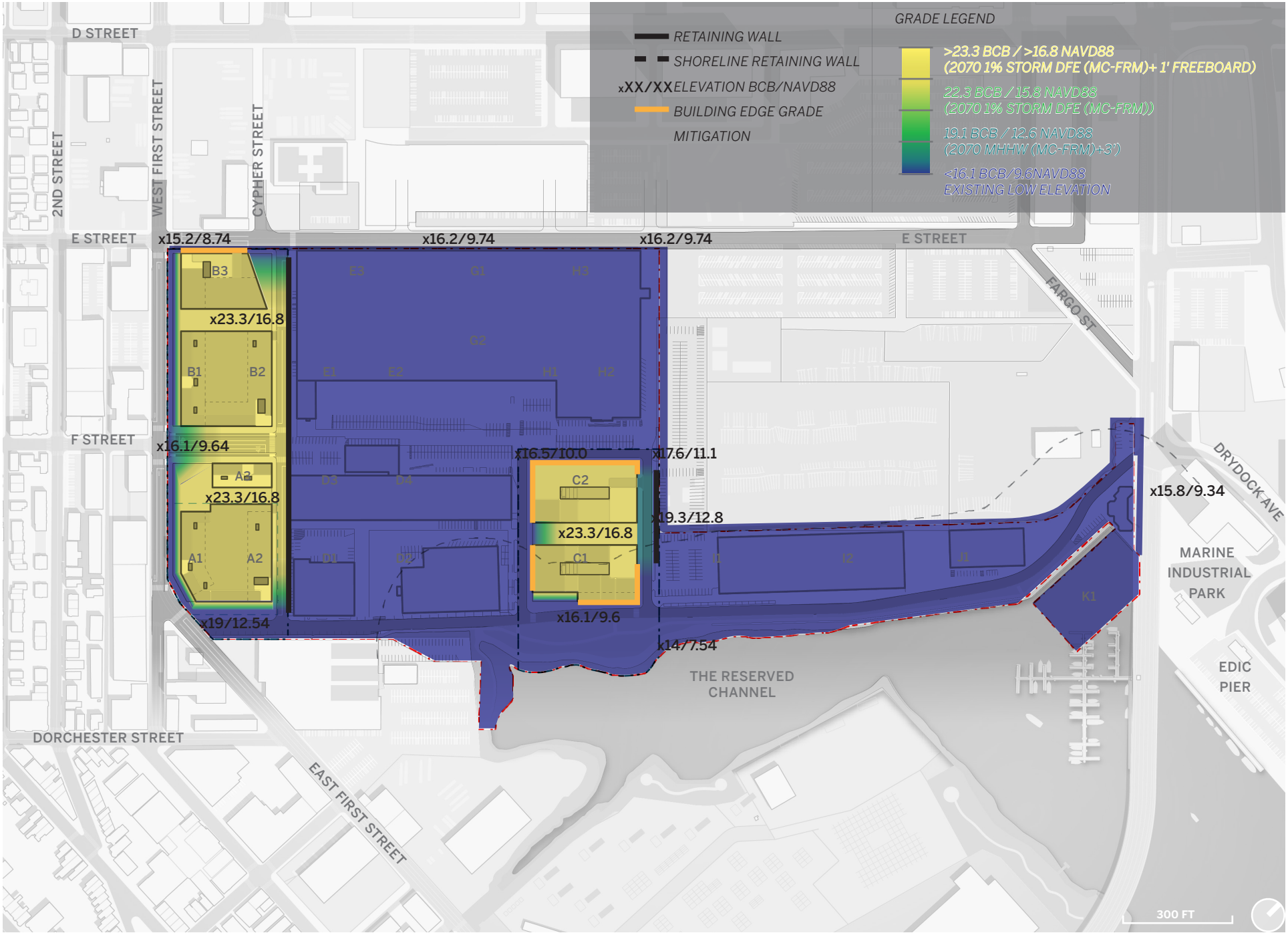
10.2.2 Fill and Grading

The existing Master Plan Site is relatively flat, with elevations ranging from approximately 16 feet to 18 feet BCB (9.5 feet to 11.5 feet NAVD88). To meet Design Flood Elevation ("DFE") requirements and resiliency goals, the Master Plan Project intends to raise the Master Plan Site grade to between approximately 22.3 feet and 23.3 feet BCB (15.8 feet to 16.8 feet NAVD88), sloping gradually down toward the Reserved Channel at the Waterfront Open Space and the surrounding streets (see Figures 10-1 to 10-3). The 2070 mean higher high water ("MHHW") is projected to be 16.1 feet BCB (9.6 feet NAVD88), while according to the ResilientMass Action Team ("RMAT") Tool the 2070 100-year storm event flood is projected to be 20.7 feet BCB (14.2 feet NAVD88). However, based on the Massachusetts Coast Flood Risk Model ("MC-FRM"), the elevation of the 2070 100-year flood event is approximately 22.3 feet BCB (15.8 feet NAVD88).

The RMAT Tool recommends a design that accommodates the 2070 500-year storm event which is projected to have a maximum flood level of approximately 21.7 feet BCB (15.2 feet NAVD88), approximately 25 feet BCB (18.5 feet NAVD88) with maximum wave heights. As noted above, most of the Master Plan Site will be elevated to approximately 23.3 feet BCB (16.8 feet NAVD88), above the projected 2070 500-year flood level. The Waterfront Open Space and Block F portion of the Central Open Space will be flooded by the 2070 500-year flood event, as well as the 2070 100-year storm event; those open spaces will be designed to be resilient to flooding and accommodate excess water during storm events.

Structural fill will be placed primarily within landscape zones between buildings and at internal road rights-of-way. The estimated fill volumes are:

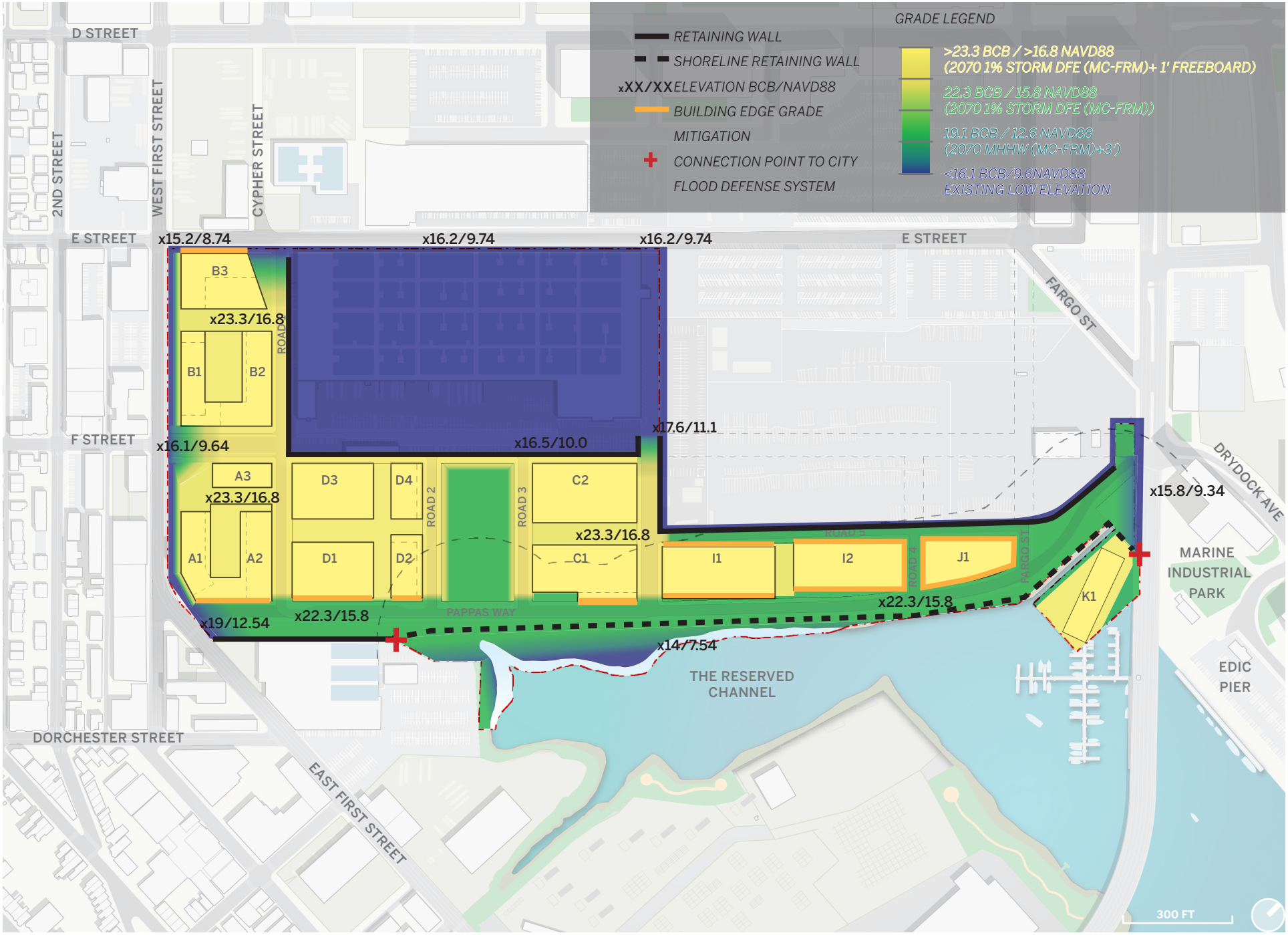
- Phase 1: Approximately 18,000 cubic yards
- Master Plan (including Phase 1): Approximately 135,000 cubic yards



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

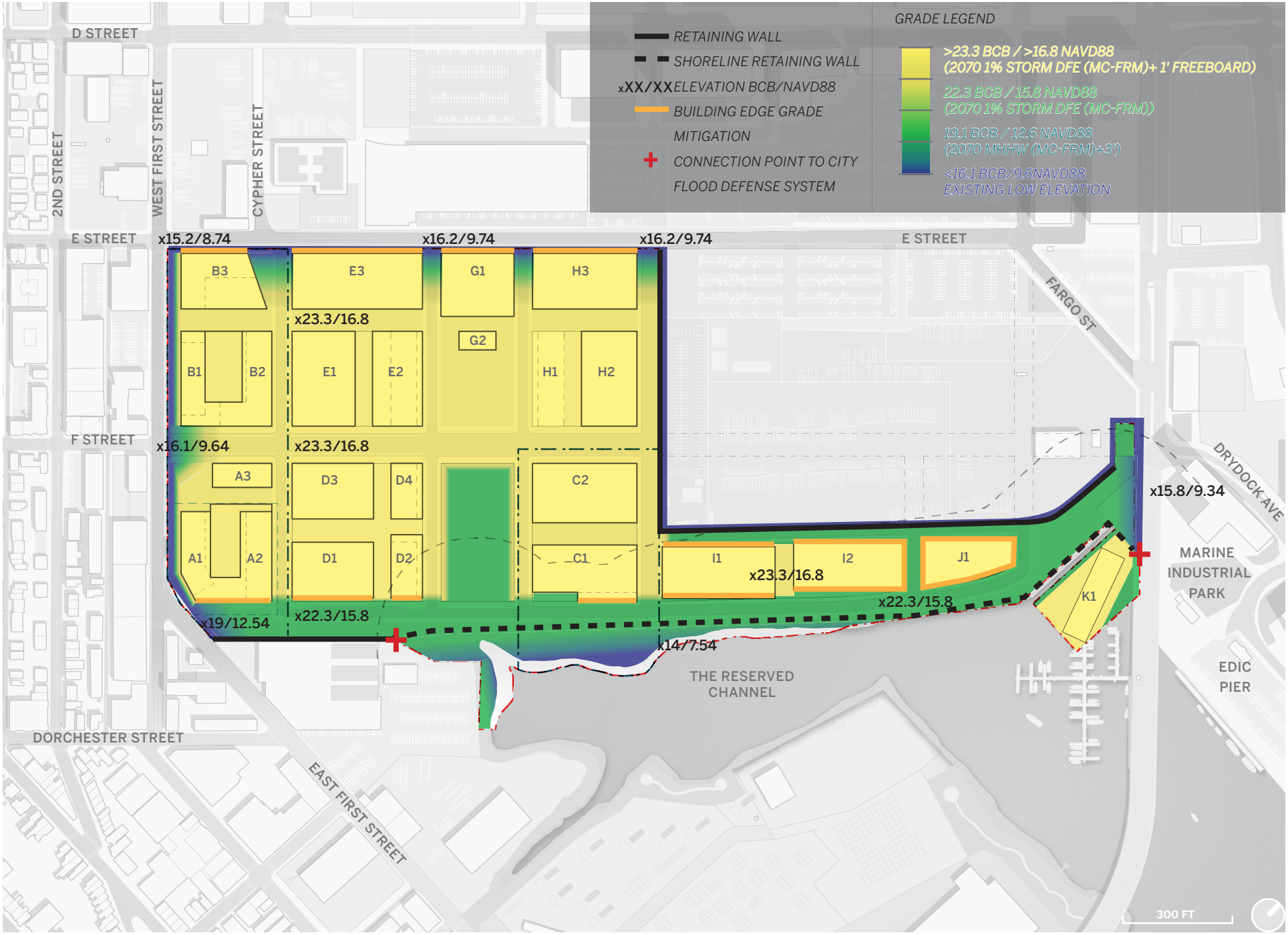
Figure 10-1
Phase 1 Grading Plan



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 10-2
Phase 2 Grading Plan

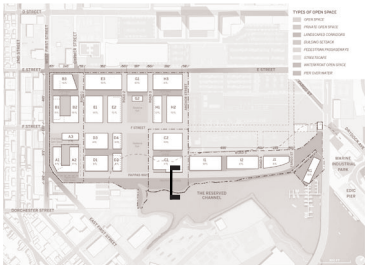


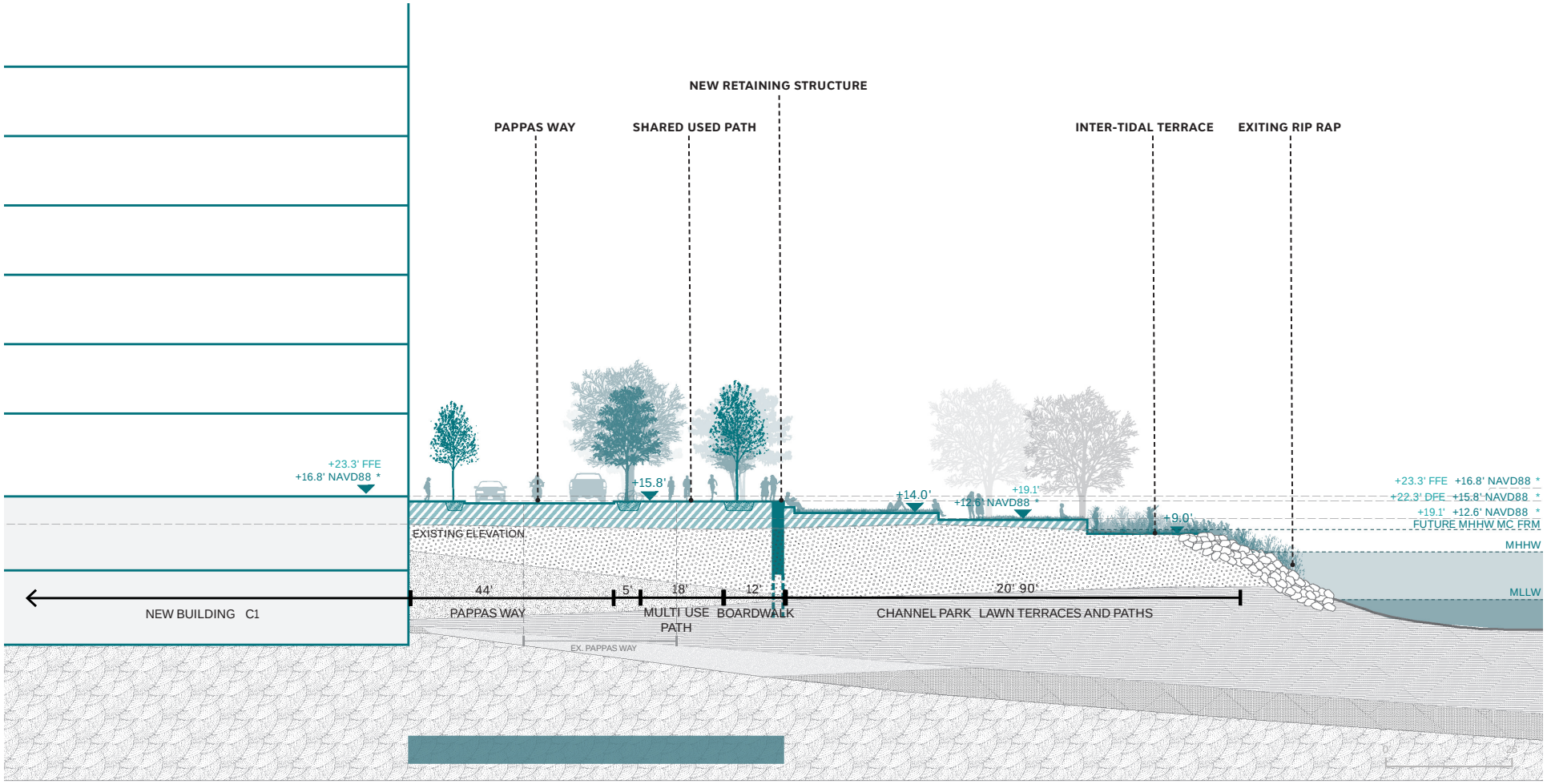
Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 10-3
Full Site Grading Plan

CHANNEL PARK





* Note: elevations derived from MC-FRM BCB and NAVD88.

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: Scape**

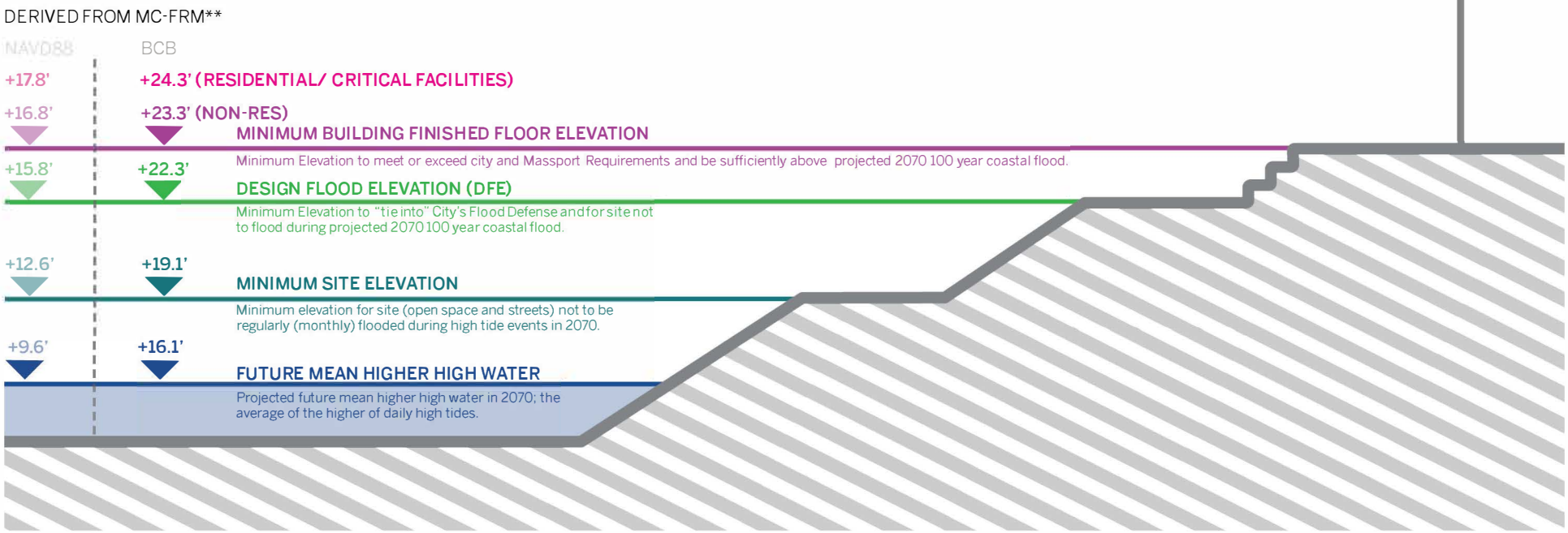
Figure 10-4
Waterfront Section

DESIGN FLOOD ELEVATIONS FOR THE DISTRICT

DATUM - MC-FRM**		BCB*	
RESIDENTIAL AND CRITICAL BUILDINGS FINISHED FLOOR ELEVATIONS	Minimum Elevation to meet or exceed city and Massport Requirements and be sufficiently above projected 2070 100 year coastal flood.	**24.3'** (17.8' NAVD88)	City assumed DFE derived from MC-FRM +2' Freeboard
NON-RESIDENTIAL BUILDINGS FINISHED FLOOR ELEVATIONS	Minimum Elevation to "tie into" City's Flood Defense and for site not to flood during projected 2070 100 year coastal flood.	**23.3'** (16.8' NAVD88)	City assumed DFE derived from MC-FRM +1' Freeboard
SITE DESIGN FLOOD ELEVATION (DFE)	Minimum Elevation to "tie into" City's Flood Defense and for site not to flood during projected 2070 100 year coastal flood.	**22.3'** (15.8' NAVD88)	City assumed DFE derived from MC-FRM
MIN WATERFRONT/ SITE ELEVATION	Minimum elevation for site (open space and streets) not to be regularly (monthly) flooded during high tide events in 2070.	**19.1'** (12.6' NAVD88)	MHHW+58" SLR derived from MC-FRM +3' Max Tide
FUTURE MEAN HIGHER HIGH WATER	Projected future mean higher high water in 2070; the average of the higher of daily high tides.	**16.1'** (9.6' NAVD88)	MHHW+58" SLR derived from MC-FRM

* Note: For elevations in Boston City Base, NAVD88 conversions are provided.

**Derived using data from the latest Massachusetts Coastal Flood Risk Model (MC-FRM)



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: Scape**

Figure 10-5
Key Design Flood Elevations

The grading design carefully manages transitions to the surrounding context, responding to different conditions:

South (West First Street): On Blocks A and B, buildings will be set back approximately 22 feet to create a landscape buffer that navigates the grade difference. A series of designed ramps, seating steps and planters within this setback will tie the Master Plan Site's grade to the existing street elevation (approximately 16 feet BCB/9.5 feet NAVD88).

East (Pappas Way/Waterfront): Relocating the portion of Pappas Way, south of Anchor Street, inland by up to approximately 50 feet, will allow for the creation of terraces and "step-downs" that will provide seamless access from the raised Master Plan Site to the Reserved Channel.

West (E Street): As E Street is a primary Massport freight corridor, internal roads will meet the existing street grade via 5% ramps. Building entrances along E Street will be located at the existing sidewalk elevation, with any grade transitions managed internally.

North/Northwest (Massport Chassis Yard): The Master Plan Project will utilize a retaining wall along this Master Plan Site boundary north of Anchor Street and on the western side of Blocks I, J and K. This wall will be designed to be removable to facilitate a seamless edge integration pending future development of the adjacent parcel.

During Phase 1 and prior to completion of future phases, Road 1 will be constructed at an elevation of approximately 23.3 feet BCB (16.8 feet NAVD88) and ramp down to E Street and Pappas Way. The northern side of Road 1 will have a retaining wall and there will not be a transition to the north until future phases match the grade of Phase 1. In addition, a transition area from Pappas Way to Building C1 will be located on the southeastern side of the building. Buildings C1 and C2 will be raised above their surroundings so that when the surrounding area is filled in, their first floor will match the future grade. With the fill and building elevations, most of the Phase 1 Site (except where transitions occur to the surrounding area) and all of the buildings will be above the 2070 500-year flood level.

Exact elevations, grading profiles, and fill quantities will be refined during detailed design based on updated climate projections, engineering constraints, and ongoing coordination with Massport and City agencies.

10.2.3 Regional Floodproofing Efforts

Coastal Resilience Solutions for South Boston was released in October 2018 and provided recommendations for flood resilience infrastructure in different areas of South Boston, including the Reserved Channel. For the Reserved Channel, the document suggests flood protection along the water edge to cut off flood pathways. However, the document also acknowledges that this action would have a limited impact because flood pathways to the Master Plan Site and surrounding area occur from other locations in South Boston, and coastal resilience actions are required in those locations as well. Even with this limitation, climate resilience infrastructure

along the Reserved Channel is critical to reduce flood risk and needs to be part of the larger solution.

The edges of the Master Plan Site along the waterfront are designed to tie in into future city-wide defense systems using the City DFE and by being in alignment with future coastal flood projections.

The edge of the Master Plan Site abutting the south side of Pappas Way, and the north edge abutting Massport property are designed to have retaining walls. It is anticipated that future development will match the DFE set for the Master Plan Site. The development of the resilience measures will be taken into account while establishing stormwater management practices (by avoiding pooling / bathtub scenarios) and will set the ground for any future city-wide flood defense adaptation plans in the future.

As the design of the Master Plan Project advances, it is also anticipated that conversations regarding climate resilience will continue with Massport, the City, and surrounding landowners.

10.2.4 Building Mitigation Measures

The Master Plan Project buildings will be constructed at a higher elevation to connect to the raised elevation of the Master Plan Site. Non-residential buildings will have a Finished Floor Elevation ("FFE") of approximately 23.3 feet BCB (16.8 feet NAVD88), while residential buildings will have a FFE of approximately 24.3 feet BCB (17.8 feet NAVD88), both above the projected 2070 100-year flood level of approximately 20.7 feet BCB (14.2 feet NAVD88). Lower portions of the buildings will include floodproofing measures as appropriate for the structure and proposed lower level uses.

10.3 Resilient Landscaping

The Master Plan Site is located at a gap in the City's open space networks, and there are no open spaces on the Master Plan Site today other than a small waterfront park and harbor walk. The Master Plan Project will include approximately 11.50 acres of open space when completed, much of which will be on the waterfront. Additional open space will be created along the waterfront in the future when Pappas Way is realigned to be further away from the Reserved Channel. The waterfront open spaces will provide for infiltration, provide a partial barrier to storm surge, and include trees and other plantings to help mitigate the heat island effect.

Along West First Street, a previously proposed open space on the northeast corner of West First Street and F Street (First Street Open Space) has been reduced in response to community feedback, and a larger open space is now proposed in place of the southern end of Pappas Way which will stop at Road 1 in the full-build condition. The proposed Central Open Space takes up the entirety of Block F and about two-thirds of Block G. The intent of the Block F portion of the Central Open Space continues to be for both recreation and, importantly, resiliency purposes. Provided its design elevation, in extreme storm events, the open space will allow for water to flow

into it and be retained, providing for a safe and gradual release into the soil and local infrastructure network. Additional open spaces are located throughout the Master Plan Site, including Landscaped Corridors which will provide essential spaces for passive recreation, pedestrian passage, stormwater management, and mitigation for the heat island effect.

Through material choices, the landscape design builds upon the industrial history of the Master Plan Site, responds to the current ecological, cultural and social contexts and envisions a place of community engagement, recreation and ecological revival. The Master Plan Project will establish a network of open spaces that provide a variety of recreational opportunities and will help mitigate the impacts of climate change (see Table 10-1). The Waterfront Open Space will be designed to increase access to the water and be adaptable to manage coastal flood conditions. The Waterfront Open Space will have areas elevated completely out of the future floodplain (approximately 22.3 feet BCB/15.8 feet NAVD88), and portions that gradually transition toward the water and encourage water access and water use.

Beyond the Waterfront Open Space, the Master Plan Project's open spaces, plazas, and streetscape elements will be integrated into a stormwater management plan and will include significant new tree canopy and permeable surfaces. The open spaces will be elevated out of the future floodplain (the 2070 500-year event, excluding potential wave activity) except at areas where the grade transitions to blend with existing conditions. Portions of the Landscaped Corridors will include rain gardens that will support plant life and provide stormwater management benefits.

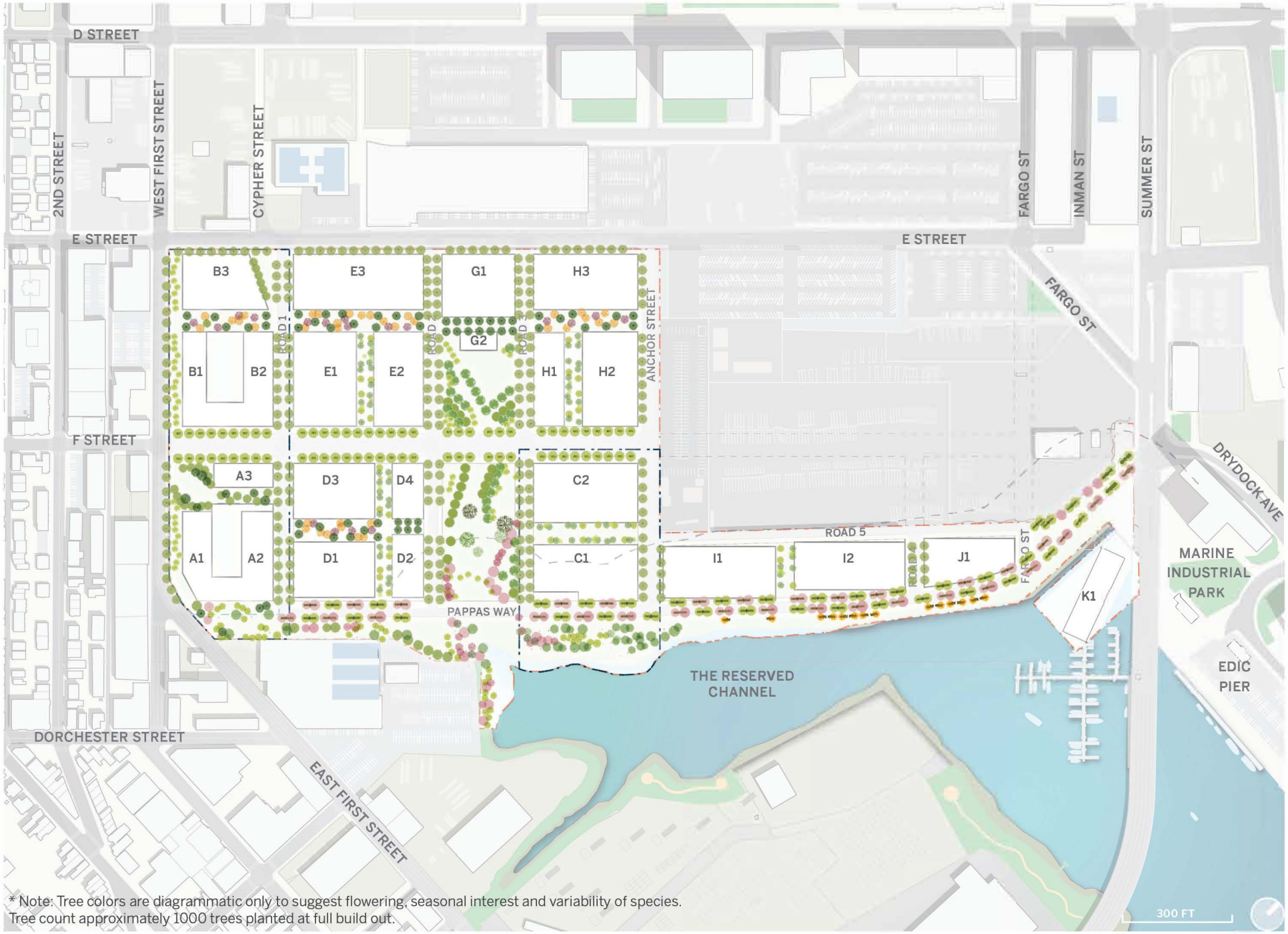
In accordance with the Boston's Climate Action Plan and the Grow Boston Greener initiative, new open spaces will work to contribute to the growth of the City's urban canopy in order to capture greenhouse gases, mitigate urban heat island effects, improve stormwater management, and provide healthy and comfortable spaces for the City's human and wildlife populations.

The Master Plan Project is targeting a minimum of 25% canopy coverage within open spaces and streetscapes within the first 5 years of planting. Selected tree species will be native to the region and proven capable of withstanding winter conditions. Proposed plantings will also be salt tolerant to withstand occasional inundation and salt spray along the waterfront. In aggregate, it is anticipated that over 1,000 new trees will be planted.

Table 10-1 Open Space Network

	Open Space Type					Totals
	Primary Open Space	Secondary Open Space	Landscaped Corridors	Landscaped Setbacks	Pier Over Water	
Phase 1	1.47 Acres	0.13 Acres	0.76 Acres	0.40 Acres	-	2.76 Acres
Masterplan	6.69 Acres	1.15 Acres	2.45 Acres	0.70 acres	0.50 Acres	11.50 Acres

Please refer to Figure 10-6 through 10-10 for the proposed tree canopy coverage, Phase 1 and Master Plan Site open space, regional landscape network, and a green infrastructure cross section.



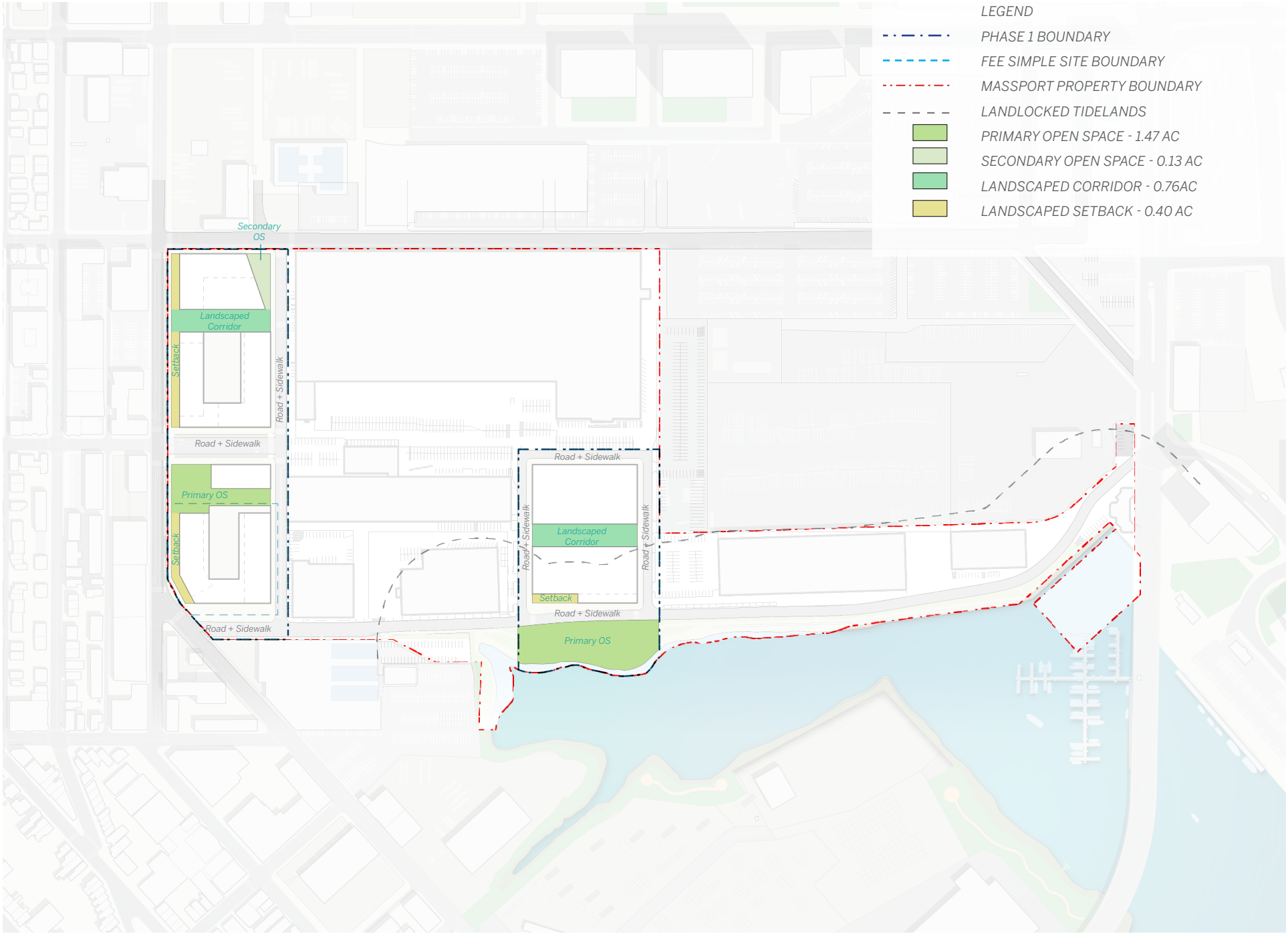
* Note: Tree colors are diagrammatic only to suggest flowering, seasonal interest and variability of species.
Tree count approximately 1000 trees planted at full build out.

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: Scape

Figure 10-6
Tree Canopy Coverage



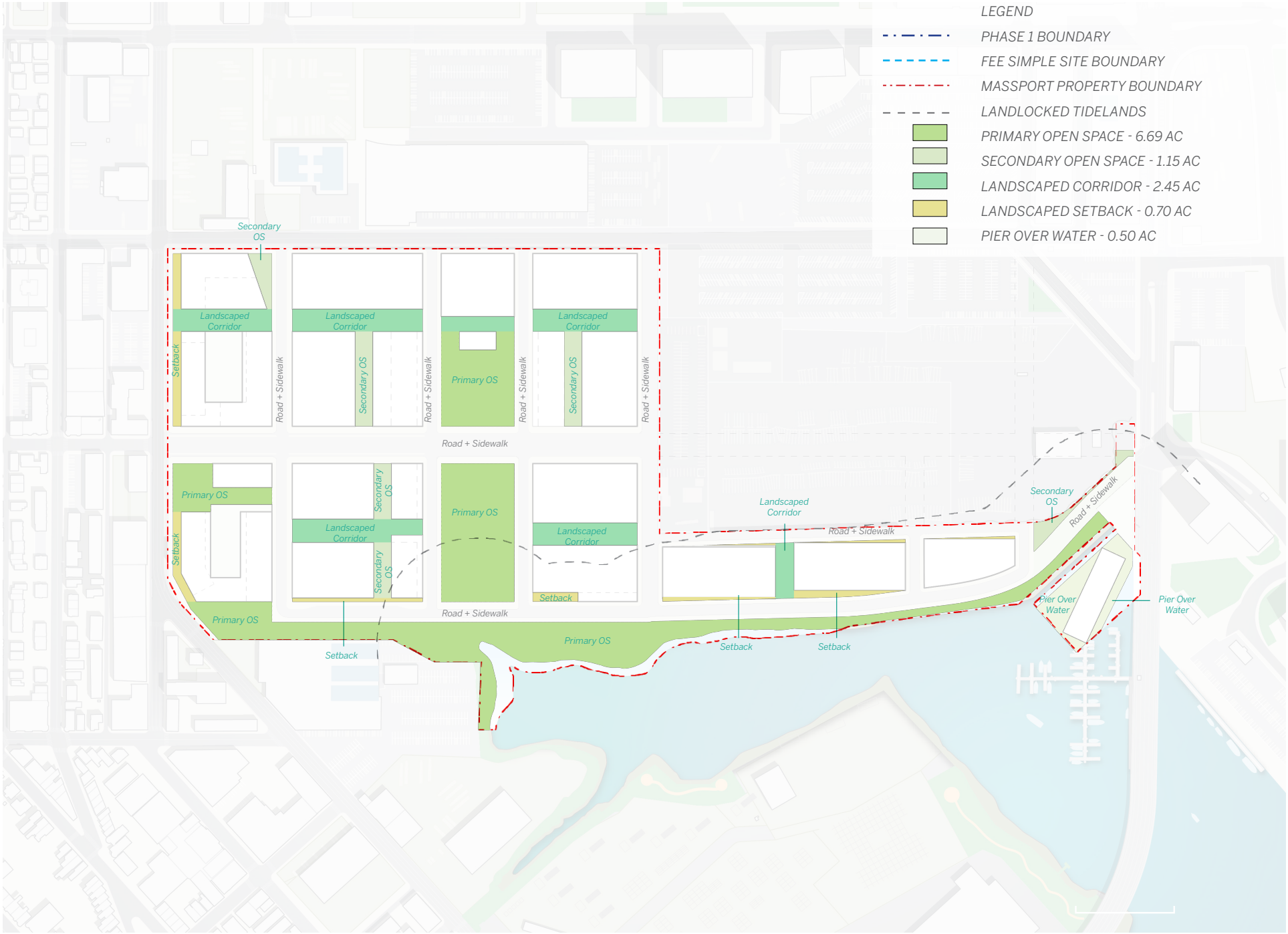
Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Source: SOM

Figure 10-7

Phase 1 Open Space



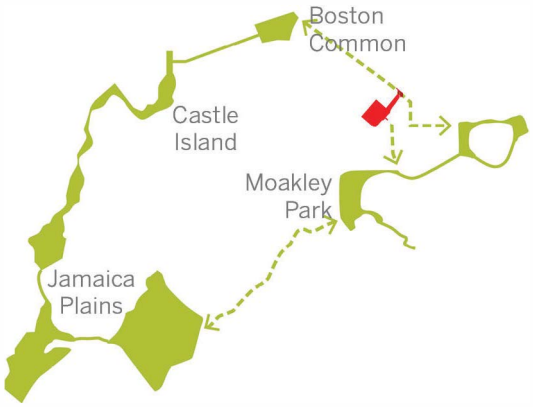
Reserved Channel Development **Boston, Massachusetts**

Epsilon ASSOCIATES INC. **Source: SOM**

Figure 10-8
Master Plan Open Space

LANDSCAPE NETWORK

The project site is strategically located at a gap within this expansive network of open spaces and is an opportunity to increase access and connectivity for local communities.





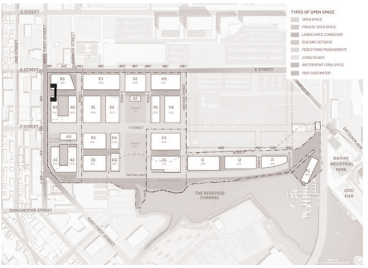


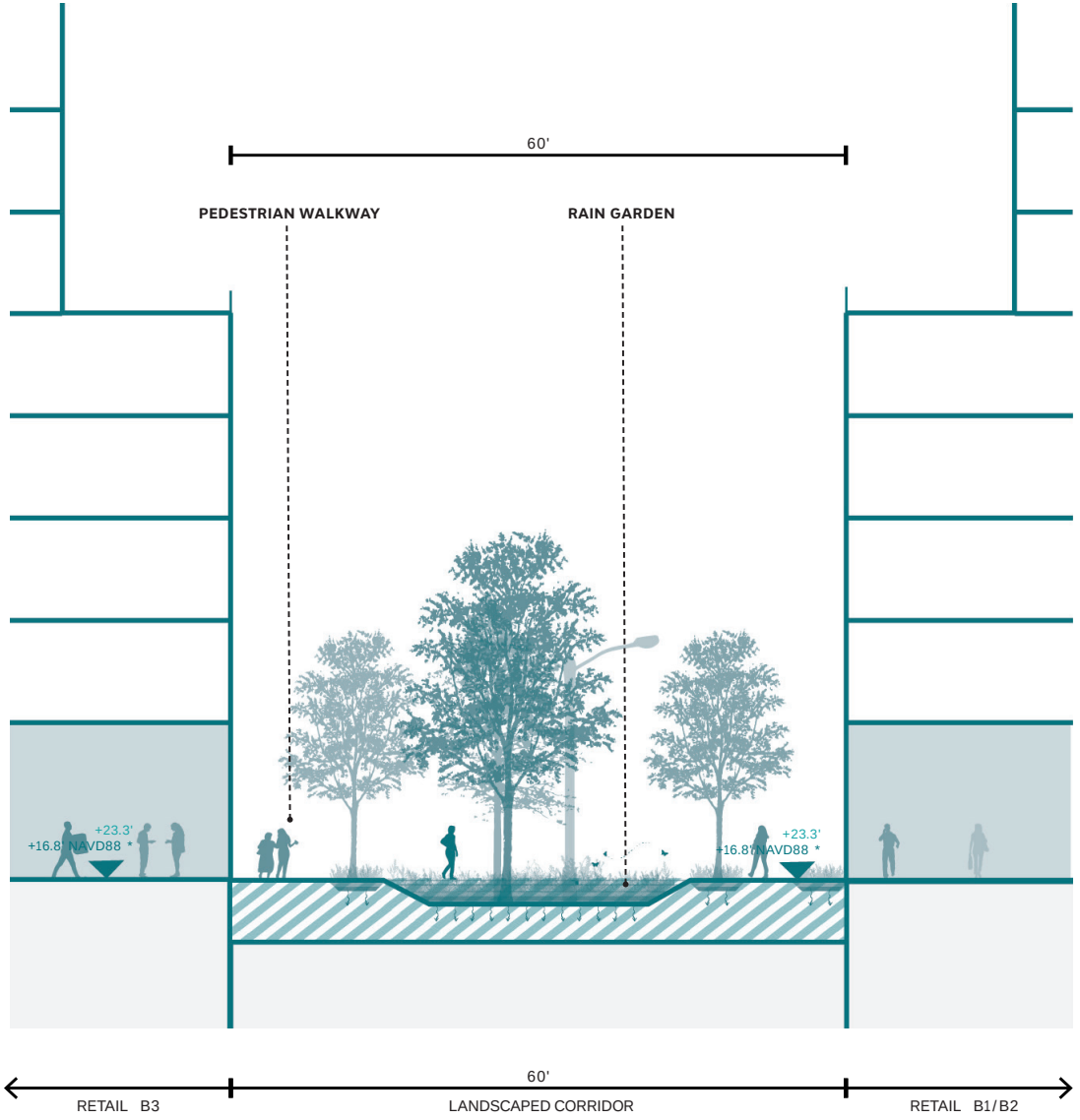
Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: Scape**

Figure 10-9
Landscape Network

LANDSCAPED CORRIDOR





* Note: elevations derived from MC-FRM BCB and NAVD88.

Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC. **Source: Scape**

Figure 10-10
Green Infrastructure Section

10.4 Coastal Engineering Analysis

As noted in Section 10.1, the proposed Master Plan Project will increase the elevation of most of the Master Plan Site from approximately 16 to 18 feet BCB (9.5 feet to 10.5 feet NAVD88) up to approximately 23.3 feet BCB (16.8 feet NAVD88), placing most of the Master Plan Site above the predicted 2070 100-year flood level. The grading strategy includes raising individual development blocks, establishing transitions between elevated site areas and adjacent streets, and reconfiguring roadway and waterfront elevations. Key corridors, including West First Street, F Street, and Pappas Way, incorporate graded transitions to connect existing infrastructure with proposed elevated conditions. In locations where grade differences are more abrupt, retaining walls are introduced to accommodate elevation changes between adjacent areas.

As directed in the Certificate, the Proponent's consultant, Woods Hole Group, completed a comprehensive hydrodynamic modeling analysis to assess any potential flooding changes (flood extent and flood depth), and changes in flood velocity (redirection and concentration of flood flows) associated with the Master Plan Project. A copy of the analysis is included in Appendix F.

The flood redirection modeling demonstrated that the overall proposed Master Plan Project design is effective in reducing flood risk within the Master Plan Site and can be integrated into a regional flood protection plan for the area. Across all evaluated storm scenarios, including the FEMA 1% Annual Exceedance Probability ("AEP") present-day event and future 500-year storms (2050 and 2070), the Master Plan Project limits flood intrusion, removes key low-elevation entry points, and improves overall site resilience.

As the Master Plan Project advances from Phase 1 to Phases 2 and 3, the site transitions from partially or fully inundated conditions to largely dry conditions during major storm events. These improvements are achieved without increasing flood extent or depth on adjacent properties. However, the elevation of the site and removal of internal flood pathways results in a redistribution of flow, with some concentration of floodwater along the site perimeter and adjacent roadways. This redistribution leads to localized increases in flow velocity, particularly along certain perimeter roadways, where velocities increase under future storm scenarios. These increases are a direct and expected consequence of redirecting flow around an elevated site.

Flood Extent and Water Surface Elevation (WSE) Findings:

- **No Increase in Flood Extent Under Any Scenario -** The Master Plan Project does not result in any increase in flood extent relative to existing conditions for any storm event.

- **Significant Reduction in Flooding Within the Master Plan Site (Phases 2 and 3) -** Under future 500-year storms, the Master Plan Site transitions from fully inundated (existing) to largely dry conditions in Phases 2 and 3.

- **Substantial Decrease in Water Surface Elevation Within the Master Plan Site –** The proposed design reduces flooding on the Master Plan Site interior without increased flooding to adjacent areas.

Flood Velocity and Flow Behavior Findings:

- **No Increase in Regional Flood Hazard, but Localized Velocity Increases -** The Master Plan Project does not increase flood extent or regional flood hazard; however, localized increases in velocity occur along site boundaries due to flow redirection under future climate storms. The velocity increases along West First Street at the intersection of Pappas Way and West First Street are not expected to increase risk of impacts to the buildings in this area due to the Master Plan Project under any of the 3 phases of development because the combined velocity and depth of flooding is not projected to induce increased damage potential. There is no significant increase under present day storm conditions.

- **Flow Redistribution Leads to Channelization Along Master Plan Site Edges -** Floodwater is redirected around the elevated site, becoming more concentrated along corridors such as Summer Street and toward E Street and Fargo Street.

- **Velocity Changes Slightly Increase Road Damage Percentage –** The increased velocity and depth combinations do slightly increase the potential for road damage along some of the perimeter of the Master Plan Site under rare, extreme future climate condition storm events.

- **Structural Damage** – Structural damage to adjacent buildings could occur at one location (Point 1 – Fargo Street) due to the proposed development, but this only occurs under an extreme storm (500-year) in the future (2050 to 2070 or later) with Phase 2 or 3 constructed.

Overall, the potential velocity increases that are predicted to occur would happen far into the future, under a full-build condition, and at an extremely low probability. As such, the risk is low and can be mitigated under future development phases (if and when sea level actually gets that high).

Chapter 11

Greenhouse Gas

11.0 GREENHOUSE GAS

11.1 Introduction

The Proponent is taking strong, practical steps to reduce carbon emissions while balancing its development goals to create a successful development. In keeping with the Master Plan Project's carbon reduction goals, the Master Plan Project is being designed to minimize energy use to the maximum extent practicable, and with an understanding of the need to reduce greenhouse gas ("GHG") emissions.

This Chapter presents a GHG discussion that complies with the MEPA Greenhouse Gas Emissions Policy and Protocol ("GHG Policy") of May 2010 and addresses GHG emissions generated by operation of the Phase 1 Project. As required by the SRP, future buildings and/or phases will evaluate GHG emissions based on an approach to be determined in coordination with DOER at the time of each future PCN.

The GHG Policy requires, for certain projects undergoing review by the MEPA Office and required to prepare an EIR, that GHG emissions be quantified and/or that measures to avoid, minimize, or mitigate such emissions be identified. The GHG Policy requires proponents to quantify the impact of proposed mitigation in terms of energy savings and GHG emissions. In the case of a project agreeing to certain mitigation measures, in coordination with the MEPA office and the Department of Energy Resources ("DOER"), this quantification can be omitted as part of the MEPA GHG Policy "Opt-Out" provision. The analysis provided herein focuses on emissions of carbon dioxide ("CO_2"). As noted in the GHG Policy, although there are other GHGs, CO_2 is the predominant contributor to global warming. Furthermore, CO_2 is by far the predominant GHG emitted from the types of sources related to the Phase 1 Project, and CO_2 emissions can be calculated for these source types with readily available data.

GHG emissions sources can be categorized into two groups: (1) stationary sources, or emissions related to structures and equipment that are stationary on a site; and (2) mobile sources, or emissions related to transportation. Stationary sources can be further broken down into direct sources and indirect sources; direct sources include GHG emissions from on-site fuel combustion, and indirect sources include GHG emissions associated with electricity and other forms of energy that are imported from off-site power plants via the regional electrical grid for use on-site.

The Master Plan Project will redevelop approximately 38.23 acres of land and is proposed to include approximately 4,079,000 sf of commercial office and research laboratory uses, approximately 205,000 sf of hotel space (approximately 224 keys) planned with facilities of public accommodation anticipated to include a public marina, approximately 1,496,000 sf of residential uses (approximately 1,578 residential units), and approximately 218,000 sf of retail and/or amenities uses. The anticipated distribution of the Master Plan Project program is summarized in in Table 1-1 in Section 1.2, and building groupings for the GHG analysis are provided in Table 11-1 below.

In place of energy modeling for these buildings, the Proponent is committing to a series of GHG mitigation commitments per the MEPA GHG Policy "Opt-Out" provision. The Master Plan Project team consulted with the DOER on and confirmed that this approach satisfies the requirement for study of stationary source GHG impacts for the Phase 1 Project.

11.2 Stationary Sources

The Master Plan Project buildings were separated into categories by typology for this analysis as outlined in Table 11-1, which represents a change from grouping provided the ENF filing.

Table 11-1 Building Categories

Building Types	Building Label	Proposed Code Compliance
Office & Research Laboratory (high ventilation)*	**C1**, **C2**, D1, D3, E1, E3, G1, H2, H3, I1, I2, J1	Relative Performance
Office & Research Laboratory (normally ventilated)*	C1, C2, D1, D3, E1, E3, G1, H2, H3, I1, I2, J1	Targeted Performance (TEDI)
Residential (including Hotel)	**A1**, **A2, A3**, **B1**, **B2 B3**, D2, D4, E2, H1, K1	Passive House Certified Performance
Retail/Amenity	B3, C1, G2, I1	Prescriptive Stretch Code, TEDI, or Relative Performance

*The specific configuration of the spaces in these buildings has not been finalized and could fall into either of the listed categories. Upon determination of the expected program, the Proponent will ensure alignment with the Energy Code compliance requirement associated with the chosen typology.

It should be noted that Phase 1 includes only Buildings A1, A2, A3, B1, B2, B3, C1 and C2, shown in bold in Table 11-1. Future buildings will be required to be reviewed under a PCN which will include information related to GHG emissions, and could alter the commitments provided below for each building type.

11.2.1 Proposed Design and Mitigation Commitments

Instead of energy modeling for the stationary sources portion of this GHG analysis, the Proponent intends to incorporate a series of feasible, code compliant, and performance-based strategies to reduce GHG emissions associated with Phase 1. These strategies reflect current energy code pathways and the MEPA GHG Policy and will be refined during design development based on technical feasibility, cost considerations, tenant requirements, and applicable codes at the time of building permit. The Proponent is committing to the series of GHG mitigation strategies outlined below, for each of the building types corresponding to Table 11-1:

- Office & Research Laboratory (high ventilation)
    - Glazing ratios are targeted to be approximately 50% of façade area or such ratio as determined optimal through detailed energy modelling.

- C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures.
- Space heating and cooling expected to be provided by air source heat pumps ("ASHP") connected to a water loop served by heat recovery chillers. ASHPs will be sized to 25% of peak heating as primary. Natural gas will be used as a tertiary heating source as the basis of design with gas heating is estimated to be less than 10 kBtu/ft2/yr for the basis of design.
- Domestic hot water will be provided by electric resistance hot water heaters.

♦ Office & Research Laboratory (normally ventilated)

- Energy Code compliance in accordance the Targeted Performance ("TEDI") pathway.
- Glazing ratios are targeted to be approximately 50% of façade area or such ratio as determined optimal through detailed energy modelling.
- C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures.
- Mechanical systems are anticipated to be all-electric where technically and economically feasible, consistent with applicable codes at the time of permitting. At this time, natural gas use for space and domestic hot water heating is not anticipated.
- Space heating and cooling will be provided by ASHPs.
- Domestic hot water will be provided by electric resistance hot water heaters.

♦ Residential

- Buildings planned to be designed to be capable of meeting code required high-performance building standards (e.g., Passive House or equivalent).
- Building systems will not utilize natural gas.
- Space heating and cooling will be provided by ASHPs.
- Domestic hot water will be provided by electric resistance hot water heaters.
- The Proponent has provided a cost and energy analysis demonstrating the rationale that was used to select this system type.
- Dwelling units will be provided with all-electric washing and drying equipment.
- Dwelling units will be provided with all-electric cooking equipment.

- Retail/Amenity
    - Energy Code compliance pathway will be determined by building type.
    - C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures.
    - Building systems will not utilize natural gas.
    - Space heating and cooling will be provided by ASHPs.
    - Any washing and drying equipment provided will be all-electric.
    - Any cooking equipment provided will be all-electric.

Additionally, as each phase of the Master Plan Project is constructed, EV supply equipment and the required electrical infrastructure will be provided consistent with applicable code requirements and Massport guidance at the time of permit. Current planning anticipates EV supply equipment for approximately 25% of spaces and EV-ready infrastructure for remaining stalls for the Fee Parcels, and EV chargers for 10% of spaces and 15% of spaces with EV-ready infrastructure on the Massport-owned parcels.

11.2.2 Residential Domestic Hot Water System Analysis

The design team developed an analysis of the estimated energy use, and cost differences between centralized ASHP domestic hot water systems for the residential buildings and the electric resistance units that are proposed. This analysis demonstrates that, as of the time of the analysis, the energy reductions that could be achieved through the installation of the ASHP hot water heating are small in comparison to the additional costs that would accompany their integration into the building designs. A summary of the analysis, including model assumptions, and Life Cycle Cost Analyses are provided in Appendix G.

11.2.3 Solar Readiness and Installation

The Proponent will provide building rooftops designed to be solar ready. Competing rooftop area needs of accessibility, mechanical and other building support functions will be planned in consideration of the resulting effective area for future rooftop photovoltaic installation. The design team will continue to study increasing the available area for future photovoltaic system installation readiness as building designs are evolved.

For mixed fuel buildings (high ventilation buildings), the requisite solar installation will be sized and specified during permitting and installed during construction.

11.3 Mobile Sources

As part of the GHG analysis, emissions of CO_2 from regional traffic associated with the Phase 1 Project were evaluated. Analysis of mobile source emissions will be included in future PCNs for the future phases.

11.3.1 Traffic GHG Analysis

In accordance with the MEPA GHG Policy, GHG emissions were estimated for mobile sources within the transportation study area (see Chapter 7 for the transportation analysis). For mobile source GHG emissions, the methodology follows the same methodology and parameters that are outlined in MassDEP guidance for mesoscale analyses.[1]

A mesoscale GHG analysis predicts the change in regional CO_2 due to the Phase 1 Project. The analysis includes a comparison of the future Build condition to the No-Build condition. If emissions are greater for the Build condition, reasonable and feasible mitigation measures will be evaluated. The mesoscale analysis performed for the Phase 1 Project estimates the total vehicle pollutant burden for the 2025 Existing condition and the No-Build and Build conditions for year 2033.

The EPA has developed an emissions factor model (called MOVES4), and MassDEP provides state-specific inputs required for this model. The MOVES4 computer program was used to estimate motor vehicle emissions of greenhouse gases on the roadway network in the Phase 1 Project area (see Section 7.2 for study area). Average hourly emission estimates were calculated using the vehicle count data provided in the transportation study, mileage between intersections, and county-specific model inputs provided by MassDEP.

Traffic volumes provided in Chapter 7 form the basis of the mesoscale GHG study, providing a conservative estimate of GHG emissions. Approximately 54 roadway links and 23 intersections were included in the analysis. Peak hour traffic volumes were provided in the traffic analysis. Estimates of average daily traffic ("ADT") were made from the peak hour volumes assuming a 10 percent K-Factor which is the proportion of annual average daily traffic occurring in an hour. This ADT was then converted into average hourly volumes by dividing by 24. Average speed was assumed based on roadway type (typically 10-40 mph for arterial roads) for all links. Distances for the links were estimated with mapping software.

MOVES output emissions are in grams per hour. Since average hourly traffic data were input, emissions in tons per year were calculated assuming a seven-day week for 52 weeks per year.

[1] MassDEP, Guidelines for Performing Mesoscale Analysis of Indirect Sources, May 1991.

For intersection emissions, idle vehicle emission rates were obtained in MOVES4 by using a standardized roadway link with one vehicle and a zero miles per hour vehicle speed. MOVES4 post-processing scripts produce a mass per hour emission rate for idling vehicles. This method is recommended by EPA to determine emission factors for air quality concentration analyses of idling vehicles at intersections (microscale analyses).[2] These emission factors were then used with vehicle counts and delay information from the traffic analyses to estimate vehicle emissions at each study area intersection. Appendix C presents the intersection emissions calculations, and the Phase 1 Project-specific link data input into the MOVES4 program.

11.3.2 Traffic GHG Analysis Results

Table 11-2 represents the difference between the Existing case and the future No-Build case (i.e., traffic expected without the addition of the Phase 1 Project to the area). Anticipated improvements in vehicle engine and emissions technologies, which are expected to reduce the per-vehicle emission rates, typically reduce future emissions. An anticipated increase in vehicle miles travelled results in a 13% increase in GHG emissions.

Table 11-2 Regional Traffic GHG Emissions Analysis Summary (No-Build)

Pollutant	CO_2 (lbs/day)	CO_2 (tons/yr)
2025 Existing	38,861	7,092
2033 No-Build	43,961	8,023
Difference	5,100	931
Difference (%)	13%	13%

Table 11-3 represents the differences between the No-Build case and the Build case (i.e., traffic associated with the addition of the Phase 1 Project to the area without any Proponent-proposed mitigation other than the Proponent's TDM program which is accounted for within the Build condition analysis).

As shown, the 2033 Build condition exhibits a 1% increase in CO_2 emissions compared to 2033 No-Build condition. This is due to the increase in vehicular traffic and subsequent increased delay times generated by the Phase 1 Project alone. The increased vehicle volumes produce increased delays at nearby intersections. The Proponent's TDM program is intended to decrease single occupancy vehicle use and increase alternative modes of transportation (i.e., transit, bicycling, walking), which in turn reduce GHG emissions. However, the GHG emission reduction from the TDM program cannot be quantified because of the methodology used for the Build condition transportation analysis.

[2] U.S. EPA, 2010. Using MOVES in Project-Level Carbon Monoxide Analyses. EPA-420-B-10-041.

Table 11-3 Regional Traffic GHG Emissions Analysis Summary (Build)

Pollutant	CO_2 (lbs/day)	CO_2 (tons/yr)
2033 No-Build	43,961	8,023
2033 Build	44,326	8,090
Difference	365	67
Difference (%)	1%	1%

11.3.3 Summary

Table 11-4 shows the details of the mobile source GHG analysis from case to case. Changes are based on the case to the left. Vehicle miles traveled ("VMT") represents the approximate mileage of all vehicles traveling on the modeled roadway network, and the net VMT change represents the difference from the prior case. A zero change in VMT means that there are no vehicles added or removed from the network for that case. Net delay represents the time sum of all idle traffic at all network intersections over the course of a day.

11.3.4 GHG from Loading Activities

Per the MEPA Certificate scope, the GHG emissions from idling trucks were estimated. It is estimated that 56 trucks arriving per day for the Phase 1 Project. Based on Massachusetts vehicle idling regulations (MGL ch. 90, §16A), a conservative idling time of approximate five minutes (300 seconds) within a loading dock space was assumed. Idle vehicle emission rates were obtained in MOVES4 by using a standardized roadway link with one vehicle and a zero miles per hour vehicle speed with the modification of MOVES vehicle ID 52 & 61, assumed to each represent 50% of onroad vehicles rather than the standard vehicle mix supplied by MassDEP. MOVES4 post-processing scripts were then used to produce a mass per hour emission rate for idling vehicles.

The idling of 56 trucks for five minutes per day for 365 days yielded an estimate of approximately 13.9 tons of direct CO_2 emissions per year, or approximately 76 lbs/day CO_2.

This calculation and the derived truck-only emission factor is provided in Appendix C.

Table 11-4 Regional Traffic GHG Emissions Analysis Summary

	units	2025 Existing	2033 No-Build	2033 Build
Daily VMT	veh-miles/day	40,370	48,542	50,087
Net VMT Change	veh-miles/day	-	8,173	1,545
Net Delay	veh-hrs/day	1,262	2,324	2,475
Net Delay Change	veh-hrs/day	-	1,062	151

Table 11-4 Regional Traffic GHG Emissions Analysis Summary (Continued)

	units	2025 Existing	2033 No-Build	2033 Build
Roadway CO_2	tpy	5,597	5,533	5,737
Intersection CO_2	tpy	1,495	2,490	2,353
Net CO_2 Emissions	tpy	7,092	8,023	8,090
Net CO_2 Change	tpy	-	931	67

Table 11-5 Phase 1 Project Traffic GHG Emissions Analysis Summary

	units	2033 Build minus 2033 No-Build
Daily VMT	veh-miles/day	1544.7
Net Change	veh-miles/day	-
Net Delay	veh-hrs/day	150.8
Net Change	veh-hrs/day	-
Roadway CO_2	tpy	204
Intersection CO_2	tpy	-137
Total CO_2 Emissions	tpy	67

11.4 Summary and Mitigation Commitments

The Proponent has detailed their commitments to mitigate Phase 1 Project GHG emissions in Section 11.2. Specific stationary source GHG reduction has not been quantified, as the Proponent is committing to a series of GHG mitigation commitments per the MEPA GHG Policy "Opt-Out" provision, and therefore did not perform full building energy modeling; Table 11-6 summarizes the Phase 1 Project's mobile source emissions.

Table 11-6 Phase 1 Project GHG Emissions Summary

	Baseline	Proposed	Difference	
		tons/yr	tons/yr	Percent Change
Mobile Sources	8,023	8,090	67	1%

Upon completion of the future buildings, the Proponent will submit a self-certification to the MEPA Office, prepared in accordance with the GHG Policy. This certification will identify the GHG mitigation measures incorporated into the buildings and will detail the compliance to the GHG reduction commitments made within. Details of the Proponent's implementation of operational measures will also be included.

Chapter 12

Construction Impacts

12.0 CONSTRUCTION IMPACTS

12.1 Introduction

The Proponent is committed to minimizing construction-related impacts. The proximity of abutting residential and commercial properties to the Master Plan Site will require careful scheduling of material removal and delivery. Planning with Massport, the City, and abutters will be essential to the successful development of the Master Plan Project.

Construction management and scheduling practices, including plans for construction worker commuting and parking, routing plans and scheduling for trucking and deliveries, protection of existing utilities, maintenance of fire access, control of noise and dust, and public safety will be employed to minimize impacts on the surrounding environment and community. The details of these measures will be incorporated into one or more Construction Management Plan(s) ("CMP") which will be prepared prior to the start of construction and reviewed by Massport and the City.

The Proponent will follow MassDEP guidelines which will direct the evaluation and mitigation of construction impacts.

12.2 Construction Methodology/Public Safety

Construction methodologies that ensure public safety and protect nearby residents and businesses will be employed. Techniques such as barricades, flaggers, and signage will be used as necessary. Sidewalk areas and walkways near construction activities will be well marked and lit to protect pedestrians and ensure their safety.

12.3 Construction Schedule

Construction of the Phase 1 Project is estimated to commence as soon as the necessary permits are secured with construction of the subsequent phases to follow depending on market conditions and lease obligations.

12.4 Construction Staging/Access

Although specific construction and staging details have not been finalized, the Proponent and its construction management consultant will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the construction site. Construction procedures will be designed to meet all Occupational Safety and Health Administration ("OSHA") safety standards for specific site construction activities.

During construction, entrances to the construction site will be restricted to points where aggregate surfaces will be used to limit the tracking of soil out of the construction site by construction vehicles.

12.5 Construction Truck Routes and Deliveries

A critical component of the construction-period mitigation is a set of measures designed to minimize potential impacts on traffic flow and safety. Summarized below are several measures that the Proponent and general contractor will implement during the construction of each phase to avoid and minimize potential transportation-related impacts:

- The Proponent will coordinate with Massport and the City to discuss transportation-related construction-period impacts.
- Designated truck routes will be established to govern how trucks access the construction site.
- Police detail officers will be used as necessary and as required by Massport or the City to facilitate and maintain safe and efficient passage of vehicles and pedestrians during construction.
- Prior to the start of construction, the general contractor will submit a Construction Period Traffic Management Plan to the Massport and the City for review and approval. This plan will identify designated construction truck routes and any temporary roadway improvements necessary to accommodate truck traffic, while maintaining safe and efficient passage for vehicles, pedestrians, and bicyclists.
- The Proponent will avoid full or partial street closures to the extent possible. Should a partial street closure be necessary to accommodate materials transport or construction-related activities, the closure will be limited to off-peak hours.
- Parking for construction workers will be provided within the construction site to the extent possible, and construction workers will be encouraged to use alternative methods of transportation and carpooling.
- "No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

12.6 Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during excavation, demolition and construction include wetting soils prior to disturbing, covering stockpiles, and careful removal of debris by covered trucks. The construction contract will provide for several strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;

- Minimizing spills on the construction site;
- Monitoring actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the construction site; and
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

In addition to measures to control earth material particulate dust, the contractor will also strive to minimize diesel emissions during construction. Specific measures to be taken to reduce diesel emissions and other construction related air quality impacts include the following measures:

- Using equipment retrofitted with diesel emissions control devices. The Proponent will specify during the procurement of the subcontractors, that the majority of the heavy equipment operating on the construction site be retrofitted with diesel emissions control devices;
- Maintaining an "idle free" work zone of fossil fuel trucks and equipment by providing supplemental hoisting and pumping equipment along with "just-in-time" delivery methods. On-site idling will be limited to five minutes. "Do Not Idle" signs will be posted at appropriate locations;
- Using Ultra Low Sulfur Diesel for all trucks and construction machinery as required by the EPA.

It is anticipated that through these measures, the construction activities will comply with applicable MassDEP air pollution control regulations.

12.7 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Master Plan Project. Periodic increased community sound levels, however, are an inherent consequence of construction activities. A noise mitigation plan will be prepared to minimize, to the extent practicable, the generation of sound levels that will impact off-site receptors. Every reasonable effort will be made to minimize the noise impact of construction activities, including:

- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;

- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

12.8 Construction Waste Management

The Proponent is committed to minimizing construction waste and will take an active role regarding the reprocessing and recycling of construction waste. A comprehensive Construction Waste Management Plan ("CWMP") will be developed for each phase or building construction effort. The purpose of the CWMP is to define the waste management procedures to be implemented for the duration of construction and minimize the amount of construction waste and debris being disposed of, and maximize the amount of materials reintroduced to the manufacturing process.

Proposed construction activities will generate solid waste, predominantly as a result of demolition and excavation. The CWMP is intended to divert construction and demolition waste from landfill and to develop a waste management plan that results in recycling or salvaging of non-hazardous construction and demolition waste, not including land clearing and associated debris. Materials will be separated with waste haulers required to track and separate debris off-site at approved facilities. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

A disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible.

Prior to general excavation, site soils will be pre-characterized to the planned depth of excavation for off-site removal in accordance with current MassDEP policy.

12.9 Protection of Utilities

The Master Plan Project is not expected to have any significant impact on the quality or quantity of any public or private water supply, watershed, reservoir, or the groundwater. Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with

the appropriate governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation.

12.10 Construction Soil Management

Erosion and sedimentation will be controlled by encircling all work with sedimentation barrier and protecting all infiltration systems and stormwater structures. Permanent erosion control will be primarily accomplished by land grading and permanent vegetation cover. An Erosion Control Plan will be developed for each phase.

12.11 Construction Period Stormwater Management

Each construction project will incorporate sedimentation and erosion controls into design and construction practices. Each construction project will comply with the requirements of its EPA NPDES General Permit for Construction, which includes the development of a Stormwater Pollution Prevention Plan ("SWPPP"). The construction efforts will abide by all necessary requirements under this permit to control erosion, sedimentation, and stormwater quality.

12.12 Construction Period Impacts on EJ Communities

The Proponent understands the impacts that construction may have on the local community. The CMP(s) will include measures to minimize impacts to the local (and EJ) community around the construction site, including truck routing that uses major roadways and minimizes travel through EJ communities to the extent feasible.

Air quality impacts due to construction activities will be short-term. Anticipated air quality impacts include the creation of fugitive dust and emission of diesel exhaust. There will be mitigation measures in place to control dust and diesel emissions and ensure that construction activities create minimal impact to the surrounding communities.

Chapter 13

Mitigation and Draft Section 61 Findings

13.0 MITIGATION AND DRAFT SECTION 61 FINDINGS

13.1 Introduction

M.G.L. c. 30, s. 61 requires that "[a]ll authorities of the Commonwealth ... review, evaluate, and determine the impact on the natural environment of all works, projects or activities conducted by them and ... use all practicable means and measures to minimize [their] damage to the environment. ... Any determination made by an agency of the Commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." Each state agency that issues a permit for the Master Plan Project shall issue a Section 61 Finding in connection with permit issuance, identifying mitigation that is relied upon to satisfy the Section 61 requirement. A proposed Section 61 Finding is provided in Section 13.3, and a table of mitigation measures is included as part of the proposed Section 61 Finding. All mitigation will be the responsibility of the Proponent.

13.2 Anticipated State Permits and Approvals

Table 13-1 identifies the State Agencies that are expected to take Agency Action on the proposed Master Plan Project and, therefore, issue Section 61 Findings.

Table 13-1 Anticipated State Agency Actions Required for the Master Plan Project

Agency	Approval/Action
Massachusetts Department of Environmental Protection	Chapter 91 License
	Approval of Massport Waterfront Development Plan (future phases)
Massachusetts Water Resources Authority	Sewer Use Discharge Permit (tenant specific)
Massachusetts Port Authority	Flammable Storage License
	Ground lease amendments
Office of Public Safety and Inspections	Building Permit(s) (with respect to the portion of the Master Plan Project to be located on the Massport Parcel)
	Certificate of Occupancy (with respect to the portion of the Master Plan Project to be located on the Massport Parcel)

13.3 Proposed Section 61 Finding

Project Name:	Reserved Channel Master Plan Development
Project Location:	Boston
Project Proponent:	Oxford Properties Group and Pappas Enterprises
Date ENF Noticed in Monitor:	May 8, 2024

The potential environmental impacts of the Project have been characterized and quantified in the Environmental Notification Form dated April 30, 2024 and the Draft Environmental Impact Report dated May 28, 2026 which is incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, the Proponent has been working to develop measures to mitigate significant impacts of the Project. With the mitigation proposed and carried out in cooperation with state agencies, the [**Agency**] finds that there are no significant unmitigated impacts.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under the Massachusetts Environmental Policy Act (MEPA). The Proponent has accordingly prepared the attached Table of Impacts and Mitigation Measures that specifies, for each potential state permit category, the mitigation that the Proponent will provide.

Now, therefore, [**Agency**], having reviewed the MEPA filings for the Project, including the mitigation measures itemized on the attached Table of Summary of Mitigation Measures, finds pursuant to M.G.L. C. 30, S. 61 that with the implementation of the aforesaid measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the Project to the environment.

_____

[AGENCY]

_____

By

_____

[Date]

To be attached, Tables 13-2 and 13-3, describing the measures to be implemented to mitigate the effects of the Master Plan Project related to the required state permits and the schedule for implementation.

The mitigation measures will be implemented subject to receipt of necessary permits and approvals.

Table 13-2 Summary of Mitigation Measures for Phase 1

Mitigation	Schedule	Cost
Climate Resilience and Adaptation		
Raising the elevation of the Phase 1 Site to variable heights with approximately 18,000 cubic yards of earth.	As each Block is developed	Approximately $9.5M in Site Grading and Retaining
A minimum of 25% of the open spaces and streetscapes is anticipated to be shaded by approximately 200 new trees within the first five years of planting.	Trees on specific blocks to be planted as buildings are completed	Part of Phase 1 Project Cost
Selected tree species will be native to the region and proven capable of withstanding the Boston area's winters.	Trees on specific blocks to be planted as buildings are completed	Part of Phase 1 Project Cost
Planting palette will be salt tolerant to withstand occasional inundation at the waterfront and salt spray.	Trees on specific blocks to be planted as buildings are completed	Part of Phase 1 Project Cost
Phase 1 buildings will be LEED certifiable to meet the LEED Gold standard.	As each Block is developed	Part of Phase 1 Project Cost
Transportation/Air Quality		
Interim improvements at the intersection of Pappas Way and East/West First Streets.	As Block A is developed	Part of Phase 1 Project Cost
F Street extension from West First Street to Road 1.	As Blocks A and B are developed	Part of Phase 1 Project Cost
Signal timing improvements at the intersection of West First Street/D Street.	As Blocks A and B are developed	Part of Phase 1 Project Cost
Reconstruction or construction (where required) of sidewalks and accessible ramps adjacent or within the Phase 1 Site, improvements to street lighting where necessary, planting of trees, and providing bicycle storage racks.	Associated improvements to occur as each Block is completed	Part of Phase 1 Project Cost
Dedicated two-way bicycle path, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along the northern frontage of West First Street.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern frontage of Road 1.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage.	Following completion of Block C	Part of Phase 1 Project Cost
Road 1 chicane is designed to allow for integration of an east/west transportation service should one be integrated in the future.	Design and operation	Part of Phase 1 Project Cost

Table 13-2 Summary of Mitigation Measures for Phase 1 (Continued)

Mitigation	Schedule	Cost
Transportation/Air Quality (continued)		
Transportation demand management measures that will be determined for each block or building.	As each building or block is developed and completed	Part of Operating Cost
Bicycle storage for residents, tenants and visitors.	As each building is completed.	Part of Phase 1 Project Cost
The travel characteristics of tenants of the Phase 1 Site will be actively monitored to support compliance with the TDM program and assess the ability of the Phase 1 Site to facilitate walking, bicycling, transit, and carpooling trips.	Following completion of Phase 1	Part of Phase 1 Project Cost
Greenhouse Gas		
For Research Laboratory (high ventilation): ♦ Glazed wall systems will account for no more than 50% of total building envelope. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ Space heating and cooling expected to be provided by air source heat pumps ("ASHP") connected to a water loop served by heat recovery chillers. ASHPs will be sized to 25% of peak heating as primary. Natural gas will be used as a tertiary heating source as the basis of design with gas heating is estimated to be less than 10 kBtu/ft^2/yr for the basis of design. ♦ Domestic hot water will be provided by electric resistance hot water heaters.	During design and construction	Part of Phase 1 Project Cost
Office & Research Laboratory (normally ventilated): ♦ Energy Code compliance in accordance the Targeted Performance ("TEDI") pathway. ♦ Glazed wall systems will account for no more than 50% of total building envelope. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ These buildings will be all electric with no natural gas use. ♦ Space heating and cooling will be provided by ASHP's. ♦ Domestic hot water will be provided by electric resistance hot water heaters.	During design and construction	Part of Phase 1 Project Cost

Table 13-2 Summary of Mitigation Measures for Phase 1 (Continued)

Mitigation	Schedule	Cost
Greenhouse Gas (continued)		
Residential: ♦ Buildings will be designed for Passive House Certification. ♦ Building systems will not utilize natural gas. ♦ Space heating and cooling will be provided by ASHP's. ♦ Domestic hot water will be provided by electric resistance hot water heaters. ♦ The Proponent has provided a cost and energy analysis demonstrating the rationale that was used to select this system type. ♦ Dwelling units will be provided with all-electric washing and drying equipment. ♦ Dwelling units will be provided with all-electric cooking equipment.	During design and construction	Part of Phase 1 Project Cost
Retail/Amenity: ♦ Energy Code compliance pathway will be determined by building type. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ Building systems will not utilize natural gas. ♦ Space heating and cooling will be provided by ASHP's. ♦ Any washing and drying equipment provided will be all-electric. ♦ Any cooking equipment provided will be all-electric.	During design and construction	Part of Phase 1 Project Cost
The Proponent will provide EV charging and EV-ready infrastructure at all proposed parking facilities. A minimum of 10% of parking spaces within a parking garage on Massport-owned parcels will be equipped with EV charging upon opening, with an additional 15% of spaces supplied with EV-ready infrastructure. For Fee Parcels, the Proponent will comply with the City of Boston's EV policy by providing the equivalent of 25% of the total parking supply with EV chargers and sufficient infrastructure capacity for future accommodation of the remaining parking supply.	During design and construction of each parking garage.	Part of Phase 1 Project Cost
Upon completion of each building or phase, the Proponent will submit a self-certification to the MEPA Office, prepared in accordance with the GHG Policy.	Following construction completion of each building or phase	Part of Phase 1 Project Cost
Stormwater		
Infiltration chambers, Low Impact Development, and/ or green infrastructure techniques for each building site to infiltrate 1.25 inches of stormwater runoff from the site's impervious area.	Design and construction of each building	Part of Phase 1 Project Cost

Table 13-2 Summary of Mitigation Measures for Phase 1 (Continued)

Mitigation	Schedule	Cost
Stormwater (continued)		
Raised first floor elevation and site elevation to minimize impacts of storms.	Design and construction of each building	Part of Phase 1 Project Cost
Increased pervious area compared to the existing Phase 1 Site.	Design and operation of each building site	Part of Phase 1 Project Cost
Raingardens and other low impact design features within Landscaped Corridors to collect stormwater runoff.	Completion of each Landscaped Corridor	Part of Phase 1 Project Cost
Wastewater		
Use of low-flow and high-efficiency plumbing fixtures.	Design and operation	Part of Phase 1 Project Cost
Infiltration/Inflow mitigation at a ratio of 4:1 relative to the net new wastewater generated.	Prior to activation of water service of each building	Part of Phase 1 Project Cost
Water		
Use of low-flow and high-efficiency plumbing fixtures.	Design and operation	Part of Phase 1 Project Cost
At-grade landscape design and the vegetated areas will use a mixture of drought tolerant trees, shrubs, and groundcover that grow well in an urban environment. The irrigation system will be designed to be efficient and use significantly less potable water when compared to a conventional irrigation system through the use of timers, soil moisture indicators and rainfall sensors.	Design and operation	Part of Phase 1 Project Cost
Construction		
Construction methodologies that ensure public safety and protect the immediately surrounding area will be employed. Techniques such as barricades and signage will be used.	During construction	Part of Phase 1 Project Cost
Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.	During construction	Part of Phase 1 Project Cost
“Don’t Dump - Drains to Boston Harbor” plaques will be installed at storm drains that are replaced or installed as part of the development.	During construction	Part of Phase 1 Project Cost
The general contractor(s) will work to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the construction site each day.	During construction	Part of Phase 1 Project Cost
“No Idling” signs will be included at the loading, delivery, pick-up, and drop-off areas.	During construction	Part of Phase 1 Project Cost

Table 13-2 Summary of Mitigation Measures for Phase 1 (Continued)

Mitigation	Schedule	Cost
Construction (continued)		
Plans for controlling fugitive dust during construction activities include mechanical street sweeping, wetting portions of the construction site during periods of high wind, and careful removal of debris by covered trucks.	During construction	Part of Phase 1 Project Cost
The Proponent will require the construction contractor(s) to use after-engine emission controls such as diesel oxidation catalysts or diesel particulate filters on construction vehicles and use of Ultra Low Sulfur Diesel fuel in off-road engines.	During construction	Part of Phase 1 Project Cost
The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse, and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00.	During construction	Part of Phase 1 Project Cost
Environmental Justice/Public Health		
A minimum of 25% of the open spaces and streetscapes is anticipated to be shaded by approximately 200 new trees within the first five years of planting.	Trees on specific blocks to be planted as buildings are completed	Part of Phase 1 Project Cost
Reconstruction or construction (where required) of sidewalks and accessible ramps adjacent or within the Phase 1 Site, improvements to street lighting where necessary, planting of trees, and providing bicycle storage racks.	Associated improvements to occur as each Block is completed	Past of Phase 1 Project Cost
Dedicated two-way bicycle path, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along the northern frontage of West First Street.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Street trees alongside dedicated pedestrian space buffered from vehicle traffic along the southern frontage of Road 1, as well as sidewalks along the northern frontage of Road 1.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Bi-directional bicycle lanes, street trees, and dedicated pedestrian space, all buffered from vehicle traffic with an additional buffer between bicycle and pedestrian uses, along each side of F Street.	Following completion of Blocks A and B	Part of Phase 1 Project Cost
Street trees or planters alongside dedicated pedestrian space buffered from vehicle traffic on Road A, Road B, and Road C along the Block C frontage.	Following completion of Block C	Part of Phase 1 Project Cost
Transportation demand management measures that will be determined for each block or building.	As each building or block is development and completed	Part of Operating Cost
Bicycle storage for residents, tenants and visitors.	As each building is completed.	Part of Phase 1 Project Cost

Table 13-2 Summary of Mitigation Measures for Phase 1 (Continued)

Mitigation	Schedule	Cost
Environmental Justice/Public Health (continued)		
The travel characteristics of tenants of the Phase 1 Site will be actively monitored to support compliance with the TDM program and assess the ability of the Phase 1 Site to facilitate walking, bicycling, transit, and carpooling trips.	Following completion of Phase 1	Part of Phase 1 Project Cost
Infiltration chambers, Low Impact Development, and/ or green infrastructure techniques for each building site to infiltrate 1.25 inches of stormwater runoff from the site's impervious area.	Design and construction of each building	Part of Phase 1 Project Cost
Increased pervious area compared to the existing Phase 1 Site.	Design and operation of each building site	Part of Phase 1 Project Cost
Raingardens and other low impact design features within Landscaped Corridors to collect stormwater runoff.	Completion of each Landscaped Corridor	Part of Phase 1 Project Cost
Infiltration/Inflow mitigation at a ratio of 4:1 relative to the net new wastewater generated.	Prior to activation of water service of each building	Part of Phase 1 Project Cost
Construction methodologies that ensure public safety and protect the immediately surrounding area will be employed. Techniques such as barricades and signage will be used.	During construction	Part of Phase 1 Project Cost
Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.	During construction	Part of Phase 1 Project Cost
The general contractor(s) will work to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the construction site each day.	During construction	Part of Phase 1 Project Cost
"No Idling" signs will be included at the loading, delivery, pick-up, and drop-off areas.	During construction	Part of Phase 1 Project Cost
Plans for controlling fugitive dust during construction activities include mechanical street sweeping, wetting portions of the construction site during periods of high wind, and careful removal of debris by covered trucks.	During construction	Part of Phase 1 Project Cost
The Proponent will require the construction contractor(s) to use after-engine emission controls such as diesel oxidation catalysts or diesel particulate filters on construction vehicles and use of Ultra Low Sulfur Diesel fuel in off-road engines.	During construction	Part of Phase 1 Project Cost

Table 13-3 Summary of Mitigation Measures for Future Phases

Mitigation	Schedule	Cost
Climate Resilience and Adaptation		
Raising the elevation of the Master Plan Site with approximately 117,000 cubic yards of earth.	As each Block is developed	Approximately $25M in Site Grading and Retaining
Approximately 800 new trees.	Trees on specific blocks to be planted as buildings are completed	Part of Future Phases Cost
Selected tree species will be native to the region and proven capable of withstanding the Boston area's winters.	Trees on specific blocks to be planted as buildings are completed	Part of Future Phases Cost
Planting palette will be salt tolerant to withstand occasional inundation at the waterfront and salt spray.	Trees on specific blocks to be planted as buildings are completed	Part of Future Phases Cost
Future Phase buildings will be LEED certifiable to meet the LEED Gold standard.	As each Block is developed	Part of Future Phases Cost
Transportation/Air Quality		
Closure of the northern and southern ends of Pappas Way.	Master Plan Project completion	Part of Future Phases Cost
F Street extension from Road 1 to Anchor Street.	Master Plan Project completion	Part of Future Phases Cost
Reconstruction or construction (where required) of sidewalks and accessible ramps adjacent or within the Master Plan Site, improvements to street lighting where necessary, planting of trees, and providing bicycle storage racks.	Associated improvements to occur as each Block is completed	Past of Future Phases Cost
Transportation demand management measures that will be determined for each block or building.	As each building or block is developed and completed	Part of Operating Cost
Bicycle storage for residents, tenants and visitors.	As each building is completed.	Part of Future Phases Cost
The travel characteristics of tenants of the future phases will be actively monitored to support compliance with the TDM program and assess the ability of the future phases to facilitate walking, bicycling, transit, and carpooling trips.	Following completion of Phase 1	Part of Future Phases Cost

Table 13-3 Summary of Mitigation Measures for Future Phases (Continued)

Mitigation	Schedule	Cost
Transportation/Air Quality (continued)		
Evaluation of the following modifications to local traffic circulation when completing future transportation analyses: ♦ The configuration of East First Street, West First Street, and Dorchester Avenue in the vicinity of the existing Pappas Way approach, given the prominence of Dorchester Avenue in carrying vehicular traffic to this area from points south and west (South Boston, Andrew, Kosciuszko Circle). The current roadway configuration places traffic one block east of the F Street corridor. ♦ The directionality of F Street south of West First Street, including operational, safety, and parking impacts associated with converting the one-way travel condition between Broadway and West First Street to a two-way condition. ♦ Design of a future Summer Street/F Street//Drydock Avenue intersection, along with any proposed roadway reconfigurations raised in documents such as the RLFMP Master Plan such as the creation of a new Haul Road/Drydock Avenue intersection. ♦ A future connection of E Street with Summer Street at Pumphouse Road, which would likely make the Fargo Street/Summer Street intersection obsolete and impact operations along Summer Street. With an extended F Street in place, traffic (including truck traffic) could be encouraged to use the corridor instead of E Street should today's discontinuation with Summer Street remain in place.	In future MEPA submissions	Part of Future Phases Cost
Greenhouse Gas		
For Research Laboratory (high ventilation): ♦ Glazed wall systems will account for no more than 50% of total building envelope. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ Space heating and cooling expected to be provided by air source heat pumps ("ASHP") connected to a water loop served by heat recovery chillers. ASHPs will be sized to 25% of peak heating as primary. Natural gas will be used as a tertiary heating source as the basis of design with gas heating is estimated to be less than 10 kBtu/ft^2/yr for the basis of design. ♦ Domestic hot water will be provided by electric resistance hot water heaters.	During design and construction	Part of Future Phases Cost

Table 13-3 Summary of Mitigation Measures for Future Phases (Continued)

Mitigation	Schedule	Cost
Greenhouse Gas (continued)		
Office & Research Laboratory (normally ventilated): ♦ Energy Code compliance in accordance the Targeted Performance ("TEDI") pathway. ♦ Glazed wall systems will account for no more than 50% of total building envelope. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ These buildings will be all electric with no natural gas use. ♦ Space heating and cooling will be provided by ASHP's. ♦ Domestic hot water will be provided by electric resistance hot water heaters.	During design and construction	Part of Future Phases Cost
Residential: ♦ Buildings will be designed for Passive House Certification. ♦ Building systems will not utilize natural gas. ♦ Space heating and cooling will be provided by ASHP's. ♦ Domestic hot water will be provided by electric resistance hot water heaters. ♦ The Proponent has provided a cost and energy analysis demonstrating the rationale that was used to select this system type. ♦ Dwelling units will be provided with all-electric washing and drying equipment. ♦ Dwelling units will be provided with all-electric cooking equipment.	During design and construction	Part of Future Phases Cost
Retail/Amenity: ♦ Energy Code compliance pathway will be determined by building type. ♦ C406.9 Reduced Air Infiltration will be adopted as one of the required C406 measures. ♦ Building systems will not utilize natural gas. ♦ Space heating and cooling will be provided by ASHP's. ♦ Any washing and drying equipment provided will be all-electric. ♦ Any cooking equipment provided will be all-electric.	During design and construction	Part of Future Phases Cost

Table 13-3 Summary of Mitigation Measures for Future Phases (Continued)

Mitigation	Schedule	Cost
Greenhouse Gas (continued)		
The Proponent will provide EV charging and EV-ready infrastructure at all proposed parking facilities. A minimum of 10% of parking spaces within a parking garage on Massport-owned parcels will be equipped with EV charging upon opening, with an additional 15% of spaces supplied with EV-ready infrastructure. For Fee Parcels, the Proponent will comply with the City of Boston's EV policy by providing the equivalent of 25% of the total parking supply with EV chargers and sufficient infrastructure capacity for future accommodation of the remaining parking supply.	During design and construction of each parking garage.	Part of Future Phases Cost
Upon completion of each building or phase, the Proponent will submit a self-certification to the MEPA Office, prepared in accordance with the GHG Policy.	Following construction completion of each building or phase	Part of Future Phases Cost
Stormwater		
Infiltration chambers, Low Impact Development, and/ or green infrastructure techniques for each building site to infiltrate 1.25 inches of stormwater runoff from the site's impervious area.	Design and construction of each building	Part of Future Phases Cost
Raised first floor elevation and site elevation to minimize impacts of storms.	Design and construction of each building	Part of Future Phases Cost
Increased pervious area compared to the existing Master Plan Site.	Design and operation of each building site	Part of Future Phases Cost
Raingardens and other low impact design features within Landscaped Corridors to collect stormwater runoff.	Completion of each Landscaped Corridor	Part of Future Phases Cost
Wastewater		
Use of low-flow and high-efficiency plumbing fixtures.	Design and operation	Part of Future Phases Cost
Infiltration/Inflow mitigation at a ratio of 4:1 relative to the net new wastewater generated.	Prior to activation of water service of each building	Part of Future Phases Cost
Water		
Use of low-flow and high-efficiency plumbing fixtures.	Design and operation	Part of Future Phases Cost
At-grade landscape design and the vegetated areas will use a mixture of drought tolerant trees, shrubs, and groundcover that grow well in an urban environment. The irrigation system will be designed to be efficient and use significantly less potable water when compared to a conventional irrigation system through the use of timers, soil moisture indicators and rainfall sensors.	Design and operation	Part of Future Phases Cost

Table 13-3 Summary of Mitigation Measures for Future Phases (Continued)

Mitigation	Schedule	Cost
Construction		
Construction methodologies that ensure public safety and protect the immediately surrounding area will be employed. Techniques such as barricades and signage will be used.	During construction	Part of Future Phases Cost
Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.	During construction	Part of Future Phases Cost
"Don't Dump - Drains to Boston Harbor" plaques will be installed at storm drains that are replaced or installed as part of the development.	During construction	Part of Future Phases Cost
The general contractor(s) will work to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the construction site each day.	During construction	Part of Future Phases Cost
"No Idling" signs will be included at the loading, delivery, pick-up, and drop-off areas.	During construction	Part of Future Phases Cost
Plans for controlling fugitive dust during construction activities include mechanical street sweeping, wetting portions of the construction site during periods of high wind, and careful removal of debris by covered trucks.	During construction	Part of Future Phases Cost
The Proponent will require the construction contractor(s) to use after-engine emission controls such as diesel oxidation catalysts or diesel particulate filters on construction vehicles and use of Ultra Low Sulfur Diesel fuel in off-road engines.	During construction	Part of Future Phases Cost
The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse, and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00.	During construction	Part of Future Phases Cost
Environmental Justice/Public Health		
Approximately 800 new trees to be planted.	Trees on specific blocks to be planted as buildings are completed	Part of Future Phases Cost
Reconstruction or construction (where required) of sidewalks and accessible ramps adjacent or within the Master Plan Site, improvements to street lighting where necessary, planting of trees, and providing bicycle storage racks.	Associated improvements to occur as each Block is completed	Past of Future Phases Cost
Transportation demand management measures that will be determined for each block or building.	As each building or block is development and completed	Part of Operating Cost

Table 13-3 Summary of Mitigation Measures for Future Phases (Continued)

Mitigation	Schedule	Cost
Environmental Justice/Public Health (continued)		
Bicycle storage for residents, tenants and visitors.	As each building is completed.	Part of Future Phases Cost
The travel characteristics of tenants of the future phases will be actively monitored to support compliance with the TDM program and assess the ability of the future phases to facilitate walking, bicycling, transit, and carpooling trips.	Following completion of Phase 1	Part of Future Phases Cost
Infiltration chambers, Low Impact Development, and/ or green infrastructure techniques for each building site to infiltrate 1.25 inches of stormwater runoff from the site's impervious area.	Design and construction of each building	Part of Future Phases Cost
Increased pervious area compared to the existing Master Plan Site.	Design and operation of each building site	Part of Future Phases Cost
Raingardens and other low impact design features within Landscaped Corridors to collect stormwater runoff.	Completion of each Landscaped Corridor	Part of Future Phases Cost
Infiltration/Inflow mitigation at a ratio of 4:1 relative to the net new wastewater generated.	Prior to activation of water service of each building	Part of Future Phases Cost
Construction methodologies that ensure public safety and protect the immediately surrounding area will be employed. Techniques such as barricades and signage will be used.	During construction	Part of Future Phases Cost
Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.	During construction	Part of Future Phases Cost
The general contractor(s) will work to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the construction site each day.	During construction	Part of Future Phases Cost
"No Idling" signs will be included at the loading, delivery, pick-up, and drop-off areas.	During construction	Part of Future Phases Cost
Plans for controlling fugitive dust during construction activities include mechanical street sweeping, wetting portions of the construction site during periods of high wind, and careful removal of debris by covered trucks.	During construction	Part of Future Phases Cost
The Proponent will require the construction contractor(s) to use after-engine emission controls such as diesel oxidation catalysts or diesel particulate filters on construction vehicles and use of Ultra Low Sulfur Diesel fuel in off-road engines.	During construction	Part of Future Phases Cost

Chapter 14

Response to Comments

14.0 RESPONSE TO COMMENTS

This chapter responds to the Certificate and comment letters received in response to the ENF. The Certificate and each letter have been assigned an abbreviation. The Certificate and comment letters are reprinted in this section, and specific comments within each letter are noted in the margin with an abbreviation and a sequential numbering. Following the letter is a listing of the comments accompanied by a response to each. Table 14-1 provides the list of comment letters and the abbreviation assigned to each.

Table 14-1 Secretary's Certificate and Comment Letters

Commenter	Abbreviation
EEA Secretary's Certificate on the EENF	MEPA
Massachusetts Water Resources Authority	MWRA
Department of Environmental Protection	DEP
Department of Energy Resources	DOER
Coastal Zone Management	CZM
Massachusetts Port Authority	MP
Boston Water and Sewer Commission	BWSC
Public Comments	
Maura Martinelli	MM
Joseph Beauchaine	JB
David Wooddell	DW
Lawrence A. Chan	LC
Darrin Brack	DB
Ellie Kasper	EK
Jen Salman	JS
Sharon Butler-O'Dwyer	SB
Levi Reilly	LR
Brenna Beck	BB
Kathleen Arrigal	KA
Kirsten Mceleney	KM
Michael D'Angelo	MD
Michael Lovanna	ML
Miri Goldfield	MG
Spencer Beebe	SB
Conservation Law Foundation	CLF
Kim Karasewicz	KK
Boston Harbor Now	BHN
Tom Ready	TR

Table 14-1 Secretary's Certificate and Comment Letters (Continued)

Commenter	Abbreviation
Julie Isch	JI
Ann Sanders	AS
Jason S. Weissman	JS
Philip S. Balboni	PB
Edwin Sullivan Condo Trust	ESCT
Joshua Levin	JL
Matthew Martinelli	MMA
Katie Gutierrez	KG

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June 28, 2024

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Reserved Channel Master Plan Development
PROJECT MUNICIPALITY	: Boston
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 16802
PROJECT PROPONENTS	: Oxford Properties Group and Pappas Enterprises
DATE NOTICED IN MONITOR	: May 8, 2024

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Draft Environmental Impact Report (DEIR). The Environmental Notification Form (ENF) describes the phased buildout of the project site. On April 1, 2024, a Special Review Procedure (SRP) was established to allow for deferred review of subsequent phases. The Proponent should prepare a DEIR which provides a full evaluation of Phase 1 of the project and a conceptual description of the master plan project, including anticipated cumulative impacts of the full buildout, in accordance with the Scope.

Project Description

As described in the ENF, the project consists of the phased development (the "Master Plan Project") of a 41.66-acre site with a total buildout of approximately 5,989,000 square feet (sf) of mixed uses on 12 development blocks. The project is anticipated to be constructed over a 30-year period. The development blocks will range in size from 0.1 acres to 5.2 acres, with most of the blocks anticipated to be approximately 2.5 to 3.0 acres in size. As detailed below, the full buildout of the site will include approximately 4,768,500 sf of commercial office and research and development/laboratory (R&D) uses; 205,000 sf of hotel space (approximately 224 rooms) with facilities of public accommodation

anticipated to include a public marina; 788,000 sf of residential uses (approximately 847 units); and approximately 227,500 sf of retail and/or amenities space. Development of each block will be as follows:

Block A: Three buildings, including one building with approximately 343,500 sf of commercial R&D space, one building with approximately 91,000 sf of residential uses (95 units), and a one-story civic pavilion. The three buildings will have a combined total of approximately 18,500 sf of retail and/or amenity space.

Block B: Three buildings, including two buildings with approximately 538,000 sf of commercial R&D space and one building with approximately 109,500 sf of residential space (110 units). The three buildings will have a combined total of approximately 30,500 sf of retail and/or amenity space.

Block C: Two buildings with approximately 567,000 sf of commercial R&D uses and approximately a combined total of 41,000 sf of retail and/or amenity space.

Block D: Four buildings, including two buildings with approximately 465,000 sf of commercial R&D uses and two buildings with approximately 189,500 sf of residential use (a total of 207 units). The four buildings will have a combined total of approximately 30,00 sf of retail and/or amenity space.

Block E: Three buildings, including two buildings with approximately 880,000 sf of commercial R&D uses and one building with approximately 212,000 sf of residential use (232 units). The three buildings will have a combined total of approximately 30,00 sf of retail and/or amenity space.

Block F: No buildings are proposed for this block.

Block G: Two buildings with approximately 325,000 sf of commercial R&D uses and approximately 10,000 sf of retail and/or amenity space.

Block H: Three buildings, including two buildings with approximately 725,000 sf of commercial R&D uses and one building with approximately 186,000 sf of residential use (203) units. The three buildings will have a combined total of approximately 30,00 sf of retail and/or amenity space Across the three buildings will be approximately 19,000 sf of retail and/or amenity space.

Block I: Two buildings with approximately 700,000 sf of commercial R&D uses and approximately 25,000 sf of retail and/or amenity space.

Block J: One building with approximately 225,000 sf of commercial R&D uses and approximately 10,000 sf of retail and/or amenity space.

Block K: One hotel building containing approximately 205,000 sf and approximately 224 room planned with facilities of public accommodation to include a public marina, as well as

approximately 10,000 sf of retail and amenity space.

Block L: One approximately 3,500 sf building with retail and/or amenity space.

The Master Plan Project includes a total of approximately 11.5 acres of open spaces, plazas, pedestrian connections, and other upland and waterfront spaces. The eight blocks comprising the main body of the site (Blocks A, B, C, D, E, F, G, and H) will be separated by a new street grid consisting of the northerly extension of F Street (which currently terminates at West First Street) through the site, and four new east-west streets that will connect Pappas Way and E Street and intersect F Street Extension.

Phase 1 of the project includes development of Blocks A, B, and C, which have a combined area of 12.86 acres. As listed above, Phase 1 will include construction of eight buildings with a combined gross square footage of 1,739,000 sf, including 1,448,500 sf of commercial R&D space, 200,500 sf of residential space (205 units), 90,000 sf of retail and/or amenity space, and public uses to be provided at the civic pavilion. Blocks A and B are adjacent to each other and are located at the southwestern end of the site along West First Street. Block C is located along Pappas Way northeast of Blocks A and B, from which it will be separated by future development Blocks D, E, F, and G. According to the ENF, the eight buildings proposed in Phase 1 include:

Buildings A1 and B1: Two six-story residential buildings oriented east to west facing West First Street

Buildings A2 and B2: Two 11-story commercial R&D buildings located north of Buildings A1 and B1

Building B3: A four-story commercial R&D building at the corner of West First Street and E Street, planned to include an 18,000-sf grocery store on the ground floor

Building C1: A five-story building directly abutting Pappas Way with retail and other public uses on the ground floor and commercial R&D space on the upper floors

Building C2: A 10-story building with commercial R&D uses located on Block C to the north of Building C1.

Phase 1 will include the construction of the southwestern end of the extended F Street between Blocks A and B, open space between the extension of F Street and Buildings A1 and A2, a pedestrian plaza on Block B between Building B3 and Buildings B1 and B2, and renovation of an existing waterfront open space along Reserved Channel opposite of Building C1.

Special Review Procedure

A Special Review Procedure (SRP) was established on April 1, 2024 to govern MEPA review of the phased buildout of the site. As set forth in the SRP, the Proponent will undertake the standard MEPA review process for the Master Plan Project, including the filing of an ENF, DEIR, and Final Environmental Impact Report (FEIR). Within these filings, proposed activities in Phase 1 will also be

reviewed in more detail to allow for the Phase 1 project to complete MEPA review and proceed to state permitting.

The information provided during the review of the Master Plan Project will be sufficient to enable a conceptual review of cumulative impacts associated with the Master Plan Project, including any common infrastructure components (such as roadways, water/wastewater expansions and utilities) that will serve the entire Master Plan Project site. Review of the Master Plan Project, as may be modified or supplemented by the Secretary's Certificate on the ENF and/or DEIR, is expected to include a conceptual description of the Master Plan Project, analysis of alternatives for the full buildout of the site, and a review of the impacts and potential mitigation measures of the Master Plan Project as conceived at this time. The SRP requires that MEPA filings for the Phase 1 project will include analysis of alternatives for Phase 1 and all applicable environmental impacts in accordance with the MEPA regulations as defined in 301 CMR 11.00, as may be modified through the Secretary's Certificate on the ENF and/or DEIR. Issuance of the Secretary's Certificate on the final filing will conclude MEPA review of the Phase 1 Project, and shall mean that Agency Actions may be taken as related to Phase 1.

Under the SRP, the Proponent is required to submit Project Commencement Notices (PCNs) for future phases of the Master Plan Project as plans are developed. The PCNs will also review the consistency of the development proposed in each phase to the Master Plan Project, and provide more detailed descriptions of future phases and their impacts and mitigation.

As further described below, the SRP established a Citizens Advisory Committee (CAC) to serve as a conduit for public input and review of the Phase 1 Project and the Master Plan Project. The CAC was initially formed as the advisory body for the City's Article 80 process, and to serve in lieu of the agency's customary Impact Advisory Group ("IAG"). In an effort to establish a CAC that is diverse in affiliation and experience and fairly represents a range of viewpoints and priorities, additional CAC nominations were solicited together with publication of the draft MEPA SRP, and the MEPA Office and City undertook efforts to reach out to community leaders from EJ populations within 1 mile of the site. Based on these efforts, three additional members were added to the CAC prior to formally designating the CAC through the SRP. The CAC is intended to serve as a common body for both the City's Article 80 process and the MEPA review process under the SRP. The SRP requires the Proponent to provide administrative support for the CAC, and the MEPA Office is required to be copied on invitations to all CAC meetings.

Project Site

The 41.66-acre Master Plan Project site is bordered by Reserved Channel to the east, Summer Street to the north, E Street to the west, and West First Street to the south. A residential neighborhood is located south of West First Street. Commercial uses and the Boston Convention Center are located to the west and the Raymond L. Flynn Marine Park (RLFMP) (EEA# 8161) is located north of Summer Street. Pappas Way runs along the west side of Reserved Channel between Summer Street and the intersection of West First Street and East First Street. Approximately 38.23 acres of the project site are owned by Massport and will be ground leased to the Proponent, and the remaining 3.43 acres are owned in fee by the Proponent. The Master Plan Project site is almost entirely covered in impervious surfaces (buildings and pavement) and includes nine buildings with commercial and industrial uses, including office space and warehousing, with a combined square footage of 791,000 sf.

The Phase 1 project site consists of two discrete areas within the Master Plan Project site. Blocks A and B occupy an area of approximately 5.65 acres of land at the southern end of the Master Plan Project site along West First Street between Pappas Way and E Street. Blocks A and B are covered entirely with impervious surfaces, including paved parking and laydown areas, and a 9,900-sf building used by a private bus company for bus storage and maintenance and ancillary office space. The second area to be developed in Phase 1, designated as Block C, is approximately 5.21 acres and entirely owned by Massport. Block C extends across Pappas Way and includes an area of the Reserved Channel shoreline and watersheet. The majority of Block C is covered in impervious surfaces, including paved parking areas and a 62,800-sf warehouse building used by the United Parcel Service. A small publicly-accessible green space and a shared use waterfront path are located along water's edge on the Block C shoreline.

The entire Master Plan Project site lies on filled tidelands associated with Boston Harbor; however, according to the ENF, only the approximately 13.71-acre area closest to Reserved Channel, including 2.48 acres within Block C, is subject to licensing under M.G.L. Chapter 91 (c. 91). The remaining area of approximately 27.95 acres (including the western portion of Block C and all of Blocks A and B) are landlocked tidelands. As noted below, the DEIR should confirm the areas of jurisdictional and landlocked tidelands. As shown on the Federal Emergency Management Agency's National Flood Hazard Layer, approximately 274,400 sf (6.3 acres) of the Master Plan Project site, including 2,464 sf (0.06 acres) of the Phase 1 site, is located within the 100-year floodplain (Zone AE) with a Base Flood Elevation of 12 ft NAVD88. The 100-year floodplain at the site is regulated under the Wetlands Regulations (310 CMR 10.00) as Land Subject to Coastal Storm Flowage (LSCSF).

The Master Plan Project is expected to generate 150 or more new average daily trips (adt) of diesel vehicle traffic, and is therefore deemed to be within the Designated Geographic Area (DGA) of any Environmental Justice (EJ) population[1] located in whole or in part within 5 miles of the project site as stated in 301 CMR 11.02 (definition of "DGA"). The Master Plan Project site is not located within an EJ population; however, it is located within one mile of 21 EJ populations in Boston designated as Minority; Minority and Income; and Minority, Income, and English Isolation. The site is located within five miles of 555 additional EJ populations designated as Minority; Income; Minority and Income; Minority and English Isolation; and Minority, Income, and English Isolation.

Environmental Impacts and Mitigation

According to the ENF, the cumulative environmental impacts associated with the Master Plan Project (including Phase 1) include nonwater-dependent use of approximately 13 acres of tidelands; alteration of 447 linear feet (lf) of Coastal Bank and 274,400 sf (6.3 acres) of LSCSF; generation of 66,074 average daily trips (adt), an increase of 62,859 adt compared to existing uses; construction of 712 New parking spaces in Phase 1 and additional spaces to be determined in later phases; use of 682,570 gallons per day (gpd) of water, an increase of 656,821 gpd compared to existing conditions; and generation of 620,518 gpd of wastewater, an increase of 597,110 gpd compared to existing conditions.

The environmental impacts of Phase 1 alone include nonwater-dependent use of approximately

[1] "Environmental Justice Population" is defined in M.G.L. c. 30, § 62 under four categories: Minority, Income, English Isolation, and a combined category of Minority and Income.

two acres of tidelands; alteration of 447 lf of Coastal Bank and 2,464 sf of LSCSF; generation of 25,210 adt, an increase of 24,867 adt compared to existing uses; construction of 712 New parking spaces (for a total of 1,175 spaces); use of 189,102 gpd of water, an increase of 183,104 gpd compared to existing conditions; and generation of 171,911 gpd of wastewater, an increase of 166,459 gpd compared to existing conditions.

Measures to avoid, minimize, and mitigate environmental impacts include a reduction of 7.39 acres of impervious area from existing conditions, including a reduction of 1.99 acres in Phase 1; 11.5 acres of public open space, including 2.42 acres in Phase 1; implementation of multimodal transportation improvements, including new roads and sidewalks, and bicycle accommodations; and construction of a stormwater management system consistent with the Massachusetts Stormwater Management Standards (SMS). Additional mitigation measures will be identified in the DEIR, including measures to enhance resiliency of the site and reduce Greenhouse Gas (GHG) emissions.

Jurisdiction and Permitting

The Master Plan Project is undergoing MEPA review and is subject to a mandatory EIR because it requires Agency Actions and exceeds the thresholds at 301 CMR 11.03(3)(a)(5) (Provided that a Chapter 91 License is required, New nonwater-dependent use or Expansion of an existing nonwater-dependent use structure, provided the use or structure occupies one or more acres of waterways or tidelands) and 301 CMR 11.03(6)(a)(6) (generation of 3,000 or more adt on roadways providing access to a single location); the Master Plan Project is also likely to exceed the threshold at 301 CMR 11.03(6)(a)(7) (construction of 1,000 or more New parking spaces at a single location). The project is also required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA (5 miles) around one or more EJ Populations. The Master Plan Project exceeds ENF review thresholds at 301 CMR 11.03(3)(b)(5) (New or existing unlicensed nonwater-dependent use of waterways or tidelands); 301 CMR 11.03(6)(b)(1)(a) (construction of a New roadway one-quarter or more miles in length; 301 CMR 11.03(6)(b)(14) (generation of 2,000 or more New adt on roadways providing access to a single location); 301 CMR 11.03(6)(b)(14) (generation of 1,000 or more New adt on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location; and, 301 CMR 11.03(6)(b)(15) (construction of 300 or more New parking spaces at a single location). Phase 1 will also meet or exceed these ENF and EIR thresholds.

The Master Plan Project and the Phase 1 project will require one or more c. 91 Licenses from MassDEP and a Sewer Use Discharge Permit from the Massachusetts Water Resources Authority (MWRA), and are subject to the 2010 MEPA GHG Policy and Protocol (GHG Policy). The project also requires a Public Benefits Determination (PBD) from the EEA Secretary. Future phases may meet or exceed additional review thresholds and/or require additional Agency Actions.

In addition, the Master Plan Project and Phase 1 require an Order of Conditions from the Boston Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the U.S. Environmental Protection Agency (EPA). There may be additional permitting requirements for future phases, which will be described in future filings.

The project involves Land Transfers, in the form of one or more ground leases, from Massport to the Proponent. The Land Transfers involve a majority of the project site, and will facilitate development of a common and integrated development plan across the entire site. Therefore, MEPA jurisdiction is broad and extends to those aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in the MEPA regulations.

SCOPE

General

The DEIR should follow Section 11.07 of the MEPA regulations for outline and content and provide the information and analyses required in this Scope. It should demonstrate that the Proponent will pursue all feasible measures to avoid, minimize and mitigate Damage to the Environment to the maximum extent feasible. The DEIR should provide all site elevations relative to the NAVD88 datum.

Project Description and Permitting

For both the Master Plan Project and Phase 1, the ENF provided a conceptual project description including the number of buildings, square footages, building heights, uses, parking, open space, and related infrastructure, and a phasing plan that describes how the full buildout of the project is anticipated to proceed (including the types of buildings and uses contemplated in future phases). It reviewed alternatives, provided a preliminary assessment of the impacts of the Master Plan Project and Phase 1, presented a conceptual mitigation framework addressing transportation, stormwater, and tidelands impacts, and described the overall climate resilience strategies for the site. The ENF identified EJ populations within the DGA and included a Public Involvement Plan (PIP) that the Proponent will implement to inform the public about the project. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the EENF contained an output report from the Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the "MA Resilience Design Tool"),[2] together with information on climate resilience strategies to be undertaken by the project.

For Phase 1, the DEIR should include updated site plans for existing and post-development conditions at a legible scale. Plans should clearly identify buildings, interior and exterior public areas, impervious areas, transportation improvements, pedestrian and bicycle accommodations, stormwater and utility infrastructure, easements, and existing and proposed site grades. The DEIR should provide detailed plans, sections, and elevations to accurately depict existing and proposed conditions, including proposed above- and below-ground structures, resiliency and other mitigation measures. MEPA.01 MEPA.02

For both the Master Plan Project and Phase 1, the DEIR should identify, describe, and assess the environmental impacts of any changes in the project that have occurred between the preparation of the ENF and DEIR. It should provide updated calculations of impacts in a tabular format. The DEIR should identify and describe state, federal and local permitting and review requirements associated with Phase 1 development, provide an update on the status of each of these pending actions, analyze applicable MEPA.03 MEPA.04

[2] Available at: https://resilientma.mass.gov/rmat_home/designstandards/

statutory and regulatory standards and requirements, and provide a discussion of the project's consistency with those standards.

The information and analyses identified in this Scope should be addressed within the main body of the DEIR and not in appendices. In general, appendices should be used only to provide raw data, such as drainage calculations, traffic counts, capacity analyses and energy modelling, and such data and analyses should be summarized with text, tables and figures within the main body of the DEIR. Information provided in appendices should be indexed with page numbers and separated by tabs, or, if provided in electronic format, include links to individual sections. Any references in the DEIR to materials provided in an appendix should include specific page numbers to facilitate review.

The ENF provided limited information about Phase 1 and the Master Plan Project buildout. The Project Notification Form (PNF) filed with the BPDA included much more detailed information about Phase 1, which was presented to the CAC for its review and comment. The DEIR should describe the comments and input received from the CAC for both Phase 1 and the Master Plan Project, both as part of the BPDA PNF and MEPA ENF reviews. The DEIR should discuss what design changes were made in response to this feedback, and what comments remain under consideration. MEPA.05

Alternatives Analysis

The ENF included an alternatives analysis for both the Master Plan Project and Phase 1. In both cases, a No Build Alternative was presented to represent existing conditions and provide a baseline from which the build alternatives can be evaluated.

Master Plan Project

The No Build Alternative would leave the site in its current largely-impervious (97% impervious) condition and with the existing uses. The site includes nine existing commercial and industrial buildings with a combined gross square footage of 790,000 sf, 822 parking spaces, roadways, and a small waterfront green space. The existing uses generate 3,215 unadjusted adt (2,573 adjusted adt), use 25,749 gpd of water, and generate 23,408 gpd of wastewater, all of which are less than the comparable impacts proposed in the conceptual Master Plan Project described in the ENF. According to the ENF, the site contains no public roads or sidewalks, provides minimal opportunities for public activity, and is physically separated from the adjacent residential neighborhood. The No Build Alternative would not realize the environmental benefits gained by redevelopment of the site, including reduced impervious area, a new stormwater management system, a more resilient site design, new public sidewalks and roadways, and over 11 acres of public open space. It also does not effectuate the purpose and need for the Master Plan Project, which, according to the ENF, is to redevelop an underutilized area and create a new destination with mixed-uses that that enhances existing institutions and organizations on or near the project site.

The Reduced Build Alternative was developed based on existing zoning applicable to surrounding areas to represent a lower-density development of the site and to provide a frame of reference for the Preferred Alternative; however, the zoning is not applicable to most of the site because it is owned by Massport. The Reduced Build Alternative would include redevelopment of the site to include approximately 3,400,000 sf of gross square footage of mixed uses in one existing building (655

Summer Street) and 29 new buildings (compared 24 proposed in the Preferred Alternative); presumably, a larger number of smaller buildings are propose din the Reduced Build Alternative due to zoning density limits. The Reduced Build Alternative would generate 50,735 unadjusted adt, use 280,500 gpd of water, and generate 255,000 gpd of wastewater, which are lower than the impacts of the Preferred Alternative. However, due to the higher number of buildings compared to the Preferred Alternative and the larger area needed to provide infrastructure to each building, the Reduced Build Alternative would reduce impervious area by only 2.3 acres (compared to a reduction of 7.36 acres in the Preferred Alternative) and would provide only 2.3 acres of public open space (compared to over 11acres in the Preferred Alternative). According to the ENF, the layout of the site under the Reduced Build Alternative would reduce the ability to incorporate climate resiliency design measures. The DEIR should review a Reduced Build Alternative that reflects a lower level of impact and increased open space compared to the Preferred Alternative. MEPA.06

According to the ENF, the Preferred Alternative for the Master Plan Project includes a mix of residential, retail, and commercial uses that will expand the residential neighborhood to the south onto the site and provide open space and retail uses that will attract the public to the site. As detailed below, the Master Plan Project includes a street grid designed to provide access for all modes of travel within the project site and to establish connections across the site to adjacent streets. Comments received on the ENF urge the Proponent to consider additional alternatives for land uses, including a higher proportion of residential uses. The DEIR should consider an alternative that includes a higher percentage of residential uses, discuss the potential environmental impacts associated with such an alternative, and justify why the particular mix of uses proposed in the Preferred Alternative is the best alternative given the unique location of the site in between marine industrial uses to the north and residential neighborhoods to the south. MEPA.07

Many commenters also expressed concern about the proposed building heights in Phase 1 and the Master Plan Project. The DEIR should describe the potential heights of all buildings in the Master Plan Project based on the gross square footage of development described above and evaluate alternatives for lower building heights along West First Street and higher building heights in the central and northern parts of the site. MEPA.08

As with land use alternatives, the construction of a new street grid and associated connections has the potential to create changes in land use and character of the site and its surroundings; as noted, land use conflicts could arise as the site is centrally located between the maritime industrial uses and the residential neighborhoods directly south of the site in South Boston. The DEIR should review how the proposed street grid may affect broader transportation network in the South Boston area, including truck traffic, the neighboring residential street network, bus mobility, and pedestrian and bicycle routes. The DEIR should discuss the state and local transportation and land use planning processes, provide a justification for selection of the preferred street grid, and present a phasing plan that shows conceptually how the preferred street grid will be built out over time and whether and how future opportunities will be provided to revise or update design in connection with future phases of development. As stated in the Transportation section below, the DEIR should discuss how the street grid alternatives would affect the results of the traffic study conducted for the Master Plan Project. MEPA.09 MEPA.10 MEPA.11

The Master Plan Project also presents strategies to improve resiliency of the site. The DEIR should assess the feasibility of large-scale resiliency measures along Reserved Channel, for instance, by MEPA.12

converting Pappas Way to open space or relocating Pappas Way inland to allow for better flood protection along the water's edge. The DEIR should present future climate scenarios that demonstrate the flooding risks on the site, if broader-scale resiliency measures are not implemented. The DEIR should discuss whether other regional resiliency efforts may extend to the Master Plan Project site at a future time, and if so, how the project will be designed to align with such regional efforts. MEPA.13 MEPA.14

Phase 1

The ENF reviewed No Build, Reduced Build, and Maximum Buildout Alternatives to the Preferred Alternative. The Phase 1 No-Build Alternative would maintain the existing structures and uses of the site. The two development areas in Phase 1, which have a combined area of 12.86 acres, primarily consist of impervious surface parking lots with 463 spaces, staging areas, and industrial buildings, including the bus company located along West First Street opposite the residential neighborhood. The existing uses on the Phase 1 site generate 343 unadjusted adt (275 adjusted adt), use 5,998 gpd of water, and generate 5,452 gpd of wastewater; these existing impacts are significantly lower than any of the proposed build alternatives. However, like the Master Plan Project site as a whole, the Phase 1 site does not include public uses, sidewalks, or streets, contains, little open space, and is not resilient to climate change, including sea level rise and storm surge.

The Phase 1 Reduced Build Alternative is based on the level of development allowed by zoning in the area. It would include construction of seven buildings with a combined gross square footage of 1,074,000 sf, including 748,000 sf of commercial R&D and 326,000 sf of retail and/or amenity space. Even though the combined square footage of the buildings is approximately 1,000,000 sf less than the Preferred Alternative, the buildings would cover a larger part of the site and would not allow for public open space or climate resiliency measures. The Reduced Build Alternative would reduce impervious area by 1.2 acres compared to existing conditions, generate 21,789 unadjusted adt, use 79,640 gpd of water, and generate 72,400 gpd of wastewater. The Phase 1 Maximum Buildout Alternative would include eight buildings with a combined gross square footage of 2,394,000 sf, including 2,080,500 sf of commercial R&D space, 157,000 sf of commercial space, and 156,500 sf of retail and/or amenity space. This alternative would reduce impervious area by 2.16 acres, but would generate 32,097 unadjusted adt, use 193,201 gpd of water, and generate 175,638 gpd of wastewater.

The DEIR should review an alternative Phase 1 use program with a majority of the building square footage devoted to residential uses and a lesser amount of commercial R&D development. The transportation, water use, wastewater generation, and urban design impacts of this alternative should be described quantitatively to the extent possible. As described below, it should review an alternative location of the proposed Phase 1 open space along Pappas Way and assess the climate resiliency and public accessibility benefits of the alternative location. MEPA.15

Environmental Justice

The Master Plan Project is expected to generate 150 or more New diesel truck trips per day, and is therefore deemed to be within the DGA of any EJ population located in whole or in part within 5 miles of the project site. The Master Plan Project site is not located within an EJ population; however, it is located within one mile of 21 EJ populations in Boston designated as Minority; Minority and Income; and Minority, Income, and English Isolation. The Master Plan Project site is located within five miles of

555 additional EJ populations designated as Minority; Income; Minority and Income; Minority and English Isolation; and Minority, Income, and English Isolation. Within the census tracts containing the above EJ populations within 1 mile of the project site, Chinese, Spanish and Spanish Creole, and Vietnamese are identified by the EEA EJ Mapping Tool as languages spoken by 5% or more of residents who also identify as not speaking English very well; within 5 miles of the site, the following additional languages are identified by the EEA EJ Mapping Tool as languages spoken by 5% or more of residents who also identify as not speaking English very well: Arabic, MonKhmer/Cambodian, French Creole, Portuguese and Portuguese Creole, Other Indic Languages, Russian, and African Languages.

Public Engagement

The ENF included a Public Involvement Plan (PIP) prepared by the Proponent. The SRP required the Proponent to develop a PIP that describes the Proponent's public outreach to public outreach to surrounding communities, including EJ populations within the DGA. The SRP also requires that, at a minimum, the Proponent must undertake outreach efforts prior to initiating each phase of development under the Master Plan Project, such as meetings with local officials and the community, a project website, distribution of information about the project at local events, and consultation with the CAC. The PIP is envisioned as a living document that evolves over time to incorporate new public engagement efforts based on feedback from stakeholders. Components of the PIP include the following:

- A Notification/Communications Strategy for notifying the public of upcoming CAC meetings and other public meetings and for providing project information and updates through an email distribution list, project website, social media, flyers/mailings, and published notice in local newspapers
- A Public Meeting Strategy which will include, at a minimum, at least one public informational meeting with language interpreters if necessary targeting EJ populations prior to the filing of PCNs for each future phase of the project.
- Ongoing Engagement Strategy consisting of meetings with public officials, and distribution of detailed project information to community-based organizations (CBOs), Tribes, and other organizations,
- Consultation with the CAC, including providing CAC members with copies of MEPA filings and copies of meeting presentations, meetings with the CAC between each MEPA filing, and implementation of a process for recording and responding to CAC questions and comments.

The Proponent should continue to implement the PIP and the DEIR should review all public engagement efforts conducted by the Proponent since the filing of the ENF. The PIP included in the DEIR should identify the Proponent's public engagement strategy for communicating with the public about the Master Plan Project. MEPA.16 MEPA.17

I received comments from several members of the CAC that questioned whether the Proponent has adhered to the SRP with respect to its requirements for consultation with the CAC. As noted, the CAC was initially formed to fulfill a role similar to that of an IAG in BPDA's typical Article 80 review process. With input from the MEPA Office, the members of the CAC were expanded prior to its formal establishment through the SRP. While initial CAC meetings were scheduled as part of the Article 80 process, it is contemplated that additional meetings and consultations will occur as required by the SRP throughout the remainder of the MEPA review process, which will include a robust public involvement

process. Future MEPA reviews will include a DEIR and FEIR review of both the Master Plan Project and Phase 1, as well as future filings in the form of PCNs for subsequent phases of the Master Plan Project. Thus, the CAC and members of the public will have opportunities to provide input into the project design before, during, and after the Proponent's submission of the DEIR, FEIR and multiple PCNs for future phases of development.

To facilitate better communication with the CAC and meet the spirit of the SRP, the Proponent is directed to intensify its interaction with the CAC with more frequent and regular updates, one or more meetings planned and scheduled with the CAC's input prior to the filing of the DEIR, and an ongoing discussion on how information should be provided to the CAC and its feedback acknowledged and responded to by the Proponent. A copy of the PIP included in the ENF should be circulated directly to the CAC for further input on how to improve coordination with the CAC during future phases of MEPA review. The DEIR should describe any changes made to the PIP in response to CAC input, and a revised PIP should be included with the DEIR. MEPA.18 MEPA.19

The DEIR should contain a full description of measures the Proponent implemented to date to promote public involvement by EJ populations since the ENF filing. As noted, the Master Plan Project is anticipated to generate over 150 adt of diesel truck traffic due to the proposed lab/office and commercial uses. Given the high number of EJ populations within a 5-mile radius, the Proponent should focus outreach efforts on a 1-mile radius, but supplement outreach to areas within a 5-mile radius where truck routes will likely extend based on best available information related to the Master Plan Project. While the Proponent indicates that Phase 1 alone is unlikely to generate over 150 adt of truck traffic, detailed information on truck routes should be provided for Phase 1. The DEIR should describe the method by which affected EJ populations within a 5-mile radius were identified, and outreach activities in those neighborhoods should include, at minimum, physical distribution of a project fact sheet to easily accessible locations and targeted dissemination of any notices of public meetings. Any fact sheets and notices should be translated into the applicable languages in those neighborhoods spoken by 5% or more of Limited English Proficiency (LEP) residents as identified by the EEA EJ Mapper. MEPA.20 MEPA.21 MEPA.22 MEPA.23

The DEIR should discuss whether and how the public involvement activities conducted for the project are consistent with best practices listed in the MEPA EJ Public Involvement Protocol. The DEIR, or a summary thereof, should be distributed to the CAC, all ENF commenters, all CBOs and tribes/indigenous organizations included in an updated "EJ Distribution List," and any independently identified grassroots organizations. An updated reference list should be obtained from the MEPA Office to ensure contacts are up to date, and a project-specific EJ Distribution List should be developed and returned to the MEPA Office. As outlined in the PIP (Attachment 7 of the ENF), the Proponent should hold at least one CAC meeting prior to filing the DEIR and ensure that the CAC is consulted with ample lead time to schedule this meeting. The proponent shall additionally hold at least one public meeting prior to filing the DEIR to present project updates and a preview of key analysis to be presented in the DEIR. The required public meeting should seek to involve EJ communities within 1 mile of the site, as well as additional affected communities identified over a 5-mile radius. The Proponent shall consult with the CAC, the MEPA office, and the Office of Environmental Justice and Equity to plan this meeting ahead of the DEIR filing to maximize public involvement and promote equitable participation. Additional public meetings may be recommended by the CAC to address specific project concerns and/or specific affected communities. MEPA.24 MEPA.25 MEPA.26 MEPA.27 MEPA.28 MEPA.29

Baseline Health Assessment

The DEIR should include a separate section on "Environmental Justice," and should include a baseline assessment of any existing "unfair or inequitable Environmental Burden and related public health consequences" impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1. and the MEPA Interim Protocol for Analysis of EJ Impacts. The DEIR should also include an analysis of the project's impacts to determine whether the project may result in disproportionate adverse effects, or increase the risks of climate change, on the identified EJ population, in accordance with 301 CMR 11.07(6)(n)2. and the MEPA Interim Protocol for Analysis of EJ Impacts. MEPA.30 MEPA.31

The DEIR should report on vulnerable health EJ criteria as reported by the DPH Tool, and all municipal-level information should be provided for the 5-mile DGA. Vulnerable health EJ criteria available at the census tract level should be reported for a 1-mile radius around the site and for any census tracts that include additional EJ populations affected by truck routes over a 5-mile radius as indicated above. As noted, the Proponent should provide detailed information about anticipated truck routing for the Phase 1 project. MEPA.32 MEPA.33

The DEIR should analyze the additional mapping layers available in the DPH tool identifying sources of pollution. These data should be reported for both the 1-mile and 5-mile DGA, and aggregated numbers may be provided for each of these geographic areas without breaking them down by census tract or census block group. The mapping layers include: MEPA.34

- Major air and waste facilities
- M.G.L. c. 21E sites
- "Tier II" Toxics Release Inventory Site
- MassDEP sites with AULs
- MassDEP groundwater discharge permits
- Wastewater treatment plants
- MassDEP public water suppliers
- Underground storage tanks
- EPA facilities
- Road infrastructure
- MBTA bus and rapid transit
- Other transportation infrastructure
- Regional transit agencies
- Energy generation and supply

In addition, the DEIR should identify any air quality related indicators in EPA EJ Screen that are elevated at or above the 80th percentile of statewide average and provide these data for a 1-mile radius around the site, as well as for any EJ populations that are anticipated to be affected by diesel truck traffic over a 5-mile radius (including travel along state and interstate highways). MEPA.35

Project Impacts

Given the level of traffic generation anticipated for the project, the DEIR should present an air quality assessment consistent with the *MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991)* for the study area used for the traffic study performed for the project. Data and MEPA.36

findings should be provided separately for the Master Plan Project and Phase 1. Data on CO, VOCs, NOx, PM2.5, PM10, and DPM should be provided, in addition to greenhouse gas emissions as indicated in the Climate Change section below. The DEIR should provide a comparison of air pollutants from Existing (current) conditions to future No Build, future Build, and future Build with Mitigation conditions. The DEIR should confirm that any impacted intersections within the traffic study area (where LOS was shown to degrade from No Build to Build conditions) and adjacent to EJ populations will be adequately mitigated. The DEIR should analyze routes of travel for new vehicle trips, and assess the number of diesel-generated truck trips and routes of travel that would result from the project including during the construction period. The DEIR should discuss whether diesel truck traffic is anticipated to extend near EJ populations within the 5-mile DGA, and provide a narrative description of whether air quality will be impacted at those locations based on a comparison of existing traffic volumes and the increase to be added by the project. To the extent truck routing is unknown for the full build Master Plan Project, this information may be provided for Phase 1 only (for a 5-mile radius). However, the DEIR should identify potentially affected EJ populations over the entire 5-mile DGA for the Master Plan Project based on best available information. MEPA.37 MEPA.38 MEPA.39 MEPA.40 MEPA.41

The DEIR should indicate whether any additional mitigation could be considered to reduce traffic and associated emissions at locations within and outside the traffic study area, and where project related traffic, including diesel traffic, may extend adjacent to EJ populations. Potential mitigation could include increased commitments to EV charging infrastructure, investments into public infrastructure and transportation, an expanded TDM program, air monitoring at location near EJ populations, and contributions to public health services that directly benefit EJ populations. MEPA.42

While the ENF indicates a net decrease in impervious surfaces added by the project, the potential for stormwater flooding and heat effects in the surrounding neighborhoods should be assessed. Analysis of the stormwater management system should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions. The DEIR should contain an GHG emissions analysis consistent with the GHG Emissions section of the Scope. The DEIR should analyze any other relevant short-term and long-term environmental or public health impacts of the project, including construction period activities. If any disproportionate adverse effects or increased risks of climate change are identified, the DEIR must include a discussion of proposed mitigation and include such measures in draft Section 61 findings. I note that generalized project benefits should not be analyzed to "net out" project impacts. MEPA.43 MEPA.44 MEPA.45 MEPA.46

Public Health

The DEIR should include a separate section on "Public Health," and discuss any known or reasonably foreseeable public health consequences that may result from the environmental impacts of the project. Particular focus should be given to any impacts that may materially exacerbate "vulnerable health EJ criteria," in accordance with the MEPA Interim Protocol for Analysis of EJ Impacts. In addition, other publicly available data, including through the DPH EJ Tool, should be surveyed to assess the public health conditions in the immediate vicinity of the project site, in accordance with 301 CMR 11.07(6)(g)10. The DEIR should provide an analysis of any Phase 1 project impacts that could materially exacerbate such conditions and highlight potential impacts associated with future phases that will be evaluated in future PCNs. To the extent any required Permits for the project contain performance standards intended to protect public health, the DEIR should contain specific discussion of such standards and how the project intends to meet or exceed them. As a sewer use discharge may be required MEPA.47 MEPA.48 MEPA.49 MEPA.50 MEPA.51

from MWRA, the DEIR should discuss the permit standards that will need to be followed to ensure that any wastewater discharges will meet public health standards. As detailed below, portions of the site have been contaminated by releases of hazardous waste and buildings to be demolished contain asbestos containing materials (ACM). The DEIR should address measures to protect public health during the construction and operation phases of the project. MEPA.52

Chapter 91/Tidelands

The entire project site lies on filled tidelands associated with Boston Harbor. However, according to the ENF, only the approximately 13.71-acres closest to Reserved Channel, including 2.48 acres within Block C (Phase 1), is subject to c.91 licensing; the remaining area of approximately 27.95 acres within the Master Plan Project site, including the remaining 10.38 acres of the Phase 1 site in the western portion of Block C and all of Blocks A and B, are landlocked tidelands not subject to licensing. At this site, landlocked tidelands are filled tidelands entirely separated by a public way in existence as of January 1, 1984, except for that portion of such filled tidelands within 250 ft of the nearest high water mark. As requested by MassDEP, the DEIR should confirm that Pappas Way is a public way that was in existence as of January 1, 1984; if it is not, then a significantly larger area of the site may be subject to c. 91 licensing. If Pappas Way is a public way for the purpose of defining landlocked tidelands at the site, then the DEIR should confirm the areas of jurisdictional and landlocked tidelands based on a surveyed delineation of the portions of the site within 250 ft of the high water mark in Reserved Channel. According to MassDEP, any jurisdictional tidelands on Massport-owned land are considered Commonwealth Tidelands, which are subject to more stringent standards for public access. Tidelands owned by the Proponent are private tidelands, except for any tidelands that are more than 100 rods (1,650 ft) from the historic high water (HHW) mark, which are defined as Commonwealth Tidelands. The DEIR should delineate identify and map all areas of jurisdictional Commonwealth Tidelands and private tidelands. The Proponent should consult MassDEP's comment letter for guidance on the methodology to be used for delineating the extent and type of tidelands at the site. MEPA.53 MEPA.54 MEPA.55 MEPA.56

According to MassDEP, both Phase 1 and the Master Plan Project are nonwater-dependent use projects pursuant to the Waterways Regulations at 310 CMR 9.12(2)(f)(1), (2), (3), (4), (6), and (8), and 310 CMR 9.12(4). Pursuant to the Waterways Regulations at 310 CMR 9.03(3), Massport and MassDEP entered into a Memorandum of Understanding (MOU) (dated March 15, 2001 and amended June 15, 2022) which guides the development of Massport's properties in South Boston for uses other water-dependent industrial uses. The MOU allows Massport to prepare a Waterfront Development Plan (WDP) for a development area which identifies alternative dimensional and use standards to those required by the Waterways Regulations and offsetting public benefits; alternatively, a development project can conform to the baseline regulations. The ENF appears to indicate that Phase 1 will be licensed in accordance with the baseline c. 91 regulations; this should be confirmed in the DEIR. The DEIR should review the c. 91 performance standards applicable to both Phase 1 and the Master Plan Project based on the boundary of jurisdictional tidelands and the delineation of Commonwealth Tidelands and private tidelands, including setbacks, building heights, ground level uses, open space, and public access requirements. The DEIR should include an analysis of how the Phase 1 project will comply with the applicable standards and provide a summary of the requirements that will apply to parcels to be developed in future phases. The DEIR should identify any areas for which a WDP will be prepared and describe the planning and licensing process WDPs as specified in the MOU. In particular, the DEIR should discuss the proposed permitting pathway for the proposed pile-supported hotel on Parcel K1, MEPA.57 MEPA.58 MEPA.59 MEPA.60

which, according to the Waterways Regulations at 310 CMR 9.32, is allowed only on previously authorized wharves, piers, pile fields or other pile-supported structures.

Public Benefit Determination

The entire project site is comprised of tidelands subject to the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168) and the Public Benefit Determination regulations (301 CMR 13.00). Consistent with Section 8 of the legislation, I must conduct a Public Benefit Review as part of the review of EIR projects located on landlocked tidelands that entail new use or modification of an existing use. I will issue a PBD within 30 days of the issuance of a Certificate on the Final Environmental Impact Report (FEIR).

Section 3 of this legislation requires that any project that is subject to MEPA review and proposes a new use or structure or modification of an existing use or structure within landlocked tidelands address the project's impacts on tidelands within the ENF. It indicates that the ENF *"shall include an explanation of the project's impact on the public's right to access, use and enjoy tidelands that are protected by chapter 91, and identify measures to avoid, minimize or mitigate any adverse impacts on such rights set forth herein."*

According to the ENF, the project will conform with the PBD standards at 301 CMR 13.00 by providing the following public benefits:

- Approximately 11.5 acres of public open space, including 2.41 acres in Phase 1;
- An open space network that will act as a defense against rising sea levels;
- Redevelopment of an underutilized site into a mixed-use development with retail, commercial, residential, civic, community, and cultural uses;
- Ground floor public uses, potentially including a supermarket in Phase 1; and,
- A new stormwater management system to improve water quality and infiltrate runoff to groundwater.

The DEIR should provide an updated PBD analysis for Phase 1 that provides additional details and, if necessary, identifies any changes to the project's public benefit commitments. Each PCN to be filed for a future phase of development should include a description of how the phase will comply with the PBD standards. MEPA.61

Wetlands and Stormwater Management

According to the ENF, approximately 6.3 acres of the Master Plan Project site, including 2,464 sf (0.06 acres) of the Phase 1 site, is located within the 100-year floodplain with a BFE of 12 ft NAVD88. Additional wetland resource areas at the site include Coastal Bank and Land Under the Ocean. According to the ENF, the Master Plan Project will impact 6.3 acres of LSCSF and 447 lf of Coastal Bank; of these impacts, 447 lf of Coastal Bank and 0.06 acres of LSCSF will be impacted in Phase 1. According to the ENF, the Coastal Bank at the site is armored with riprap and does not serve as a sediment source to downstream coastal dunes or beaches. The ENF indicated that the project will not impact the stability of the Coastal Bank; however, the ENF did not describe proposed activities on the Coastal Bank or review the project's compliance with the relevant performance standards.

Impacts to LSCSF in Phase 1 are associated with proposed improvements to the landscaping of open space on Block C. Impacts of the Master Plan Project on LSCSF include site regrading and construction of new structures; however, the ENF did not provide any details of proposed activities in LSCSF. The DEIR should include a description of the proposed fill and grading on the site, including the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site, and describe how the grading will be done relative to surrounding areas. Representative cross-sections of the proposed buildings relative to proposed elevations and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR. The DEIR should review how the project will comply with applicable performance standards, including MassDEP's proposed standards for LSCSF. As detailed below, the DEIR should include a hydrodynamic modeling to assess the impacts of proposed fill and structures on floodplain functions under existing and future conditions. MEPA.62 MEPA.63 MEPA.64 MEPA.65

The project will reduce the amount of impervious area at the site, which will result in a reduction in the volume of stormwater runoff and peak rates of runoff under proposed conditions. According to the ENF, the proposed stormwater management system will include deep sump hooded catch basins, subsurface infiltration systems, and/or proprietary water treatment devices to reduce Total Suspended Solids (TSS) by at least 80% prior to discharge. The stormwater management system will be designed to meet the Boston Water and Sewer Commission's (BWSC's) requirement that 1.25 inches of rainfall from impervious areas be recharged at the site.

The DEIR should describe the proposed stormwater management system and provide an analysis to demonstrate how it will be designed to satisfy all standards of the Stormwater Management Standards (SMS) and comply with the Total Maximum Daily Load (TMDL) stablished for pathogens in Boston Harbor. It should include detailed plans at a readable scale of the proposed drainage system and provide calculations of water quality volume, infiltration volume, total suspended solids removal, and peak rates of runoff for predevelopment and post- development site. The DEIR should include an evaluation of the use of low impact design (LID) strategies and green infrastructure wherever practicable. It should provide analysis of the capacity of the stormwater management system under future climate conditions, as described below. The DEIR should provide an overview of the stormwater management system on the Master Plan Project site and discuss the interconnections of the stormwater management system between Phase 1 and subsequent phases. It should describe how the system will be designed and constructed to support both individual phases and with adequate capacity to accommodate future phases, whether stormwater discharges from both phases are anticipated to be accommodated through any common infrastructure (such as piping or subsurface infiltration systems), and whether the system will be constructed to accommodate the volume of water anticipated under both phases. If the system will be built to handle only Phase 1, the DEIR should discuss whether and how Phase 1 design will be consistent with any future upgrades that may be needed for future phases. MEPA.66 MEPA.67 MEPA.68 MEPA.69

Traffic and Transportation

Existing Conditions

According to the ENF, existing uses on the site generate 6,481 adt, including 343 adt associated with uses in the areas to be developed under Phase 1. Access to the site is currently provided by

entrances off Pappas Way, West First Street, and E Street. According to the ENF, limited bicycle and pedestrian facilities are provided on these streets. There are 822 existing parking spaces at the site, including 463 spaces within the areas designated for development in Phase 1.

Proposed Roadways

According to the ENF, the Master Plan Project will provide a multimodal, internal roadway network to accommodate mobility within the Master Plan Project site and reduce travel demands on the adjacent E Street, West First Street, and Pappas Way roadways serving the travel needs of neighboring homes and businesses. The roadway network is anticipated to include an extension of F Street from West First Street northwards approximately 1,300 ft to serve as a front door to many of the proposed Master Plan Project buildings and allow access to the Master Plan Project's open spaces. Intersecting the extension of F Street will be four east-west running streets connecting E Street and Pappas Way. These cross-streets are anticipated to handle the majority of loading and freight needs on the Master Plan Project site and may facilitate connections to parking facilities on the Master Plan Project site, although parking locations have not been determined at this stage of design. This roadway grid is intended to allow the F Street extension to facilitate a greater diversity of travel users (pedestrians, bicyclists, micromobility, etc.) rather than funnel most or all of the anticipated vehicle traffic serving the Master Plan Project through more condensed routes.

The ENF listed the following considerations that influenced the design of the proposed street network:

- The intersection of the southernmost of the proposed east-west streets with E Street will be slightly offset from the intersection of E Street and Cypher Street at the request of Massport to minimize additional freight circulation within the Master Plan Project site and maintain it on freight designated streets (E Street and Cypher Street). The offset is also intended to discourage vehicle speeding when accessing the Master Plan Project site from the west along Cypher Street, where a more industrial nature with fewer curb cuts provides fewer opportunities to naturally slow traffic.
- The two middle east-west streets will be separated from one another by approximately 100 to 150 feet and front the central open space in between these roads. It is anticipated that these streets will handle less vehicle traffic than the southernmost and northernmost east/west streets to foster a more pleasant environment within the Master Plan Project's open spaces.
- The northernmost of the east-west streets will provide a missing link between Pappas Way and E Street situated roughly halfway between the Summer Street and West First Street corridors. This street will be best positioned to facilitate cross-traffic between the Pappas Way and E Street corridors.

In addition, a pedestrian passageway is proposed between E Street and the extended F Street will further promote non-motorized travel within the Master Plan Project site and to surrounding neighborhoods. This passageway will intersect with the new east-west street network through safe, crossing connections, further promoting traffic calming on the east/west street network.

According to the ENF, the proposed streets will be designed in accordance with the requirements of the Americans with Disabilities Act ("ADA"), Boston Complete Streets Guidelines, and the

Massachusetts Architectural Access Board, and will include the replacement of all deficient sidewalks, curb ramps, and pedestrian crossings along the Master Plan Project site frontage. Sidewalks will be reconstructed and widened (where possible), all pedestrian crossings will be made accessible, improvements to street lighting will be made where necessary, and street trees will be planted, where appropriate and not already conducted as part of Phase 1 activities.

The DEIR should clarify which streets, or portions thereof, will be constructed in Phase 1, and should present a phasing plan that indicates how the street grid will be built out over time and what opportunities for future revisions will exist. It should describe the dimensions of, and provide plans and sections showing, vehicular traffic lanes, pedestrian and bicycle accommodations, and adjacent street trees, lighting, and other amenities. MEPA.70

The City of Boston has suggested that the southernmost proposed east-west roadway be reconfigured such that its intersection with E Street is aligned with the intersection of Cypher Street and E Street. The DEIR should include an evaluation of this alternative alignment with respect to traffic operations, transit service, pedestrian and bicycle connectivity, and truck access. Given Massport's investments in establishing a truck route using Cypher Street and E Street and the recognition of this truck route in the RLFMP Master Plan, the DEIR should review impacts to truck traffic associated with maritime and other industrial uses at the Conley Terminal and the RLFMP. MEPA.71 MEPA.72

The proposed Master Plan Project street grid appears to provide a potential alternate vehicular route between Summer Street, the project site, and West First that would allow all or a portion of Pappas Way to be converted to open space designed to increase the resiliency of the site. The DEIR should include an evaluation of traffic operations under future conditions with most or all of the proposed buildout of the project completed and a) with all of Pappas Way unavailable for vehicular use and b) with the southern section of Pappas Way (south of Block C) unavailable for vehicular use. As stated above, the DEIR should present an alternatives analysis related to climate resiliency that includes an alternative assuming the removal or relocation of Pappas Way; the DEIR should discuss the feasibility of these strategies and how the project aligns with state and local resiliency planning for the area. MEPA.73 MEPA.74

Transportation Impact Assessment

The Master Plan Project will generate 66,074 adt, an increase of 59,593 adt compared to existing uses, of which 25,210 adt (an increase of 24,867 adt over existing uses) will be generated by Phase 1. The trip generation estimate is based on trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th edition, using Land Use Codes (LUC) 221 (Multi-Family Mid-Rise), 310 (Hotel), 710 (General Office Building), 760 (Research & Development Center), 820 (Shopping Center), and 850 (Supermarket). The DEIR should fully document the trip generation estimates for each travel mode, including but not limited to autos, trucks, public transit, and walking/bicycling. It should assign vehicle and transit trips to the roadway network and transit system and verify how the trip distribution percentages were calculated. As noted, the DEIR should describe and quantify new truck trips added to roadways within the 5-mile DGA at locations that are adjacent to EJ populations. To the extent information is not yet available for the Master Plan Project, this analysis can be provided for Phase 1 only for a 5-mile radius. MEPA.75 MEPA.76

The DEIR should include a traffic study prepared consistent with the EEA/MassDOT *Transportation Impact Assessment (TIA) Guidelines* issued in March 2014 and this Scope. The TIA should provide a comprehensive evaluation of the project's use of area roadways, public and private transit, pedestrian and bicycle facilities, and other transportation modes. It should describe existing conditions, include a plan of the transportation study area, and identify the proposed site access and egress. The DEIR should provide an analysis of the transportation impacts over the full 20+ year planning horizon and potential mitigation measures, including anticipated roadway layout and connections; the filing should address consistency with other state and local planning efforts such as the South Boston Transportation Action Plan, South Boston Seaport Strategic Transit Plan, and transportation planning for the RLFMP. The Proponent should consult with the MEPA Office to define the scope and methodology to be used for this analysis. MEPA.77 MEPA.78 MEPA.79

For Phase 1, it should provide counts of existing traffic in the traffic study area and include projections for future traffic conditions under No Build 2031, Build 2031, and Build 2031 with Mitigation scenarios. The No Build 2031 and Build 2031 scenarios should incorporate a background growth rate in traffic volumes and growth due to trips generated by nearby planned development projects. Future conditions should incorporate transportation projects by MassDOT, MBTA, Massport and the City. MEPA.80 MEPA.81

The study area for the TIA should be consistent with that used for analyses prepared for the City for Phase 1, including the roadways and intersections listed below, in addition to on-site roadways and intersections with adjacent streets that will be present under future conditions. The DEIR should identify any additional intersections that should be added for analysis of the Master Plan Project. MEPA.82 MEPA.83

- D Street/I-90 On-Ramp (signalized)
- D Street/Summer Street (signalized)
- D Street/Fargo Street (signalized)
- D Street/Cypher Street (signalized)
- D Street/West First Street (unsignalized)
- Pumphouse Road/Massport Haul Road (signalized)
- Pumphouse Road/Summer Street (signalized)
- E Street/Cypher Street Extension (unsignalized)
- E Street/West First Street (unsignalized)
- Fargo Street/Summer Street (unsignalized)
- F Street/West First Street (unsignalized)
- Pappas Way/Drydock Avenue/Summer Street (signalized)
- Pappas Way/East First Street/West First Street (unsignalized)
- East First Street/Summer Street (signalized)
- Congress Street at D Street;
- Congress Street at Port Lane;
- Congress Street at Starboard Lane;
- Congress Street at Northern Avenue;
- Congress Street at I-90 Ramps and B Street;
- Haul Road at Northern Avenue; and,
- Northern Avenue at D Street.

Any additional intersections where project- generated trips are anticipated to increase peak hour traffic volume by 5% or more, or by more than 100 vehicles per hour, should be included in the TIA. MEPA.84

The TIA should describe the project's anticipated transportation impacts and identify appropriate mitigation measures. The Proponent should indicate a clear commitment to implement proposed mitigation measures and describe the timing of their implementation, including whether measures are implemented based on phases of the project or occupancy levels. MEPA.85

Multimodal Transportation

As noted above, the project will provide ground level pedestrian improvements, including bicycle and pedestrian facilities on proposed roadways. The DEIR should provide a comprehensive and detailed description of existing and proposed pedestrian facilities in the study area, including sidewalks, crosswalks, bicycle facilities and bicycle parking spaces. The TIA should identify areas that are structurally deficient or not meeting current codes for accessibility, including sidewalks, crosswalks, ramps, and pedestrian equipment and propose mitigation measures to address these conditions. It should review the regional pedestrian and bicycle network and describe potential measures to enhance connections between the site and regional routes, public transportation facilities and complementary land uses such as shopping centers, residential areas and EJ populations within the DGA. The TIA should evaluate these routes based on the origin-destination of potential residents, employees and visitors. The DEIR should include clear commitments to pedestrian and bicycle mitigation measures to support the anticipated high mode shares of these modes of travel. MEPA.86 MEPA.87 MEPA.88 MEPA.89

The DEIR should include a review of public transportation options serving the site and identify proposed mode shares for these services. It should describe pedestrian and accessibility conditions between the site and bus stops or other transit facilities, and propose mitigation measures to improve conditions to enhance the use of public transportation by employees, residents and visitors of the site. MEPA.90

Traffic Operations

For each intersection in the study area, the DEIR should provide capacity analyses for the weekday peak periods for Existing 2024, No Build 2031, Build 2031 and Build 2031 with Mitigation conditions. For all analysis scenarios, the TIA should provide illustrations depicting the peak hour 50th (average) and 95th percentile queue lengths for each lane group/turning movement and a tabular summary of the results of the intersection operations analysis, including volume-to-capacity ratios (V/C), average delays and level-of-service (LOS). Color-coded illustrations depicting LOS for each lane group/turning movement should be provided for each scenario. MEPA.91 MEPA.92

The DEIR should describe transportation impacts associated with the project. It should identify measures to mitigate these impacts and the phase or level of buildout when implementation of the mitigation will be needed to address the impacts. Any proposed roadway improvements, including bicycle/pedestrian facilities, that are recommended to mitigate traffic impacts should be consistent with Complete Streets design guidelines contained in the *MassDOT Project Development and Design Guide*. The DEIR should include detailed plans that demonstrate the feasibility of constructing any proposed MEPA.93 MEPA.94

roadway improvements. The Proponent should consult with MassDOT prior to filing the DEIR regarding any roadway improvements affecting state roads. MEPA.95

Parking

According to the ENF, there are 822 existing parking spaces at the site, including 463 spaces within the areas designated for development in Phase 1. The Phase 1 project will include a total of 1,175 parking spaces; however, the ENF indicated that the number of parking spaces for the Phase 1 and Master Plan Project has not been determined. The DEIR should provide an analysis of the potential parking demand associated with the Master Plan Project and review potential locations for parking facilities and identify vehicular access points to those facilities. MEPA.96 For Phase 1, the DEIR should provide a detailed analysis of the proposed parking supply for Phase 1 and clarify whether it is also intended to serve future phases of the project. MEPA.97 It should document how the parking supply was developed and compare the number of proposed spaces to the amount required based on the most recent edition of ITE's *Parking Generation*, local zoning requirements and comparable facilities. MEPA.98 The DEIR should describe the number of parking spaces that will be occupied throughout the day, identify periods of peak use and evaluate opportunities for shared parking. The DEIR should review measures for minimizing the parking supply in Phase 1 and the Master Plan Project through the implementation of strategies to minimize parking demand, such as market-rate pricing for parking. MEPA.99

Transportation Demand Management and Monitoring

According to the ENF, the Proponent will encourage the use of alternative modes of travel to the site by implementing a TDM program which includes the following:

- Ongoing membership and participation in the local Transportation Management Association (TMA) and its programs.
- Provide real-time transit information in building lobbies per BTD review. Make available transit maps, schedules and other information relevant to commuting options.
- Staff will be available to coordinate TDM services.
- Provide marketing information on multimodal travel options and benefits to employees and visitors on an annual basis.
- Provide an information package on travel alternatives to new employees.
- Provide car-sharing spaces (e.g., Zipcar) subject to demand.
- Provide long-term covered and secure bicycle parking, and short-term bicycle parking for visitors in compliance with the BTD Bike Parking Guidelines, including provision of end-of-trip facilities for cyclists such as showers and changing facilities. Bicycle maintenance areas are proposed to be included, one area for each block proposed under Phase 1.
- Provide additional bike parking in response to demand.
- Provide consolidated off-street service delivery and loading facilities for all tenants.
- Provide service/loading dock manager to manage and coordinate service area and any curbside loading for buildings.

The DEIR should evaluate additional TDM measures, including measures for minimizing parking supply. It should include a Transportation Monitoring Program that will be implemented to MEPA.100 MEPA.101

evaluate the assumptions made in the traffic study and the adequacy of the transportation mitigation measures, including the TDM program.

Water /Wastewater

According to the ENF, the Master Plan Project will increase water use at the site from 25,749 gpd under existing conditions to 682,570 gpd, including 189,102 gpd associated with Phase 1, and will increase wastewater generation from 23,408 gpd under existing conditions to 620,518 gpd, including 171,922 gpd associated with Phase 1. According to the BWSC, water service to the site is provided by water mains in all of the streets surrounding the site. The DEIR should review the capacity of BWSC's system to provide water to Phase 1 and the Master Plan Project and describe existing and proposed water infrastructure needed to serve the site, including any on-site or off-site improvements that the Proponent will be required to construct. MEPA.102 The DEIR should describe water conservation measures to be implemented by the project, including reuse of rainwater and gray water, water conserving plumbing fixtures, and measures to eliminate or minimize water needed for irrigation. MEPA.103

Wastewater from the site enters separated and combined systems located in adjacent streets. Two combined sewer overflows (CSOs) discharge into Reserved Channel. According to the MWRA, flows from the project site are conveyed to BWSC's South Boston Interceptor North Branch ("SBI-NB"), which in turn conveys flows to BWSC's Boston Main Interceptor. The sanitary flows are eventually carried to MWRA's Columbus Park Headworks in South Boston, which directs flows to the Deer Island Treatment Plant. The SBI-NB serves both separate and combined sewer areas of South Boston. Stormwater entering the sewer system from combined sewer areas can exceed the capacity of the SBI-NB, causing surcharging of the SBI-NB that can contribute to CSOs to the Reserved Channel and the Fort Point Channel in large storms. The DEIR should review the capacity of BWSC's wastewater and drainage systems to accept flows from the site from Phase 1 and the Master Plan Project and describe existing and proposed infrastructure needed to serve the site, including any on-site or off-site improvements that the Proponent will be required to construct. MEPA.104

The project will be required to mitigate its contribution of flow into the BWSC's sanitary system MEPA.105 MassDEP regulations at 314 CMR 12.04(2)(d) specify that communities with CSOs must require projects generating 15,000 gpd or more of new wastewater flow to remove four gallons of I/I for each gallon of wastewater. The Proponent should consult with the City to identify appropriate I/I mitigation MEPA.106 for this project. The DEIR should include a commitment to I/I removal and identify any mitigation MEPA.107 projects or monetary contribution by the Proponent. The DEIR should specifically identify potential MEPA.108 increased CSO discharges affecting surface water quality in EJ populations and address mitigation of these impacts. Groundwater discharges into the sanitary system are prohibited without a Temporary Construction Dewatering Permit from the MWRA. The DEIR should indicate whether the project will MEPA.109 require a discharge permit from the MWRA's Toxic Reduction and Control (TRAC) Department and should include a commitment to use oil/gas separators in the parking garage drainage systems.

Hazardous Waste

According to the ENF, there are documented three releases of hazardous waste on the Master Plan Project site identified by Release Tracking Numbers (RTNs) 3-0029582, 3-0029985, and 3-0017742 which are regulated under M.G.L. 21E and the Massachusetts Contingency Plan (MCP)

regulations at 310 CMR 40.00. According to the ENF, one of the releases, RTN 3-0029582, has been addressed and is considered "closed" under the MCP. Another release, RTN-3-0017742, is located under Pappas Way and has been closed with limitations, including an Activity and Use Limitation (AUL) which restricts the uses and activities in that area. The third release, RTN-3-0029985, is located along the roadway at Pappas Way. The DEIR should include a map showing the areas subject to these RTNs and provide a summary of the site investigations and remediation activities related to these releases. It should describe any restrictions included in the existing AUL and potential restrictions (AULs) on uses of the site that may be applicable based on future investigations and remediation of the site pursuant to the MCP. The DEIR should document the proposed location of stormwater management systems, green infrastructure, open space, and roadways, and other infrastructure for the Master Plan Project (including Phase 1) in relations to areas of contaminated soils and groundwater. It should describe any on-site excavation, pumping, storage, treatment and disposal of contaminated soil and groundwater, and measures to minimize public exposure to contaminants. The DEIR should discuss whether any additional AULs will be placed on the site. It should address measures to be implemented during the construction and operation phases of the project to protect public health and the environment. MEPA.110 MEPA.111 MEPA.112

According to the ENF, asbestos is present in existing buildings on the site. The DEIR should identify the buildings with ACM and review measures for removal, handling, and disposal of ACM prio to demolition of any buildings. It should describe measures that will be taken during the construction period to prevent public exposure to ACM. MEPA.113

Climate Change

Adaptation and Resiliency

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool ("Tool") to assess the climate risks of the project. The Tool was used to evaluate Phase 1 only; according to the ENF, the remainder of the Master Plan Project site was not evaluated due to the phased nature of the project and future phases will be evaluated by the Tool or other methods available at the time. Based on the output report attached to the ENF, the Phase 1 project has a high exposure rating based on the project's location for sea level rise/storm surge, extreme precipitation (urban flooding) and extreme heat. Based on the 60-year useful life identified for the Phase 1 project and the self-assessed criticality of the proposed buildings and roadways, the MA Resilience Design Tool recommends a planning horizon of 2070 and a return period associated with a 500-year (0.2% chance) storm event with respect to sea level rise/storm surge and a 100-year (1% chance) storm event with respect to extreme precipitation. The Tool does not identify return periods for proposed open space. The output report recommends planning for the 90th percentile with respect to extreme heat (which indicates an increase in extremely hot days as compared to a historical baseline).

According to the ENF, both Phase 1 and the Master Plan Project will reduce impervious area and add landscaping and green infrastructure, which will reduce urban heat island effect and flooding compared to existing conditions. The DEIR should analyze the design of Phase 1 in the context of the design guidelines for the 2070 100-year storm event for precipitation and 500-year storm event for sea level rise/storm surge. It should review the capacity and performance of the proposed Phase 1 stormwater management system for various design storm events for the post-development condition, as compared to the pre-development condition, including the 2-, 10-, and 25-year design storms and the MEPA.114 MEPA.115

precipitation depths recommended by the Tool. The DEIR should review landscaping, tree planting, Low Impact Design (LID) and green infrastructure measures to be incorporated into the project design. MEPA.116
The DEIR should evaluate alternative locations and designs of the proposed open space, such as closer to Reserved Channel, to maximize their effectiveness in increasing the resiliency of the site and surrounding areas to climate change, including sea level rise/storm surge and urban flooding. MEPA.117

According to the ENF, the Master Plan Project has been designed to meet and exceed the sea level rise design flood elevation ("SLR-DFE") established for the Master Plan Project site by the City. The majority of the site will be elevated to approximately15.8 ft NAVD 88, with the finished floor elevation for buildings at or above approximately 16.8 ft NAVD for non-residential building and approximately 17.8 ft NAVD 88 for residential buildings. These elevations are generally consistent with the weighted average projected wave action water elevation of 16.8 ft NAVD 88 for the 2070 500-year storm event identified by the Tool, but the proposed ground-level elevation of 15.8 ft is 1.0 ft lower. According to the DEIR, the Proponent envisions that elevating the site to elevation 15.8 ft NAVD 88 will allow adjacent sites to tie in to establish a flood protection barrier. The DEIR should evaluate an alternative design in which the site is elevated to 16.8 ft NAVD 88. MEPA.118 According to the ENF, the Master Plan Project has also been designed to align with the Massport Floodproofing Design Guide (2018) and stated DFE for Massport and critical facilities. All critical facilities and equipment identified in the guidelines (electrical, water and plumbing, mechanical, telecommunications, emergency and fire, and hazardous materials) will be located at an elevation above 17 ft NAVD 88. In addition, all noncritical buildings and equipment located lower than 17 ft NAVD 88 would either dry or wet floodproofed depending on their use. The Master Plan Project will target a minimum elevation of approximately 12.6 ft NAVD 88 for open space and streets to avoid future regular monthly flooding during high tide events in 2070.

The DEIR should provide the results of a coastal engineering analysis that assesses potential changes and impacts to the floodplain. MEPA.119 The analysis should include hydrodynamic modeling to evaluate potential changes to flood extent, depth, and velocities under current and future storm conditions, and under existing and proposed buildout conditions. It should analyze potential impacts to neighboring properties caused by redirection of flood waters or channelization of flow. As recommended by CZM, MEPA.120 the hydrodynamic analysis should be conducted for conditions using the most current FEMA flood mapping and for future conditions the most up-to-date projections for sea level rise for the life of the project. The analysis should evaluate potential impacts to adjacent off-site properties and to buildings MEPA.121 and structures constructed in earlier phases of the project. The analysis should also assess the degree of MEPA.122 impact associated with Phase 1, and the need for any interim measures to mitigate impacts if adequate mitigation is dependent on implementation of the full buildout of the site. Alternatives to the building MEPA.123 and street designs and layout should be considered if necessary to avoid these impacts. In addition to this analysis, the DEIR should include a description of the proposed fill and grading on the site, including MEPA.124 the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site. Representative cross-sections of the proposed buildings relative to proposed elevations MEPA.125 and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR. To assess the MEPA.126 potential benefits of increasing the amount of open space near or adjacent to Reserved Channel, the analysis should evaluate floodwater characteristics under future conditions under scenarios in which the Phase 1 open space is located adjacent to Pappas Way, and Pappas Way is partially or entirely converted to open space, as discussed in the Transportation section above. As stated above, the DEIR should MEPA.127

supplement the alternatives analysis to present additional alternatives for larger-scale resiliency solutions on the site.

Given the long-term buildout of the project, the DEIR should describe how each phase will be designed and constructed at the proposed elevations in a manner that will connect to the existing grades in areas to be developed under future phases. The DEIR should describe how flood pathways may change as portions of the site are elevated while others remain at existing elevation, and the hydrodynamic modeling should model interim conditions after construction of each phase. The DEIR review options for minimizing redirection of flows by abrupt grade changes created by elevating a portion of the site to be developed under a future phase while surrounding areas remain at existing elevations, such as accelerating the flood infrastructure timelines for future phases and expediting the closing of flood pathways. The DEIR should describe how the Proponent can work with abutting property owners to encourage the implementation of complementary coastal flood resilience measures. MEPA.128 MEPA.129 MEPA.130 MEPA.131

Greenhouse Gas (GHG) Emissions

This project is subject to review under the May 5, 2010 MEPA GHG Policy. The Policy requires Proponents to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO_2 emissions of the project's energy use (stationary sources), transportation-related emissions (mobile sources), and land alteration. MEPA.132

Stationary Sources

For Phase 1, the DEIR should include a GHG analysis for stationary sources prepared in accordance with the GHG Policy, guidance provided in the comment letter submitted by the Massachusetts Department of Energy Resources (DOER), which is incorporated in this Certificate in its entirety, and this Scope. For Phase 1, the DEIR should include an analysis that calculates and compares GHG emissions associated with a Base Case and a Preferred Alternative that achieves greater reductions in GHG emissions. As required by the SRP, future PCNs submitted for future phases of the Master Plan Project should include analyses of the stationary-source GHG emissions associated with proposed buildings. MEPA.133 MEPA.134 MEPA.135

The stationary source GHG analysis, which should be provided for Phase 1 in the DEIR, should clearly demonstrate consistency with the key objective of MEPA review, which is to document the means by which Damage to the Environment can be avoided, minimized and mitigated to the maximum extent feasible. The DEIR should identify the model used to analyze GHG emissions, clearly state modeling assumptions, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation. The DEIR should include the modeling printouts for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source. Other tables and graphs, such as the table of mitigation measures recommended by DOER, may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures as necessary. The DEIR should provide data and analysis in the format requested in DOER's letter. The DEIR should clarify the proposed uses within the warehouse building (office, manufacturing, etc.) and what portion of the building this space will occupy. The DEIR MEPA.136 MEPA.137 MEPA.138 MEPA.139 MEPA.140 MEPA.141

should present a comprehensive evaluation of mitigation measures, including high-efficiency building envelope, electrification, installation of rooftop solar photovoltaic (PV) systems, and installation of electric vehicle (EV) charging stations.

Mobile Sources

For Phase 1, the GHG analysis should include an evaluation of potential GHG emissions associated with the project's mobile source emissions. The DEIR should follow the guidance provided in the GHG Policy for *Indirect Emissions from Transportation* to determine mobile emissions, and should provide data on Existing Conditions, Build Conditions, and Build Conditions with Mitigation consistent with the air quality assessment required under the Environmental Justice section. The DEIR should describe truck loading and staging activities and estimate GHG emissions from idling. The Proponent should thoroughly explore means to reduce overall single occupancy vehicle trips and to minimize air emissions from diesel vehicle traffic. The DEIR should also review measures to promote the use of low-emissions vehicles, including installing EV charging stations and providing designated parking spaces for these vehicles (a minimum of 25% of proposed spaces) with the balance of spaces being EV ready for future installation.[3] The Build with Mitigation model should incorporate TDM measures, and any roadway improvements implemented by the project, and document the associated reductions in GHG emissions. The DEIR should explain how TDM measures will be monitored and adjusted over time and provide a methodology for quantifying emission reductions impacts rather than an assumed percentage reduction.

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As stated above, the DEIR should include an air quality analysis in accordance with the *MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991)*. Additional analysis of air quality at intersections adjacent to EJ populations should be conducted in accordance with the Environmental Justice Scope above. I am aware that MassDEP has proposed regulatory changes to adopt the California Air Resources Board (CARB)'s Medium and Heavy Duty (MHD) engine and vehicle regulations. These MHD regulations include three parts: 1) GHG Phase 2 Standards for MHD Engines and Vehicles starting in model year (MY) 2025; 2) Heavy-Duty Omnibus Regulation which contains a comprehensive set of emission standards and other emission-related requirements for heavy-duty engines and vehicles, starting in MY 2025; and 3) Advanced Clean Trucks Regulation resulting in offers of zero emission vehicle (ZEV) sales starting in MY 2025 and ramping up to 55% of Class 2b-3, 75% of Class 4-8 and 40% of Class 7-8 tractor sales being ZEVs in MY 2035. Given this transition to a cleaner truck fleet as of MY 2025, it is my expectation that mitigation commitments relative to mobile source emissions will address diesel vehicle traffic; early adoption of future mandates relative to its truck fleet is strongly encouraged.

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Construction Period

The DEIR should describe how construction activities will be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The DEIR should describe all construction-period impacts and mitigation relative to noise, air quality, water quality, and traffic, including construction vehicle trips through residential areas. It should confirm that the project will require its construction contractors to use Ultra Low Sulfur Diesel fuel, and

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[3] More information on EV infrastructure can be obtained from the MassEVolves program at www.massevolves.org.

discuss the use of after-engine emissions controls, such as oxidation catalysts or diesel particulate filters. The DEIR should provide more information regarding the project's generation, handling, recycling, and disposal of construction and demolition debris (C&D) and identify measures to reduce solid waste generated by the project. I encourage the Proponent to commit to C&D recycling activities as a sustainable measure for the project. Any contaminated material encountered during construction must be managed in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.00) and with prior notification to MassDEP. The project will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with its NPDES CGP to manage stormwater during the construction period. The DEIR should describe stormwater management measures that will be implemented during construction. It should describe potential construction period dewatering activities and associated permitting (i.e., NPDES) and identify mitigation measures. All construction-period mitigation measures should be listed in the draft Section 61 Findings. MEPA.153 MEPA.154 MEPA.155 MEPA.156

Mitigation and Draft Section 61 Findings

The DEIR should include a separate chapter summarizing all proposed mitigation measures including construction-period measures. This chapter should also include a comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations. The filing should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, EJ, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project. The filing should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing to ensure that adequate measures are in place to mitigate impacts associated with each development phase. MEPA.157 MEPA.158 MEPA.159

The DEIR should include a commitment to provide a GHG self-certification to the MEPA Office upon construction of the building signed by an appropriate professional indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project. If equivalent measures are adopted, the project is encouraged to commit to achieving the same level of GHG emissions (i.e., "carbon footprint") identified in the Preferred Alternative expressed as a volumetric measure (tpy) in addition to a percentage GHG reduction from Base Case. The commitment to provide this self-certification in the manner outlined above should be incorporated into the draft Section 61 Findings included in the DEIR. MEPA.160 MEPA.161

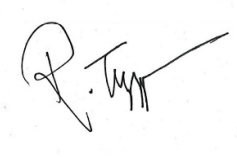
Responses to Comments

The DEIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the DEIR that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response. This directive is not intended, and shall not be construed, to enlarge the scope of the DEIR beyond what has MEPA.162 MEPA.163

been expressly identified in this certificate.

Circulation

In accordance with 301 CMR 11.16, the Proponent should circulate the DEIR to each Person or Agency who commented on the ENF each Agency from which the project will seek Permits, Land Transfers or Financial Assistance, and to any other Agency or Person identified in the Scope. Pursuant to 301 CMR 11.16(5), the Proponent may circulate copies of the DEIR to commenters in a digital format (e.g., CD-ROM, USB drive) or post to an online website. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. A copy of the DEIR should be made available for review in the South Boston branch of the Boston Public Library.



June 28, 2024
Date

Rebecca L. Tepper

Comments received:

04/24/2024 Maura Martinelli
05/03/2024 Maura Martinelli
05/22/2024 Joe Beauchaine
05/22/2024 Massachusetts Water Resources Authority (MWRA)
05/24/2024 Boston Water and Sewer Commission (BWSC)
05/29/2024 David Wooddell
05/29/2024 Lawrence A. Chan
06/03/2024 Darrin Brak
06/03/3034 Ellie Kasper
06/04/2024 Jen Salman
06/04/2024 Sharon Butler-O'Dwyer
06/05/2024 Levi Reilly
06/06/2024 Brenna Beck
06/06/2024 Kathleen T. Arigal
06/06/2024 Kirsten McEleney
06/06/2024 Michael DAngelo
06/06/2024 Michael Iovanna
06/06/2024 Miri Goldfield
06/06/2024 Spencer Beebe
06/07/2024 Conservation Law Foundation (CLF)
06/07/2024 Massachusetts Department of Environmental Protection (MassDEP)/Waterways Regulation Program (WRP)
06/07/2024 Department of Energy Resources (DOER)

06/07/2024 Kim Karasewicz
06/07/2024 The Boston Harbor Now Association (TBHA)
06/07/2024 Tom Ready
06/10/2024 Massachusetts Port Authority (Massport)
06/14/2024 Massachusetts Office of Coastal Zone Management (CZM)
06/18/2024 Julie Isch
06/20/2024 Ann Sanders
06/20/2024 Jason S. Weissman
06/20/2024 Philip S. Balboni
06/20/2024 Trustees of the Edwin Sullivan Condo Trust
06/21/2024 Josh Levin
06/21/2024 Matt Martinelli
06/23/2024 Kate Gutierrez

RLT/AJS/ajs

SECRETARY'S CERTIFICATE

MEPA.01 **For Phase 1, the DEIR should include updated site plans for existing and post-development conditions at a legible scale. Plans should clearly identify buildings, interior and exterior public areas, impervious areas, transportation improvements, pedestrian and bicycle accommodations, stormwater and utility infrastructure, easements, and existing and proposed site grades.**

Site plans are included in Chapter 1. Utility infrastructure plans are included in Chapter 8.

MEPA.02 **The DEIR should provide detailed plans, sections, and elevations to accurately depict existing and proposed conditions, including proposed above-and below-ground structures, resiliency and other mitigation measures.**

Plans and other graphics describing the Master Plan Project are included throughout the DEIR, including in Chapters 1, 5, 6, 8, and 10. More detailed materials associated with the Phase 1 Project are included in Appendix A.

MEPA.03 **For both the Master Plan Project and Phase 1, the DEIR should identify, describe, and assess the environmental impacts of any changes in the project that have occurred between the preparation of the ENF and DEIR. It should provide updated calculations of impacts in a tabular format.**

Environmental impacts are discussed throughout the DEIR. Table 2-1 includes information about anticipated environmental impacts.

MEPA.04 **The DEIR should identify and describe state, federal and local permitting and review requirements associated with Phase 1 development, provide an update on the status of each of these pending actions, analyze applicable statutory and regulatory standards and requirements, and provide a discussion of the project's consistency with those standards.**

Permit and review requirements are discussed in Section 1.3.

MEPA.05 **The DEIR should describe the comments and input received from the CAC for both Phase 1 and the Master Plan Project, both as part of the BPDA PNF and MEPA ENF reviews. The DEIR should discuss what design changes were made in response to this feedback, and what comments remain under consideration.**

Comments and input received from the CAC are discussed in Section 1.6.1. Changes made to the Master Plan Project and Phase 1 Project based on input from the CAC, City and other stakeholders are discussed in Section 1.2.5.

MEPA.06 **The DEIR should review a Reduced Build Alternative that reflects a lower level of impact and increased open space compared to the Preferred Alternative.**

Section 2.3.1 includes a discussion of a Reduced Build Alternative.

MEPA.07 **The DEIR should consider an alternative that includes a higher percentage of residential uses, discuss the potential environmental impacts associated with such an alternative, and justify why the particular mix of uses proposed in the Preferred Alternative is the best alternative given the unique location of the site in between marine industrial uses to the north and residential neighborhoods to the south.**

As discussed in Section 1.2, the Master Plan Project now proposes a higher percentage of residential uses than what was previously proposed. The environmental impacts of the Master Plan Project, as currently proposed, are summarized in Table 2-1 and discussed throughout this DEIR.

MEPA.08 **The DEIR should describe the potential heights of all buildings in the Master Plan Project based on the gross square footage of development described above and evaluate alternatives for lower building heights along West First Street and higher building heights in the central and northern parts of the site.**

Section 2.3.2 discusses an alternative with reduced building heights along West First Street.

MEPA.09 **The DEIR should review how the proposed street grid may affect broader transportation network in the South Boston area, including truck traffic, the neighboring residential street network, bus mobility, and pedestrian and bicycle routes.**

The impacts of the proposed street grid are discussed in Sections 7.5.1 and 7.6.1, as well as within the analyses conducted in Sections 7.7 and 7.8. Sections 7.5.1.4 and 7.6.1.5 discuss the proposed street grid configurations.

MEPA.10 **The DEIR should discuss the state and local transportation and land use planning processes, provide a justification for selection of the preferred street grid, and present a phasing plan that shows conceptually how the preferred street grid will be built out over time and whether and how future opportunities will be provided to revise or update design in connection with future phases of development.**

Sections 7.4.1, 7.4.2, and 7.4.4 discuss state and local transportation and land use planning in relation to the proposed street grid. Sections 7.5.1.5, 7.5.3.3, 7.6.1.6, and 7.6.1.7 discuss the adaptability of the proposed street grid to potential future changes.

MEPA.11 **The DEIR should discuss how the street grid alternatives would affect the results of the traffic study conducted for the Master Plan Project.**

Sections 7.5.1.5, 7.5.3.3, and 7.6.1.7 discuss street grid alternatives and how they would affect the traffic study.

MEPA.12 **The DEIR should assess the feasibility of large-scale resiliency measures along Reserved Channel, for instance, by converting Pappas Way to open space or relocating Pappas Way inland to allow for better flood protection along the water's edge.**

Resiliency measures along the Reserved Channel are discussed in Section 10.2.

Relocating Pappas Way further inland or converting Pappas Way into open space was reviewed. Neither change would impact flood extents or depth of flooding, and would have limited impacts on velocities. These limited changes to velocity would only occur in the localized area at Pappas Way and would not influence the velocities modeled in neighboring or adjacent areas.

MEPA.13 **The DEIR should present future climate scenarios that demonstrate the flooding risks on the site, if broader-scale resiliency measures are not implemented.**

Section 10.4 and Appendix F discuss potential flooding risks on the Master Plan Site and in the surrounding area for the predicted 2050 500-year flood event and 2070 500-year flood event.

MEPA.14 **The DEIR should discuss whether other regional resiliency efforts may extend to the Master Plan Project site at a future time, and if so, how the project will be designed to align with such regional efforts.**

Regional resiliency efforts and their relation to the Master Plan Project are discussed in Section 10.2.3.

MEPA.15 **The DEIR should review an alternative Phase 1 use program with a majority of the building square footage devoted to residential uses and a lesser amount of commercial R&D development. The transportation, water use, wastewater generation, and urban design impacts of this alternative should be described quantitatively to the extent possible. As described below, it should review an alternative location of the proposed Phase 1 open space along Pappas Way and assess the climate resiliency and public accessibility benefits of the alternative location.**

As discussed in Section 1.2, the Phase 1 Project now proposes a higher percentage of residential uses than what was previously proposed. The environmental impacts of the Phase 1 Project, as currently proposed, are discussed throughout this DEIR. In addition, Sections 1.2.4.1 and 1.2.5 discuss changes to the proposed open spaces.

MEPA.16 **The Proponent should continue to implement the PIP and the DEIR should review all public engagement efforts conducted by the Proponent since the filing of the ENF.**

Section 3.2 discusses the PIP and public engagement efforts.

MEPA.17 **The PIP included in the DEIR should identify the Proponent's public engagement strategy for communicating with the public about the Master Plan Project.**

Section 3.2 discusses the PIP. The PIP has been included as Appendix B.

MEPA.18 **To facilitate better communication with the CAC and meet the spirit of the SRP, the Proponent is directed to intensify its interaction with the CAC with more frequent and regular updates, one or more meetings planned and scheduled with the CAC's input prior to the filing of the DEIR, and an ongoing discussion on how information should be provided to the CAC and its feedback acknowledged and responded to by the Proponent. A copy of the PIP included in the ENF should be circulated directly to the CAC for further input on how to improve coordination with the CAC during future phases of MEPA review.**

Section 1.6.1 discusses interaction with the CAC. The PIP was included in the ENF and was circulated directly to the CAC in July of 2024 and again in October 2025; no comments or proposed changes have been received.

MEPA.19 **The DEIR should describe any changes made to the PIP in response to CAC input, and a revised PIP should be included with the DEIR.**

Appendix B includes the PIP. As noted in response to MEPA.18, the PIP was sent to the CAC, and no comments or proposed changes have been received.

MEPA.20 **The DEIR should contain a full description of measures the Proponent implemented to date to promote public involvement by EJ populations since the ENF filing.**

Sections 1.6 and 3.2 discuss the PIP and public engagement efforts.

MEPA.21 **Given the high number of EJ populations within a 5-mile radius, the Proponent should focus outreach efforts on a 1-mile radius, but supplement outreach to areas within a 5-mile radius where truck routes will likely extend based on best available information related to the Master Plan Project.**

Section 3.2 includes discussion of EJ outreach. In a conversation with the MEPA office on September 20, 2024, it was confirmed that the Master Plan Project's DGA is one mile, and analysis for a five-mile DGA is not required.

MEPA.22 **While the Proponent indicates that Phase 1 alone is unlikely to generate over 150 adt of truck traffic, detailed information on truck routes should be provided for Phase 1.**

Section 7.5.3.4 discusses truck routes in the future condition. As shown in Tables 7-16 and 7-21, the Master Plan Project will generate only a small increase in daily truck trips (18 net new trips), and the Phase 1 Project is projected to result in a decrease in daily truck trips when compared to the existing conditions.

MEPA.23 **The DEIR should describe the method by which affected EJ populations within a 5-mile radius were identified, and outreach activities in those neighborhoods should include, at minimum, physical distribution of a project fact sheet to easily accessible locations and targeted dissemination of any notices of public meetings. Any fact sheets and notices should be translated into the applicable languages in those neighborhoods spoken by 5% or more of Limited English Proficiency (LEP) residents as identified by the EEA EJ Mapper.**

Section 3.2 includes discussion of EJ outreach. As noted above, the MEPA office confirmed that the DGA is one mile and EJ analyses were completed for the DGA.

MEPA.24 **The DEIR should discuss whether and how the public involvement activities conducted for the project are consistent with best practices listed in the MEPA EJ Public Involvement Protocol.**

Section 3.2 discusses the PIP and public engagement efforts, including those required or suggested by the PIP and MEPA EJ Public Involvement Protocol.

MEPA.25 **The DEIR, or a summary thereof, should be distributed to the CAC, all ENF commenters, all CBOs and tribes/indigenous organizations included in an updated "EJ Distribution List," and any independently identified grassroots organizations.**

The DEIR has been circulated to those listed in this requirement.

MEPA.26 **An updated reference list should be obtained from the MEPA Office to ensure contacts are up to date, and a project-specific EJ Distribution List should be developed and returned to the MEPA Office.**

An updated reference list was obtained from the MEPA Office and the EJ Distribution List was developed and sent to the MEPA Office.

MEPA.27 **As outlined in the PIP (Attachment 7 of the ENF), the Proponent should hold at least one CAC meeting prior to filing the DEIR and ensure that the CAC is consulted with ample lead time to schedule this meeting.**

Scheduled in consultation with the CAC, a CAC/Public Meeting was held on October 8, 2025 prior to submission of the DEIR. An additional meeting was held on April 29, 2026.

MEPA.28 **The proponent shall additionally hold at least one public meeting prior to filing the DEIR to present project updates and a preview of key analysis to be presented in the DEIR. The required public meeting should seek to involve EJ communities within 1 mile of the site, as well as additional affected communities identified over a 5-mile radius.**

A CAC meeting that was open to the public was held on October 8, 2025. An additional meeting was held on April 29, 2026. As noted above, the MEPA office confirmed that the

DGA is one mile and therefore outreach to communities more than one mile was not required.

MEPA.29 **The Proponent shall consult with the CAC, the MEPA office, and the Office of Environmental Justice and Equity to plan this meeting ahead of the DEIR filing to maximize public involvement and promote equitable participation. Additional public meetings may be recommended by the CAC to address specific project concerns and/or specific affected communities.**

The Proponent consulted with the CAC, MEPA office and the Office of Environmental Justice and Equity to plan the meeting held before the submission of the DEIR.

MEPA.30 **The DEIR should include a separate section on "Environmental Justice," and should include a baseline assessment of any existing "unfair or inequitable Environmental Burden and related public health consequences" impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1. and the MEPA Interim Protocol for Analysis of EJ Impacts.**

Chapter 3 discusses Environmental Justice and includes a baseline assessment of existing "unfair or inequitable Environmental Burden and related public health consequences."

MEPA.31 **The DEIR should also include an analysis of the project's impacts to determine whether the project may result in disproportionate adverse effects, or increase the risks of climate change, on the identified EJ population, in accordance with 301 CMR 11.07(6)(n)2. and the MEPA Interim Protocol for Analysis of EJ Impacts.**

Section 3.5 discusses the Master Plan Project's impacts in regard to EJ populations.

MEPA.32 **The DEIR should report on vulnerable health EJ criteria as reported by the DPH Tool, and all municipal-level information should be provided for the 5-mile DGA. Vulnerable health EJ criteria available at the census tract level should be reported for a 1-mile radius around the site and for any census tracts that include additional EJ populations affected by truck routes over a 5-mile radius as indicated above.**

Section 3.3.1 discusses vulnerable health criteria. As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.33 **The Proponent should provide detailed information about anticipated truck routing for the Phase 1 project.**

Section 7.5.3.3 discusses truck routes for the Phase 1 Project. It should be noted that the Phase 1 Project is anticipated to result in fewer truck trips than the existing conditions.

MEPA.34 **The DEIR should analyze the additional mapping layers available in the DPH tool identifying sources of pollution. These data should be reported for both the 1-mile and**

5-mile DGA, and aggregated numbers may be provided for each of these geographic areas without breaking them down by census tract or census block group.

Section 3.3.2 analyzes the data layers in the DPH tool. As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.35 **In addition, the DEIR should identify any air quality related indicators in EPA EJ Screen that are elevated at or above the 80th percentile of statewide average and provide these data for a 1-mile radius around the site, as well as for any EJ populations that are anticipated to be affected by diesel truck traffic over a 5-mile radius (including travel along state and interstate highways).**

EJScreen indicators are discussed in Section 3.4.2. As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.36 **Given the level of traffic generation anticipated for the project, the DEIR should present an air quality assessment consistent with the MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991) for the study area used for the traffic study performed for the project. Data and findings should be provided separately for the Master Plan Project and Phase 1. Data on CO, VOCs, NOx, PM2.5, PM10, and DPM should be provided, in addition to greenhouse gas emissions as indicated in the Climate Change section below.**

Air quality is discussed in Section 3.4. GHG emissions from vehicles are discussed in Section 11.3.

MEPA.37 **The DEIR should provide a comparison of air pollutants from Existing (current) conditions to future No Build, future Build, and future Build with Mitigation conditions.**

Air quality is discussed in Section 3.4.

MEPA.38 **The DEIR should confirm that any impacted intersections within the traffic study area (where LOS was shown to degrade from No Build to Build conditions) and adjacent to EJ populations will be adequately mitigated.**

Section 7.9 discusses proposed mitigation at impacted intersections. The overall LOS at all intersections do not change from the No-Build to the Build condition.

MEPA.39 **The DEIR should analyze routes of travel for new vehicle trips, and assess the number of diesel-generated truck trips and routes of travel that would result from the project including during the construction period.**

Section 7.5.2.3 discusses routes of travel for vehicles and Sections 7.5.3.3 and 7.5.3.4 discuss routes of travel for vehicles and trucks, respectively. Phase 1 will result in a reduction in daily truck trips compared to the existing condition (64 existing, 56

proposed), and the Master Plan Project will only result in a small increase in daily truck trips (226 existing, 244 proposed). None of the intersections included in the traffic study intersect EJ block groups. Trucks are expected to travel directly to the highway.

The construction truck routes and number of construction trucks will not be known until buildings are closer to construction. It is anticipated that trucks will use existing truck routes, including South Boston Bypass, to access the highway network.

MEPA.40 **The DEIR should discuss whether diesel truck traffic is anticipated to extend near EJ populations within the 5-mile DGA, and provide a narrative description of whether air quality will be impacted at those locations based on a comparison of existing traffic volumes and the increase to be added by the project. To the extent truck routing is unknown for the full build Master Plan Project, this information may be provided for Phase 1 only (for a 5-mile radius).**

As noted above, Phase 1 will result in an overall decrease in truck traffic and therefore impacts to air quality from trucks is not anticipated. As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.41 **The DEIR should identify potentially affected EJ populations over the entire 5-mile DGA for the Master Plan Project based on best available information.**

Section 3.5 describes the Project's impacts within the one-mile DGA. As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.42 **The DEIR should indicate whether any additional mitigation could be considered to reduce traffic and associated emissions at locations within and outside the traffic study area, and where project related traffic, including diesel traffic, may extend adjacent to EJ populations.**

Section 7.9 discusses proposed mitigation. Mitigation is not proposed outside of the study area given the limited definitive impacts from the Phase 1 Project and the net reduction in truck trips.

MEPA.43 **While the ENF indicates a net decrease in impervious surfaces added by the project, the potential for stormwater flooding and heat effects in the surrounding neighborhoods should be assessed. Analysis of the stormwater management system should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions.**

Stormwater management is discussed in Section 6.3. Heat island effects are discussed in Section 10.3. Given the Master Plan Project's distance from nearby EJ populations, flood risks to those populations are not anticipated to be impacted by the Master Plan Project.

MEPA.44 **The DEIR should contain a GHG emissions analysis consistent with the GHG Emissions section of the Scope.**

A GHG analysis is provided in Chapter 11 and is consistent with the approach discussed with DOER.

MEPA.45 **The DEIR should analyze any other relevant short-term and long-term environmental or public health impacts of the project, including construction period activities.**

Public health impacts are discussed in Chapter 4.

MEPA.46 **If any disproportionate adverse effects or increased risks of climate change are identified, the DEIR must include a discussion of proposed mitigation and include such measures in draft Section 61 findings.**

Disproportionate adverse effects or increased risks of climate change to EJ populations from the Master Plan Project are not anticipated. Proposed Section 61 Findings and mitigation measures are provided in Chapter 13.

MEPA.47 **The DEIR should include a separate section on "Public Health," and discuss any known or reasonably foreseeable public health consequences that may result from the environmental impacts of the project. Particular focus should be given to any impacts that may materially exacerbate "vulnerable health EJ criteria," in accordance with the MEPA Interim Protocol for Analysis of EJ Impacts.**

Chapter 4 discusses public health in relation to the Master Plan Project.

MEPA.48 **In addition, other publicly available data, including through the DPH EJ Tool, should be surveyed to assess the public health conditions in the immediate vicinity of the project site, in accordance with 301 CMR 11.07(6)(g)10.**

Section 3.3.2 provides information from the DPH EJ Tool used to identify public health conditions in the immediate vicinity of the Master Plan Project in accordance with 301 CMR 11.07(6)(g)10.

MEPA.49 **The DEIR should provide an analysis of any Phase 1 project impacts that could materially exacerbate such conditions and highlight potential impacts associated with future phases that will be evaluated in future PCNs.**

As discussed in Section 3.5, the Master Plan Project and Phase 1 Project are not anticipated to materially exacerbate such conditions identified in Section 3.3.2.

MEPA.50 **To the extent any required Permits for the project contain performance standards intended to protect public health, the DEIR should contain specific discussion of such standards and how the project intends to meet or exceed them.**

Section 4.2 includes a discussion of performance standards intended to protect human health related to required permits.

MEPA.51 **As a sewer use discharge may be required from MWRA, the DEIR should discuss the permit standards that will need to be followed to ensure that any wastewater discharges will meet public health standards.**

Section 4.2.4 discusses the Sewer Use Discharge Permit and the permit's standards.

MEPA.52 **Portions of the site have been contaminated by releases of hazardous waste and buildings to be demolished contain asbestos containing materials (ACM). The DEIR should address measures to protect public health during the construction and operation phases of the project.**

Sections 4.2.5 and 9.3 discuss the protection of public health during construction and operation of the Master Plan Project.

MEPA.53 **As requested by MassDEP, the DEIR should confirm that Pappas Way is a public way that was in existence as of January 1, 1984; if it is not, then a significantly larger area of the site may be subject to c. 91 licensing.**

Pappas Way is a public way that was in existence as of January 1, 1984, as discussed in Section 5.2.

MEPA.54 **If Pappas Way is a public way for the purpose of defining landlocked tidelands at the site, then the DEIR should confirm the areas of jurisdictional and landlocked tidelands based on a surveyed delineation of the portions of the site within 250 ft of the high water mark in Reserved Channel.**

For purposes of determining the extent of Landlocked Tidelands within the Master Plan Site consistent with 310 CMR 9.02, on January 1, 1984, Pappas Way appears to have entirely separated the filled tidelands landward of the roadway from the flowed tidelands of the Reserved Channel. Accordingly, only such filled tidelands which are presently located within 250 feet of the high water mark of the Reserved Channel are subject to the licensing requirements of the Waterways Regulations. Jurisdictional and Landlocked Tidelands based on a surveyed delineation of the portions of the Master Plan Site within 250 feet of the high water mark in Reserved Channel are shown on Figure 5-1.

MEPA.55 **The DEIR should delineate identify and map all areas of jurisdictional Commonwealth Tidelands and private tidelands.**

Figure 5-1 identifies the jurisdictional Commonwealth Tidelands and Private Tidelands.

MEPA.56 **The Proponent should consult MassDEP's comment letter for guidance on the methodology to be used for delineating the extent and type of tidelands at the site.**

MassDEP's comment letter was reviewed regarding guidance on the methodology used for delineating tidelands on the Master Plan Site.

MEPA.57 The ENF appears to indicate that Phase 1 will be licensed in accordance with the baseline c. 91 regulations; this should be confirmed in the DEIR.

As discussed in Chapter 5, the portion of Block C within jurisdictional area will be licensed in accordance with baseline Ch. 91 regulations.

MEPA.58 The DEIR should review the c. 91 performance standards applicable to both Phase 1 and the Master Plan Project based on the boundary of jurisdictional tidelands and the delineation of Commonwealth Tidelands and private tidelands, including setbacks, building heights, ground level uses, open space, and public access requirements.

Sections 5.3 and 5.4 includes a review of Ch. 91 performance standards applicable to the Master Plan Project and Phase 1 Project.

MEPA.59 The DEIR should include an analysis of how the Phase 1 project will comply with the applicable standards and provide a summary of the requirements that will apply to parcels to be developed in future phases.

Section 5.4 includes an analysis of the Phase 1 Project related to applicable Ch. 91 standards and requirements. Section 5.3 discusses requirements applicable to future phases.

MEPA.60 The DEIR should identify any areas for which a WDP will be prepared and describe the planning and licensing process WDPs as specified in the MOU. In particular, the DEIR should discuss the proposed permitting pathway for the proposed pile-supported hotel on Parcel K1, which, according to the Waterways Regulations at 310 CMR 9.32, is allowed only on previously authorized wharves, piers, pile fields or other pile-supported structures.

Section 5.5 discusses areas for which a WDP is anticipated to be prepared. Section 5.3 discusses the development of Block K.

MEPA.61 The DEIR should provide an updated PBD analysis for Phase 1 that provides additional details and, if necessary, identifies any changes to the project's public benefit commitments.

Section 5.6 includes an updated PBD for the Phase 1 Project.

MEPA.62 The DEIR should include a description of the proposed fill and grading on the site, including the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site, and describe how the grading will be done relative to surrounding areas.

Section 10.2.2 provides information regarding proposed fill and grading across the Master Plan Site.

MEPA.63 Representative cross-sections of the proposed buildings relative to proposed elevations and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR.

A discussion regarding flood elevations and compliance with construction requirements in coastal floodplains are discussed in Section 6.3.3. A representative cross section has been provided as Figure 10-4.

MEPA.64 The DEIR should review how the project will comply with applicable performance standards, including MassDEP's proposed standards for LSCSF.

Section 6.2 describes compliance with applicable performance standards.

MEPA.65 The DEIR should include a hydrodynamic modeling to assess the impacts of proposed fill and structures on floodplain functions under existing and future conditions.

Section 10.4 discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F.

MEPA.66 The DEIR should describe the proposed stormwater management system and provide an analysis to demonstrate how it will be designed to satisfy all standards of the Stormwater Management Standards (SMS) and comply with the Total Maximum Daily Load (TMDL) established for pathogens in Boston Harbor. It should include detailed plans at a readable scale of the proposed drainage system and provide calculations of water quality volume, infiltration volume, total suspended solids removal, and peak rates of runoff for predevelopment and post-development site.

Section 6.3 includes information regarding stormwater management. Since the design of specific blocks has not commenced, detailed calculations and plans are not yet available. However, the Master Plan Project will reduce the amount of impervious area and provide a new or improved storm drain system which will improve the quality of stormwater runoff. The Proponent and its consultants, including architect and LSP, will coordinate during the design of each block to ensure compliance with the Stormwater Management Standards and TMDL established for pathogens in Boston Harbor.

MEPA.67 The DEIR should include an evaluation of the use of low impact design (LID) strategies and green infrastructure wherever practicable. It should provide analysis of the capacity of the stormwater management system under future climate conditions.

LID measures and stormwater management, including the anticipated capacity under predicted future climate conditions, are discussed in Sections 6.3 and 10.2. Further, the

Design Guidelines included as Appendix A expand on strategies around green infrastructure.

MEPA.68 **The DEIR should provide an overview of the stormwater management system on the Master Plan Project site and discuss the interconnections of the stormwater management system between Phase 1 and subsequent phases. It should describe how the system will be designed and constructed to support both individual phases and with adequate capacity to accommodate future phases, whether stormwater discharges from both phases are anticipated to be accommodated through any common infrastructure (such as piping or subsurface infiltration systems), and whether the system will be constructed to accommodate the volume of water anticipated under both phases.**

Section 6.3 includes information regarding stormwater management.

MEPA.69 **If the system will be built to handle only Phase 1, the DEIR should discuss whether and how Phase 1 design will be consistent with any future upgrades that may be needed for future phases.**

Phase 1 (Blocks A, B and C) will include stormwater management systems to address the quantity and quality requirements for each block. Downstream conveyance systems will be sized appropriately to handle anticipated flows from future phases of development.

MEPA.70 **The DEIR should clarify which streets, or portions thereof, will be constructed in Phase 1, and should present a phasing plan that indicates how the street grid will be built out over time and what opportunities for future revisions will exist. It should describe the dimensions of, and provide plans and sections showing, vehicular traffic lanes, pedestrian and bicycle accommodations, and adjacent street trees, lighting, and other amenities.**

Discussion of the proposed streets is included in Section 1.2.4.1. The Phasing Plan (Figure 1-5) shows what roadways are currently contemplated to be constructed during which phase. The Design Guidelines in Appendix A include additional figures related to the streetscapes for Phase 1, which will also guide the design of the Master Plan Project.

MEPA.71 **The City of Boston has suggested that the southernmost proposed east-west roadway be reconfigured such that its intersection with E Street is aligned with the intersection of Cypher Street and E Street. The DEIR should include an evaluation of this alternative alignment with respect to traffic operations, transit service, pedestrian and bicycle connectivity, and truck access.**

Section 7.5.3.3 discusses the alignment of Cypher Street with Road 1.

MEPA.72 **Given Massport's investments in establishing a truck route using Cypher Street and E Street and the recognition of this truck route in the RLFMP Master Plan, the DEIR should**

review impacts to truck traffic associated with maritime and other industrial uses at the Conley Terminal and the RLFMP.

Sections 7.5.3.3 and 7.5.3.4 discuss impacts to truck routes in the surrounding area.

MEPA.73 **The proposed Master Plan Project street grid appears to provide a potential alternate vehicular route between Summer Street, the project site, and West First that would allow all or a portion of Pappas Way to be converted to open space designed to increase the resiliency of the site. The DEIR should include an evaluation of traffic operations under future conditions with most or all of the proposed buildout of the project completed and a) with all of Pappas Way unavailable for vehicular use and b) with the southern section of Pappas Way (south of Block C) unavailable for vehicular use.**

Section 7.6.1.7 provides an evaluation of traffic impacts related to alternative configurations of Pappas Way.

Converting portions or all of Pappas Way into open space was reviewed. This change would not impact flood extents or depth of flooding, and would have limited impacts on velocities. These limited changes to velocity would only occur in the localized area at Pappas Way and would not influence the velocities modeled in neighboring or adjacent areas.

MEPA.74 **As stated above, the DEIR should present an alternatives analysis related to climate resiliency that includes an alternative assuming the removal or relocation of Pappas Way; the DEIR should discuss the feasibility of these strategies and how the project aligns with state and local resiliency planning for the area.**

Sections 2.3.4 and 2.3.5 discuss alternative configurations of Pappas Way and resiliency planning.

Relocating Pappas Way further inland or converting Pappas Way into open space was reviewed. Neither change would impact flood extents or depth of flooding, and would have limited impacts on velocities. These limited changes to velocity would only occur in the localized area at Pappas Way and would not influence the velocities modeled in neighboring or adjacent areas.

MEPA.75 **The DEIR should fully document the trip generation estimates for each travel mode, including but not limited to autos, trucks, public transit, and walking/bicycling. It should assign vehicle and transit trips to the roadway network and transit system and verify how the trip distribution percentages were calculated.**

Travel modes and trip assignments are discussed in Section 7.5.2 for Phase 1 and Section 7.6.2 for the Master Plan. Section 7.8 provides the build condition transit analysis.

MEPA.76 **The DEIR should describe and quantify new truck trips added to roadways within the 5-mile DGA at locations that are adjacent to EJ populations. To the extent information is not yet available for the Master Plan Project, this analysis can be provided for Phase 1 only for a 5-mile radius.**

Section 7.5.2.2 discusses routes of travel for vehicles, and Sections 7.5.3.3 and 7.5.3.4 discuss routes of travel for vehicles and trucks, respectively. Phase 1 will result in a reduction in daily truck trips compared to the existing condition (64 existing, 56 proposed), and the Master Plan Project will only result in a small increase in daily truck trips (226 existing, 244 proposed). None of the intersections included in the traffic study intersect EJ block groups. Trucks are expected to travel directly to the highway.

As noted above, the MEPA office confirmed that the DGA is one mile and therefore analysis to five miles was not required.

MEPA.77 **The DEIR should include a traffic study prepared consistent with the EEA/MassDOT Transportation Impact Assessment (TIA) Guidelines issued in March 2014 and this Scope. The TIA should provide a comprehensive evaluation of the project's use of area roadways, public and private transit, pedestrian and bicycle facilities, and other transportation modes. It should describe existing conditions, include a plan of the transportation study area, and identify the proposed site access and egress.**

The TIA is included in Chapter 7.

MEPA.78 **The DEIR should provide an analysis of the transportation impacts over the full 20+ year planning horizon and potential mitigation measures, including anticipated roadway layout and connections; the filing should address consistency with other state and local planning efforts such as the South Boston Transportation Action Plan, South Boston Seaport Strategic Transit Plan, and transportation planning for the RLFMP.**

The TIA includes an evaluation of impacts over the planning horizon for the Master Plan Project. Section 7.4.4 discusses consistency with state and local planning efforts.

MEPA.79 **The Proponent should consult with the MEPA Office to define the scope and methodology to be used for this analysis.**

The Master Plan Project team met with MassDOT on December 1, 2025 to discuss the scope and methodology for the TIA. The results of that meeting were provided to the MEPA office.

MEPA.80 **For Phase 1, it should provide counts of existing traffic in the traffic study area and include projections for future traffic conditions under No Build 2031, Build 2031, and Build 2031 with Mitigation scenarios.**

Existing traffic counts are included in Section 7.3.4. Projected future traffic conditions are discussed in Sections 7.4.3 and 7.5.2. The future analysis year is 2033 to reflect a seven-year horizon from the TIA's submission.

MEPA.81 **The No Build 2031 and Build 2031 scenarios should incorporate a background growth rate in traffic volumes and growth due to trips generated by nearby planned development projects. Future conditions should incorporate transportation projects by MassDOT, MBTA, Massport and the City.**

The background growth rate used is discussed in Section 7.4.1. Sections 7.4.1 and 7.4.2 include area developments and infrastructure projects that have been included in the analysis.

MEPA.82 **The study area for the TIA should be consistent with that used for analyses prepared for the City for Phase 1, including the roadways and intersections listed below, in addition to on-site roadways and intersections with adjacent streets that will be present under future conditions.**

Section 7.3.1 discusses the study area. Section 7.4.2 discusses future street conditions. The study area was confirmed by the City of Boston and MassDOT.

MEPA.83 **The DEIR should identify any additional intersections that should be added for analysis of the Master Plan Project.**

Section 7.3.1 provides the study area intersections.

MEPA.84 **Any additional intersections where project- generated trips are anticipated to increase peak hour traffic volume by 5% or more, or by more than 100 vehicles per hour, should be included in the TIA.**

All intersections where peak hour traffic is anticipated to increase by 100 vehicles per hour or more are included in the TIA. These intersections were confirmed by MassDOT, the City of Boston and MEPA office prior to the TIA's submission.

MEPA.85 **The TIA should describe the project's anticipated transportation impacts and identify appropriate mitigation measures. The Proponent should indicate a clear commitment to implement proposed mitigation measures and describe the timing of their implementation, including whether measures are implemented based on phases of the project or occupancy levels.**

The TIA includes discussion of transportation impacts, including vehicular, transit, pedestrian, and bicycle. Proposed mitigation measures are discussed in Section 7.9 and Chapter 13.

MEPA.86 **The DEIR should provide a comprehensive and detailed description of existing and proposed pedestrian facilities in the study area, including sidewalks, crosswalks, bicycle facilities and bicycle parking spaces.**

Existing and proposed pedestrian and bicycle facilities are discussed in Sections 7.3.7, 7.3.8 and 7.4.2, respectively.

MEPA.87 **The TIA should identify areas that are structurally deficient or not meeting current codes for accessibility, including sidewalks, crosswalks, ramps, and pedestrian equipment and propose mitigation measures to address these conditions. It should review the regional pedestrian and bicycle network and describe potential measures to enhance connections between the site and regional routes, public transportation facilities and complementary land uses such as shopping centers, residential areas and EJ populations within the DGA.**

Sections 7.3.7 and 7.3.8 discuss existing bicycle and pedestrian facilities, respectively. Sections 7.9.2 and 7.9.3 discuss proposed mitigation measures for pedestrian and bicycle infrastructure, respectively.

MEPA.88 **The TIA should evaluate these routes based on the origin-destination of potential residents, employees and visitors.**

Section 7.5.2.2 uses origin-destination data to assign projected new trips to the study area roadway network.

MEPA.89 **The DEIR should include clear commitments to pedestrian and bicycle mitigation measures to support the anticipated high mode shares of these modes of travel.**

Proposed mitigation measures are discussed in Section 7.9 and Chapter 13.

MEPA.90 **The DEIR should include a review of public transportation options serving the site and identify proposed mode shares for these services. It should describe pedestrian and accessibility conditions between the site and bus stops or other transit facilities, and propose mitigation measures to improve conditions to enhance the use of public transportation by employees, residents and visitors of the site.**

Public transportation is discussed In Section 7.3.10. Mitigation measures improving connections from public transportation to the Phase 1 Site are discussed in Section 7.9.3.

MEPA.91 **For each intersection in the study area, the DEIR should provide capacity analyses for the weekday peak periods for Existing 2024, No Build 2031, Build 2031 and Build 2031 with Mitigation conditions.**

Capacity analyses are included in Appendix E. The future analysis year is 2033 to reflect a seven-year horizon from the TIA's submission.

MEPA.92 **For all analysis scenarios, the TIA should provide illustrations depicting the peak hour 50th (average) and 95th percentile queue lengths for each lane group/turning movement and a tabular summary of the results of the intersection operations analysis, including volume-to-capacity ratios (V/C), average delays and level-of-service (LOS). Color-coded illustrations depicting LOS for each lane group/turning movement should be provided for each scenario.**

Section 7.7.2 includes illustrations and tabular summaries related to intersection capacity for each scenario.

MEPA.93 **The DEIR should describe transportation impacts associated with the project. It should identify measures to mitigate these impacts and the phase or level of buildout when implementation of the mitigation will be needed to address the impacts. Any proposed roadway improvements, including bicycle/pedestrian facilities, that are recommended to mitigate traffic impacts should be consistent with Complete Streets design guidelines contained in the MassDOT Project Development and Design Guide.**

The TIA includes information related to transportation impacts. Proposed mitigation is discussed in Section 7.9.

MEPA.94 **The DEIR should include detailed plans that demonstrate the feasibility of constructing any proposed roadway improvements.**

Sections 7.5.1.4 and 7.6.1.5 discuss street configurations under the Phase 1 and Master Plan Project conditions, respectively, and their compliance with prevailing jurisdictional standards.

MEPA.95 **The Proponent should consult with MassDOT prior to filing the DEIR regarding any roadway improvements affecting state roads.**

The Master Plan Project team met with MassDOT on December 1, 2025 to discuss area roadway improvements. No mitigation is proposed at study area intersections involving the state highway network.

MEPA.96 **The DEIR should provide an analysis of the potential parking demand associated with the Master Plan Project and review potential locations for parking facilities and identify vehicular access points to those facilities.**

Parking for the Master Plan Project is discussed in Section 7.6.1.3.

MEPA.97 **For Phase 1, the DEIR should provide a detailed analysis of the proposed parking supply for Phase 1 and clarify whether it is also intended to serve future phases of the project. It should document how the parking supply was developed and compare the number of proposed spaces to the amount required based on the most recent edition of ITE's Parking Generation, local zoning requirements and comparable facilities.**

Parking in the Phase 1 condition is discussed in Section 7.5.1.2.

MEPA.98 **The DEIR should describe the number of parking spaces that will be occupied throughout the day, identify periods of peak use and evaluate opportunities for shared parking.**

Parking for the Phase 1 Project is discussed in Section 7.5.1.2.

MEPA.99 **The DEIR should review measures for minimizing the parking supply in Phase 1 and the Master Plan Project through the implementation of strategies to minimize parking demand, such as market-rate pricing for parking.**

Parking for the Phase 1 Project and Master Plan Project is discussed in Sections 7.5.1.2 and 7.6.1.3, respectively.

MEPA.100 **The DEIR should evaluate additional TDM measures, including measures for minimizing parking supply.**

TDM measures are discussed in Section 7.9.4.

MEPA.101 **It should include a Transportation Monitoring Program that will be implemented to evaluate the assumptions made in the traffic study and the adequacy of the transportation mitigation measures, including the TDM program.**

The proposed monitoring program is discussed in Section 7.9.5.

MEPA.102 **The DEIR should review the capacity of BWSC's system to provide water to Phase 1 and the Master Plan Project and describe existing and proposed water infrastructure needed to serve the site, including any on-site or off-site improvements that the Proponent will be required to construct.**

The BWSC water system is discussed in Section 8.1. As each building moves into design and development, the capacity of the water system will be reviewed, and if necessary, improvements will be identified.

MEPA.103 **The DEIR should describe water conservation measures to be implemented by the project, including reuse of rainwater and gray water, water conserving plumbing fixtures, and measures to eliminate or minimize water needed for irrigation.**

Water conservation measures are discussed in Section 8.1.3.

MEPA.104 **The DEIR should review the capacity of BWSC's wastewater and drainage systems to accept flows from the site from Phase 1 and the Master Plan Project and describe existing and proposed infrastructure needed to serve the site, including any on-site or off-site improvements that the Proponent will be required to construct.**

Section 8.2 describes the wastewater infrastructure. Section 6.3 describes stormwater infrastructure. As each building moves into design and development, the capacity of the wastewater and drainage systems will be reviewed, and if necessary, improvements will be identified.

MEPA.105 **The project will be required to mitigate its contribution of flow into the BWSC's sanitary system. MassDEP regulations at 314 CMR 12.04(2)(d) specify that communities with CSOs must require projects generating 15,000 gpd or more of new wastewater flow to remove four gallons of I/I for each gallon of wastewater.**

The BWSC has a NPDES Permit for its combined sewer overflows and is subject to these regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of I/I for each new gallon of wastewater flow. Section 8.2.3 discusses I/I mitigation.

MEPA.106 **The Proponent should consult with the City to identify appropriate I/I mitigation for this project.**

Section 8.2.3 discusses I/I mitigation.

MEPA.107 **The DEIR should include a commitment to I/I removal and identify any mitigation projects or monetary contribution by the Proponent.**

As discussed in Section 8.2.3, the Proponent is committed to I/I mitigation which may include monetary contributions or mitigation measures, the specifics of which will be determined as each building's systems are reviewed by BWSC.

MEPA.108 **The DEIR should specifically identify potential increased CSO discharges affecting surface water quality in EJ populations and address mitigation of these impacts.**

Section 3.5.2 discusses CSO discharges and how there is no anticipated impacts to nearby EJ populations.

MEPA.109 **The DEIR should indicate whether the project will require a discharge permit from the MWRA's Toxic Reduction and Control (TRAC) Department and should include a commitment to use oil/gas separators in the parking garage drainage systems.**

Section 8.2.4 discusses sewer discharge mitigation and permitting.

MEPA.110 **The DEIR should include a map showing the areas subject to these RTNs and provide a summary of the site investigations and remediation activities related to these releases. It should describe any restrictions included in the existing AUL and potential restrictions (AULs) on uses of the site that may be applicable based on future investigations and remediation of the site pursuant to the MCP.**

Chapter 9 discusses site conditions and includes a map showing areas subject to the RTNs.

MEPA.111 **The DEIR should document the proposed location of stormwater management systems, green infrastructure, open space, and roadways, and other infrastructure for the Master Plan Project (including Phase 1) in relations to areas of contaminated soils and groundwater. It should describe any on-site excavation, pumping, storage, treatment and disposal of contaminated soil and groundwater, and measures to minimize public exposure to contaminants.**

Figures 9-1 and 9-2 show the RTNs on-site and their relation to open spaces, buildings, roadways, and utility infrastructure. Section 9.3 discusses the handling of contaminated soil and groundwater.

MEPA.112 **The DEIR should discuss whether any additional AULs will be placed on the site. It should address measures to be implemented during the construction and operation phases of the project to protect public health and the environment.**

No additional AULs are currently anticipated. As site investigations occur for future phases, AULs may be necessary and will be identified in future submissions under MEPA. The AULs will identify measures to protect public health and the environment.

MEPA.113 **According to the ENF, asbestos is present in existing buildings on the site. The DEIR should identify the buildings with ACM and review measures for removal, handling, and disposal of ACM prior to demolition of any buildings. It should describe measures that will be taken during the construction period to prevent public exposure to ACM.**

Given the age of the existing buildings, asbestos may be present. Section 9.2 discusses asbestos within the existing Master Plan Site.

MEPA.114 **The DEIR should analyze the design of Phase 1 in the context of the design guidelines for the 2070 100-year storm event for precipitation and 500-year storm event for sea level rise/storm surge.**

Section 10.2 discusses the design of Phase 1 related to future climate conditions.

MEPA.115 **It should review the capacity and performance of the proposed Phase 1 stormwater management system for various design storm events for the post-development condition, as compared to the pre-development condition, including the 2-, 10-, and 25-year design storms and the precipitation depths recommended by the Tool.**

Section 6.3 discusses stormwater management. The stormwater management system has not yet been designed. However, the Proponent and its consultants will consider the anticipated storm events provided in the RMAT tool, and other resources that may be more current at the time of design, to determine the appropriate stormwater management design.

MEPA.116 **The DEIR should review landscaping, tree planting, Low Impact Design (LID) and green infrastructure measures to be incorporated into the project design.**

Section 10.3 discusses measures to increase stormwater retention through incorporation of LID and green infrastructure, landscaping, and tree planting.

MEPA.117 **The DEIR should evaluate alternative locations and designs of the proposed open space, such as closer to Reserved Channel, to maximize their effectiveness in increasing the resiliency of the site and surrounding areas to climate change, including sea level rise/storm surge and urban flooding.**

As discussed in Section 1.2.4, in the full-build condition, the southern section of Pappas Way between West First Street and Road 1 will be replaced by an open space.

MEPA.118 **The DEIR should evaluate an alternative design in which the site is elevated to 16.8 ft NAVD 88.**

Section 2.3.3 evaluates an alternative with the site elevated to 16.8 feet NAVD88.

MEPA.119 **The DEIR should provide the results of a coastal engineering analysis that assesses potential changes and impacts to the floodplain. The analysis should include hydrodynamic modeling to evaluate potential changes to flood extent, depth, and velocities under current and future storm conditions, and under existing and proposed buildout conditions. It should analyze potential impacts to neighboring properties caused by redirection of flood waters or channelization of flow.**

Section 10.4 discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F.

MEPA.120 **As recommended by CZM, the hydrodynamic analysis should be conducted for conditions using the most current FEMA flood mapping and for future conditions the most up-to-date projections for sea level rise for the life of the project.**

The analysis, included in Appendix F, analyzed the FEMA Present-Day 100-year return period, 2050 0.2% Annual Exceedance Probability ("AEP") or 500-year, and 2070 2% AEP events from the MC-FRM.

MEPA.121 **The analysis should evaluate potential impacts to adjacent off-site properties and to buildings and structures constructed in earlier phases of the project.**

As discussed in Section 10.4 and Appendix F, the analysis evaluated the Master Plan Site and surrounding area in the existing condition, and for each phase of development.

MEPA.122 **The analysis should also assess the degree of impact associated with Phase 1, and the need for any interim measures to mitigate impacts if adequate mitigation is dependent on implementation of the full buildout of the site.**

Phase 1 was evaluated and was determined to not impact flood extent or depth in the surrounding area, or significantly alter flow patterns or velocities.

MEPA.123 **Alternatives to the building and street designs and layout should be considered if necessary to avoid these impacts.**

Although alternatives to the building and street designs and layout are not anticipated to be necessary, as future phases are developed, the need for additional design measures will be reviewed based on updated flooding information will be evaluated.

MEPA.124 **The DEIR should include a description of the proposed fill and grading on the site, including the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site.**

Section 10.2.2 provides information regarding proposed fill and grading across the Master Plan Site.

MEPA.125 **Representative cross-sections of the proposed buildings relative to proposed elevations and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR.**

A discussion regarding flood elevations and compliance with construction requirements in coastal floodplains are discussed in Section 6.3.3. A representative cross sections are included as Figures 6-3 and 10-4.

MEPA.126 **To assess the potential benefits of increasing the amount of open space near or adjacent to Reserved Channel, the analysis should evaluate floodwater characteristics under future conditions under scenarios in which the Phase 1 open space is located adjacent to Pappas Way, and Pappas Way is partially or entirely converted to open space, as discussed in the Transportation section above.**

Converting portions or all of Pappas Way into open space was reviewed. This change would not impact flood extents or depth of flooding, and would have limited impacts on velocities. These limited changes to velocity would only occur in the localized area at Pappas Way and would not influence the velocities modeled in neighboring or adjacent areas.

MEPA.127 **The DEIR should supplement the alternatives analysis to present additional alternatives for larger-scale resiliency solutions on the site.**

The Master Plan Project proposes the elevation of the Master Plan Site, a significant undertaking considering the size of the property. Additional measures are discussed in Section 2.3.5. The Master Plan Project is being designed to tie into future regional resilience measures that others may complete in the future. As the design of the Master Plan Project advances, it is also anticipated that conversations regarding climate resilience will continue with Massport, the City, and surrounding landowners.

MEPA.128 **Given the long-term buildout of the project, the DEIR should describe how each phase will be designed and constructed at the proposed elevations in a manner that will connect to the existing grades in areas to be developed under future phases.**

Section 10.2.2 describes the phasing of fill and grading.

MEPA.129 **The DEIR should describe how flood pathways may change as portions of the site are elevated while others remain at existing elevation, and the hydrodynamic modeling should model interim conditions after construction of each phase.**

Section 10.4 discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions, including information related to flood pathways for the different phases and scenarios, are included in Appendix F.

MEPA.130 **The DEIR should review options for minimizing redirection of flows by abrupt grade changes created by elevating a portion of the site to be developed under a future phase while surrounding areas remain at existing elevations, such as accelerating the flood infrastructure timelines for future phases and expediting the closing of flood pathways.**

As discussed in Section 10.4 and detailed in Appendix F, the redirection of flows is not expected to have a significant impact on buildings or roadways during the scenarios evaluated with the exception of minor potential impacts during the 2070 500-year storm event on Summer Street Fargo Street, and slightly increased potential for road damage on Fargo Street, East First Street, E Street, West First Street and Summer Street. As the Master Plan Project is built out, thee impacts will be evaluated to determine if additional measures may be necessary.

MEPA.131 **The DEIR should describe how the Proponent can work with abutting property owners to encourage the implementation of complementary coastal flood resilience measures.**

Section 10.2.3 discusses regional floodproofing efforts.

MEPA.132 **This project is subject to review under the May 5, 2010 MEPA GHG Policy. The Policy requires Proponents to quantify carbon dioxide (CO2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO2 emissions of the project's energy use (stationary sources), transportation-related emissions (mobile sources), and land alteration.**

Section 11.2 and 11.3 detail the Phase 1 Project's quantified carbon dioxide emissions from mobile sources and includes a comparison of energy use and estimated costs associated with different domestic hot water heating configurations in residential buildings and retail/amenity spaces. The Proponent has provided commitments to energy efficiency measures which align with the best practices put forward by DOER in its letter on the ENF and did not fully quantify stationary source emissions through the MEPA GHG Policy's "Opt-Out" procedure. The Project's associated mitigation measures are provided in Chapter 13.

MEPA.133 **For Phase 1, the DEIR should include a GHG analysis for stationary sources prepared in accordance with the GHG Policy, guidance provided in the comment letter submitted by the Massachusetts Department of Energy Resources (DOER), which is incorporated in this Certificate in its entirety, and this Scope.**

Section 11.2 discusses the Phase 1 Project's GHG analysis for stationary sources, which has been prepared in accordance with the GHG policy and the DOER comment letter.

MEPA.134 **For Phase 1, the DEIR should include an analysis that calculates and compares GHG emissions associated with a Base Case and a Preferred Alternative that achieves greater reductions in GHG emissions.**

The Master Plan Project team discussed the proposed approach to energy conservation and emissions reduction with DOER in February 2026. Based on the Phase 1 Project's approach, and the inclusion of a comparative domestic hot water study for the residential buildings, DOER determined that no analyses are required.

MEPA.135 **As required by the SRP, future PCNs submitted for future phases of the Master Plan Project should include analyses of the stationary-source GHG emissions associated with proposed buildings.**

As required by the SRP, future PCNs will include information related to GHG emissions based on a scope agreed to with DOER.

MEPA.136 **The stationary source GHG analysis, which should be provided for Phase 1 in the DEIR, should clearly demonstrate consistency with the key objective of MEPA review, which is to document the means by which Damage to the Environment can be avoided, minimized and mitigated to the maximum extent feasible.**

The Phase 1 Project's commitment to measures that reduce environmental impact associated with energy use are provided in Chapter 11 and the associated mitigation measures have been provided in Chapter 13.

MEPA.137 **The DEIR should identify the model used to analyze GHG emissions, clearly state modeling assumptions, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction**

measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation.

The Master Plan Project team discussed the proposed approach to energy conservation and emissions reduction with DOER in February 2026. Based on the Phase 1 Project's approach, and the inclusion of an analysis of domestic hot water systems for residential buildings, DOER determined that no further analyses are required.

MEPA.138 **The DEIR should include the modeling printouts for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source. Other tables and graphs, such as the table of mitigation measures recommended by DOER, may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures as necessary.**

The Master Plan Project team discussed the proposed approach to energy conservation and emissions reduction with DOER in February 2026. Based on the Phase 1 Project's approach, DOER determined that no further analyses are required.

MEPA.139 **The DEIR should provide data and analysis in the format requested in DOER's letter.**

The Master Plan Project team discussed the proposed approach to energy conservation and emissions reduction with DOER in February 2026. Based on the Phase 1 Project's approach, DOER determined that no further analyses are required.

MEPA.140 **The DEIR should clarify the proposed uses within the warehouse building (office, manufacturing, etc.) and what portion of the building this space will occupy.**

The Project does not propose warehouse space.

MEPA.141 **Present a comprehensive evaluation of mitigation measures, including high-efficiency building envelope, electrification, installation of rooftop solar photovoltaic (PV) systems, and installation of electric vehicle (EV) charging stations.**

Chapter 11 provides the proposed mitigation measures.

MEPA.142 **For Phase 1, the GHG analysis should include an evaluation of potential GHG emissions associated with the project's mobile source emissions.**

Section 11.3 discusses Phase 1 mobile source GHG emissions.

MEPA.143 **The DEIR should follow the guidance provided in the GHG Policy for Indirect Emissions from Transportation to determine mobile emissions, and should provide data on Existing Conditions, Build Conditions, and Build Conditions with Mitigation consistent with the air quality assessment required under the Environmental Justice section.**

Section 11.3 is an analysis of Phase 1 Project traffic which discusses mobile source GHG emissions.

MEPA.144 The DEIR should describe truck loading and staging activities and estimate GHG emissions from idling.

The Phase 1 Project is estimated to result in approximately 13.9 tons of CO_2 emissions annually from truck idling. Truck loading and estimated GHG emissions are described in Section 11.3.4, and supporting documentation is provided in Appendix C.

MEPA.145 The Proponent should thoroughly explore means to reduce overall single occupancy vehicle trips and to minimize air emissions from diesel vehicle traffic.

Section 7.9 discusses proposed mitigation measures to encourage alternative modes of transportation and reduce single occupancy vehicle trips.

MEPA.146 The DEIR should also review measures to promote the use of low-emissions vehicles, including installing EV charging stations and providing designated parking spaces for these vehicles (a minimum of 25% of proposed spaces) with the balance of spaces being EV ready for future installation.

The Proponent will provide EV charging and EV-ready infrastructure at all proposed parking facilities. A minimum of 10% of parking spaces within a parking garage on Massport-owned parcels will be equipped with EV charging upon opening, with an additional 15% of spaces supplied with EV-ready infrastructure. For Fee Parcels, the Proponent will comply with the City of Boston's EV policy by providing the equivalent of 25% of the total parking supply with EV chargers and sufficient infrastructure capacity for future accommodation of the remaining parking supply. Based on currently anticipated parking count for Phase 1, approximately 142 spaces across the Phase 1 Project parking garages will have EV chargers.

MEPA.147 The Build with Mitigation model should incorporate TDM measures, and any roadway improvements implemented by the project, and document the associated reductions in GHG emissions.

The mobile sources analysis provided in Section 11.3 discusses the change in GHG emissions expected from the Phase 1 Project associated vehicles. A Build with Mitigation condition was not analyzed; as is standard for projects in Boston, TDM measures are incorporated into the Build condition.

MEPA.148 The DEIR should explain how TDM measures will be monitored and adjusted over time and provide a methodology for quantifying emission reductions impacts rather than an assumed percentage reduction.

The proposed monitoring program is discussed in Section 7.9.5.

MEPA.149 **The DEIR should include an air quality analysis in accordance with the MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991). Additional analysis of air quality at intersections adjacent to EJ populations should be conducted in accordance with the Environmental Justice Scope above.**

Section 3.4 includes an air quality analysis.

MEPA.150 **Given this transition to a cleaner truck fleet as of MY 2025, it is my expectation that mitigation commitments relative to mobile source emissions will address diesel vehicle traffic; early adoption of future mandates relative to its truck fleet is strongly encouraged.**

The trucks that will be servicing the Master Plan Project will be owned by other parties; the Proponent is not able to make commitments related to how those truck fleets are operated.

MEPA.151 **The DEIR should describe how construction activities will be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017).**

Sections 12.6 and 12.8 discuss construction related air quality and solid waste, respectively.

MEPA.152 **The DEIR should describe all construction-period impacts and mitigation relative to noise, air quality, water quality, and traffic, including construction vehicle trips through residential areas. It should confirm that the project will require its construction contractors to use Ultra Low Sulfur Diesel fuel, and discuss the use of after-engine emissions controls, such as oxidation catalysts or diesel particulate filters.**

Chapter 12 provides information regarding construction-period impacts and mitigation.

MEPA.153 **The DEIR should provide more information regarding the project's generation, handling, recycling, and disposal of construction and demolition debris (C&D) and identify measures to reduce solid waste generated by the project. I encourage the Proponent to commit to C&D recycling activities as a sustainable measure for the project. Any contaminated material encountered during construction must be managed in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.00) and with prior notification to MassDEP.**

Section 12.8 discusses construction waste management.

MEPA.154 **The project will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with its NPDES CGP to manage stormwater during the construction period.**

As noted in Section 12.11, a SWPPP will be prepared.

MEPA.155 **The DEIR should describe stormwater management measures that will be implemented during construction. It should describe potential construction period dewatering activities and associated permitting (i.e., NPDES) and identify mitigation measures.**

Section 12.11 discusses construction-period stormwater management and dewatering.

MEPA.156 **All construction-period mitigation measures should be listed in the draft Section 61 Findings.**

The proposed Section 61 Findings in Chapter 13 include construction-related mitigation.

MEPA.157 **The DEIR should include a separate chapter summarizing all proposed mitigation measures including construction-period measures. This chapter should also include a comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations.**

Chapter 13 includes proposed mitigation measures.

MEPA.158 **The filing should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, EJ, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project.**

Chapter 13 includes information related to the proposed mitigation measures.

MEPA.159 **The filing should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing to ensure that adequate measures are in place to mitigate impacts associated with each development phase.**

Chapter 13 includes information related to the proposed mitigation measures.

MEPA.160 **The DEIR should include a commitment to provide a GHG self-certification to the MEPA Office upon construction of the building signed by an appropriate professional indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project**

Chapter 13 includes information related to the proposed mitigation measures, including a GHG self-certification.

MEPA.161 **If equivalent measures are adopted, the project is encouraged to commit to achieving the same level of GHG emissions (i.e., "carbon footprint") identified in the Preferred Alternative expressed as a volumetric measure (tpy) in addition to a percentage GHG reduction from Base Case. The commitment to provide this self-certification in the manner outlined above should be incorporated into the draft Section 61 Findings included in the DEIR.**

Chapter 13 includes information related to the proposed mitigation measures, including GHG-related mitigation commitments.

MEPA.162 **The DEIR should contain a copy of this Certificate and a copy of each comment letter received.**

This chapter includes the Certificate and a copy of each comment letter received.

MEPA.163 **It should include a comprehensive response to comments on the DEIR that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response.**

This chapter provides a response to comments raised in comment letters.

MASSACHUSETTS WATER RESOURCES AUTHORITY
Deer Island
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May 22, 2024

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
MEPA Office, Alexander Strysky
Boston, MA 02114

Subject: EOEEA #16802 – Environmental Notification Form
Reserved Channel Master Plan Development
Boston, MA

Dear Secretary Tepper,

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Environmental Notification Form (ENF) submitted by Oxford Properties Group and Pappas Enterprises, Inc. (collectively, the "Proponent") for the Reserved Channel Master Plan Development (the "Project") in Boston, Massachusetts.

The Project is located in South Boston, north of West First Street, south of Summer Street, and west of the Reserved Channel (the "Master Plan Project Site"). The Project Site consists of approximately 38.23 acres of land, ground-leased by the Proponent from the Massachusetts Port Authority ("Massport"), with an additional approximately 3.43 acres owned in fee by the Proponent. The Master Plan Project Site will include approximately 4,768,500 square feet (sf) of commercial office and research laboratory uses, approximately 205,000 sf of hotel space planned with facilities of public accommodation anticipated to include a public marina, approximately 788,000 sf of residential uses, and approximately 227,500 sf of retail and/or amenities uses, including surface parking lots and staging areas.

MWRA's comments on this ENF relate to the need for Infiltration/Inflow (I/I) Removal and Toxic Reduction and Control (TRAC) discharge permitting.

Wastewater

The ENF reports that Phase I will generate a wastewater flow of approximately 171,911 gallons per day (gpd), which the Proponent reports is an increase of 166,459 gpd over the estimated existing wastewater generation of 5,452 gpd. The ENF also reports that the Master Plan Project at full-build will generate wastewater flow of approximately 620,581 gpd, which the Proponent reports is an increase of 597,110 gpd over the estimated existing wastewater generation of 23,408 gpd.

According to the Boston Water and Sewer Commission's (BWSC) storm drain and sewer maps, the Project Site is served by a separate, privately owned storm drain system. Flows from the Project Site are conveyed to BWSC's South Boston Interceptor North Branch ("SBI-NB"), which in turn conveys flows to BWSC's Boston Main Interceptor. The sanitary flows are eventually carried to MWRA's Columbus Park Headworks in South Boston, which directs flows to the Deer Island Treatment Plant. The SBI-NB serves both separate sewer areas, such as the Project area, and combined sewer areas of South Boston. Stormwater entering the sewer system from combined sewer areas can exceed the capacity of the SBI-NB, causing surcharging of the SBI-NB that can contribute to combined sewer overflows (CSO) to the Reserved Channel and the Fort Point Channel in large storms.

To ensure that the Project's wastewater flow does not increase system surcharging or overflows in large storms, the Proponent should work with BWSC to develop a plan for ensuring a 4:1 offset of the Project's wastewater flow as required by Massachusetts Department of Environmental Protection regulation; that is, by removing four gallons of stormwater and/or infiltration and inflow (I/I) from a hydraulically related sewer system(s) for every gallon of new wastewater flow. Increasing wastewater flow to the South Boston sewer systems without the state-required offset can compromise the sewer system and water quality benefits of MWRA's $912 million region-wide CSO control plan, including water quality improvement in the Reserved Channel and the Fort Point Channel. MWRA.01

TRAC Discharge Permitting

MWRA prohibits the discharge of groundwater and stormwater into the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the local municipality. The Project Site has access to storm drains and is not located in a combined sewer area. Therefore, the discharge of groundwater or stormwater to the sanitary sewer system associated with this Project is prohibited. MWRA.02

A Sewer Use Discharge Permit is required prior to discharging industrial process wastewater, laboratory wastewater, laundry effluent, or photo processing wastewater from office, high-tech, R&D, hotel, laboratory or commercial space associated with the Project into the MWRA sanitary sewer system. For assistance in obtaining this permit, a representative from the proposed laboratory/R&D/commercial space should contact Molly Rounds, Industrial Coordinator, in the TRAC Department at (617) 305-5638 or Molly.Rounds@mwra.com. MWRA.03

On behalf of the MWRA, thank you for the opportunity to provide comments on this Project. Please do not hesitate to contact Hillary Monahan of my staff at (857) 324-0554 or Hillary.Monahan@mwra.com with any questions or concerns.

Sincerely,

Colleen C. R.

Colleen Rizzi
Director
Environmental and Regulatory Affairs

cc: John Viola, MassDEP
Adam Horst, BWSC

MASSACHUSETTS WATER RESOURCES AUTHORITY

MWRA.01 **To ensure that the Project's wastewater flow does not increase system surcharging or overflows in large storms, the Proponent should work with BWSC to develop a plan for ensuring a 4:1 offset of the Project's wastewater flow as required by Massachusetts Department of Environmental Protection regulation; that is, by removing four gallons of stormwater and/or infiltration and inflow (I/I) from a hydraulically related sewer system(s) for every gallon of new wastewater flow.**

As discussed in Section 8.2.3 (page 8-7), the Proponent is committed to I/I mitigation which may include monetary contributions or mitigation measures, the specifics of which will be determined as each building's systems are reviewed by BWSC.

MWRA.02 **MWRA prohibits the discharge of groundwater and stormwater into the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the local municipality. The Project Site has access to storm drains and is not located in a combined sewer area. Therefore, the discharge of groundwater or stormwater to the sanitary sewer system associated with this Project is prohibited.**

Stormwater and groundwater will not be discharged to the sanitary sewer system.

MWRA.03 **A Sewer Use Discharge Permit is required prior to discharging industrial process wastewater, laboratory wastewater, laundry effluent, or photo processing wastewater from office, high-tech, R&D, hotel, laboratory or commercial space associated with the Project into the MWRA sanitary sewer system.**

At the appropriate time, and if required, a Sewer Use Discharge Permit will be obtained.

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

Memorandum

To: Alexander Strysky, MEPA Analyst

From: Frank Taormina, Regional Planner V, Waterways Regulation Program, MassDEP

Cc: Daniel Padien, Program Chief, Waterways Regulation Program, MassDEP

Re: **Comments from the Chapter 91 Waterways Regulation Program − EEA #16802; ENF − Reserved Channel Master Plan Development, (South) Boston, Suffolk County**

Date: June 7, 2024

The Department of Environmental Protection Waterways Regulation Program (the "Department") has reviewed the referenced Environmental Notification Form (ENF) EEA No. 16802, submitted by Oxford Properties Group and Pappas Enterprises, Inc. c/o Pappas Properties, Inc. (the "Proponent"). This ENF details plans to redevelop approximately 41.66 acres of land (Block A through L) located north of West First Street, south of Summer Street, and west of the Reserved Channel (referred to as the "Reserved Channel Master Plan Development") on Filled and Flowed Tidelands of the Reserved Channel in (South) Boston, Suffolk County (the "project site").

Chapter 91 Jurisdiction and Regulatory Analysis

As detailed in the ENF, the Proponent identifies the project site as being 41.66 acres, consisting of Blocks A through L, of which Block A and Block J are owned by the Proponent and all the other Blocks are owned by the Massachusetts Port Authority ("Massport"). Ownership of each Block was confirmed by the Proponent in a supplemental Figure provided to the Department on May 16, 2024 (see attached). The Department determines that the proposed project is nonwater-dependent pursuant to 310 CMR 9.12(2)(f)(1),(2),(3),(4),(6) (8) and 310 CMR 9.12(4), and all tidelands subject to licensing on the project site are Filled or Flowed Commonwealth Tidelands pursuant to 310 CMR 9.02, as further detailed below.

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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The majority of the proposed project would be located on Filled Tidelands of the Reserved Channel, with some proposed work in and over Flowed Tideland (on Parcel K), and entirely outside of the South Boston Designated Port Area. However, portions of the project site located more than 250 feet from the project shoreline [i.e. mean high water (MHW) mark], which are intervened by a public way, are considered Landlocked Tidelands, as defined in M.G.L. Chapter 91, Section 18 and 310 CMR 9.02, and is therefore not subject to licensing thereunder. Accordingly, only Filled and Flowed Tidelands on the project site located seaward of the confirmed Landlocked Tidelands Line (see below) are subject to M.G.L. Chapter 91 and its regulations at 310 CMR 9.00.

The Department asks that the Proponent confirm that Pappas Way properly meets the Landlocked Tidelands definition at 310 CMR 9.02, of an intervening public way in existence as of January 1, 1984. If the Proponent can demonstrate such, then they also need to confirm that the Landlocked Tidelands line on all Figures and Plans was not taken from the MassGIS Tidelands Jurisdiction Datalayer - Landlocked Tidelands Shapefile (which is not georeferenced), but instead properly surveyed and scaled to exactly measure 250-feet, landward from the MHW mark. DEP.01

The project site consists of approximately 38.23 acres of land which is owned by Massport and ground-leased to the Proponent, and the remaining approximately 3.43 acres is owned by the Proponent. The portions of the project site consisting of Filled and Flowed Tidelands subject to licensing which are owned by Massport are subject to a Memorandum of Understanding ("MOU") entered into, by, and between the Massport and the Department on March 15, 2001, as amended on June 15, 2022, and identified as a "Special Planning Area" therein, and therefore must adhere to said MOU and the applicable provisions at 310 CMR 9.00. Furthermore, the portion of the project site owned by Massport is defined as Commonwealth Tidelands per 310 CMR 9.02.

Whereas Block A and J, owned by the Proponent, are not subject to said MOU and are only required to meet the applicable provisions of 310 CMR 9.00. Until the Proponent confirms the Landlocked Tidelands Line as noted above, it appears that Block A is located on Landlocked Tidelands not subject to c.91 licensing, but Parcel K is located on jurisdictional tidelands subject to c.91 licensing. It appears that Parcel K is located more than 100 rods (1,650 feet) from the historic high water (HHW) mark, therefore the Department presumes it is Commonwealth Tidelands per 310 CMR 9.02. However, the Department cannot confirm this presumption at this time, as the Figures and Plans in the ENF showing the HHW mark are not properly scaled to determine such. If the presumption stands, then the entire project site subject to c.91 licensing consists of Commonwealth Tidelands (filled and flowed).

The Department asks that the Proponent confirm the exact distance of Parcel K from the HHW mark, so the Department can determine what type of tideland jurisdiction (Private and/or Commonwealth) applies to Parcel K. DEP.02

The ENF only briefly details the overall long term development project and what is proposed on each Block. But the Proponent explicitly requests a Certificate from the Secretary for a first phase development, which consists of the development of Blocks A, B, and C. Of which, only a portion of

Block C (owned by Massport) is located on Filled Tidelands subject to licensing pursuant to M.G.L Chapter 91 and compliance with 310 CMR 9.00 and the South Boston MOU. However, the ENF does not provide enough information to confirm if the proposed development on Block C meets the baseline Waterways Regulations at 310 CMR 9.00 or if they Proponent will seek relief from one or more regulations via the MOU by preparing and submitting a Waterfront Development Plan per Article 3 of said MOU, for Departmental review and approval. When preparing the DEIR, the Proponent must explain which scenario will apply for both the first phase development and the long term overall development project. DEP.03

At a minimum, the DEIR must demonstrate how the first phase Block C development (and the rest of the long term development project) properly complies with all the nonwater-dependent provisions at 310 CMR 9.51 through 9.53, including but not limited to the following**:** calculate and add the Water-Dependent Use Zone (WDUZ) in accordance with 310 CMR 9.51(3)(c) to all applicable figures and plans; provide building elevation plans with associated setback distances from mean high water to confirm building height requirements at 310 CMR 9.51(3)(e); calculate and demonstrate open space requirements at 310 CMR 9.51(3)(d) and 310 CMR 9.53(2(b)(1); provide floor plans with calculations to demonstrate Facility of Public Accommodation ("FPA") requirements at 310 CMR 9.51(3)(b) and 9.53(2)(c); demonstrate public access requirements at 310 CMR 9.52(1) and 9.53(2)(a), and how project will provide water-based public activity/facility in accordance with 310 CMR 9.53(2)(a). DEP.04

The Department looks forward to receipt of the DEIR addressing all Department comments above.

If you have any questions, please contact me at frank.taormina@mass.gov or at (617) 571-1516.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP.01 **The Department asks that the Proponent confirm that Pappas Way properly meets the Landlocked Tidelands definition at 310 CMR 9.02, of an intervening public way in existence as of January 1, 1984. If the Proponent can demonstrate such, then they also need to confirm that the Landlocked Tidelands line on all Figures and Plans was not taken from the MassGIS Tidelands Jurisdiction Datalayer - Landlocked Tidelands Shapefile (which is not georeferenced), but instead properly surveyed and scaled to exactly measure 250-feet, landward from the MHW mark.**

Section 5.2 (page 5-1) confirms that Pappas Way meets the Landlock Tidelands definition. Jurisdictional and Landlocked Tidelands based on a surveyed delineation of the portions of the Master Plan Site within 250 feet of the high water mark in Reserved Channel are shown on Figure 5-1 (page 5-2).

DEP.02 **The Department asks that the Proponent confirm the exact distance of Parcel K from the HHW mark, so the Department can determine what type of tideland jurisdiction (Private and/or Commonwealth) applies to Parcel K.**

Figure 5-1 (page 5-2) depicts the 100-rod line in relation to Block K.

DEP.03 **When preparing the DEIR, the Proponent must explain which scenario will apply for both the first phase development and the long term overall development project.**

At this time, the Proponent anticipates that the Phase 1 Project, which will include redevelopment of Block C within tidelands jurisdiction, will comply with the (baseline) regulatory provisions of Chapter 91, including building height, open space standards, and ground floor use requirements. Please see Section 5.4 (starting on page 5-4) for additional details regarding Block C regulatory compliance. With the possible exceptions of Block D and Block K, the Proponent anticipates that Phases 2 and 3 of the Master Plan Project within tidelands jurisdiction will be the subject of a Waterfront Development Plan.

DEP.04 **At a minimum, the DEIR must demonstrate how the first phase Block C development (and the rest of the long term development project) properly complies with all the nonwater-dependent provisions at 310 CMR 9.51 through 9.53, including but not limited to the following: calculate and add the Water-Dependent Use Zone (WDUZ) in accordance with 310 CMR 9.51(3)(c) to all applicable figures and plans; provide building elevation plans with associated setback distances from mean high water to confirm building height requirements at 310 CMR 9.51(3)(e); calculate and demonstrate open space requirements at 310 CMR 9.51(3)(d) and 310 CMR 9.53(2(b)(1); provide floor plans with calculations to demonstrate Facility of Public Accommodation ("FPA") requirements at 310 CMR 9.51(3)(b) and 9.53(2)(c); demonstrate public access requirements at 310 CMR 9.52(1) and 9.53(2)(a), and how project will provide water-based public activity/facility in accordance with 310 CMR 9.53(2)(a).**

The applicable information requested can be found in the following locations:

- Water Dependent Use Zone: The WDUZ is depicted on Figure 5-1 (page 5-2) and 5-2 (page 5-5). The width of the WDUZ for each existing parcel has been calculated in accordance with 310 CMR 9.51.(3)(c).

- Building Elevation: The anticipated building elevation and setback distances for Block C are depicted in Figure 5-3 (page 5-6). The Proponent acknowledges the regulatory standards for building height and to the extent that a Waterfront Development Plan may be developed for the Master Plan Project, building height will be evaluated in a cohesive and comprehensive manner as a component of the Waterfront Development Plan.

- Open Space Requirements: Block C open space is noted in Table 5-1 (page 5-4) of Section 5.4. Block C will exceed the open space requirements of the Waterways Regulations. The Proponent acknowledges the regulatory standards for open space. To the extent that a Waterfront Development Plan may be developed for the Master Plan Project, the specific locations and areas of open space is expected to be evaluated in a cohesive and comprehensive manner as a component of the Waterfront Development Plan.

- Facilities of Public Accommodation: No less than 75% of Building C1 interior ground floor square footage will be devoted to FPAs. Building-specific ground floor programming and other amenities will be defined during the Chapter 91 licensing process for the Phase 1 Project. At that time, the Proponent will provide sufficiently-detailed ground floor plans.

  The Proponent acknowledges the regulatory standards for ground floor uses, for both Commonwealth and Private Tidelands. To the extent that a Waterfront Development Plan may be developed for the Master Plan Project, the specific locations and areas of ground floor FPAs and other uses are expected to be evaluated in a cohesive and comprehensive manner as a component of the Waterfront Development Plan.

- Public Access and Water-Based Activities: The Master Plan Project will provide pedestrian walkways and open space that will be constructed to provide connections through Block C to the adjoining parcels. Additionally, the Proponent is evaluating the feasibility of shoreline facilities that promote water-based public activity. Such facilities may include “touch-and-go” facilities for water shuttles and/or publicly accessible dock facilities for small human-powered craft (e.g., kayaks), recognizing safety consideration associated with the industrial uses of the Reserved Channel to the east of the Summer Street Bridge. The Proponent anticipates that such facilities would be planned, coordinated, and permitted as a component of the Master Plan Project, if not a component of the Phase 1 Project and the licensing of structures and uses within Block C.

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COMMONWEALTH OF MASSACHUSETTS
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07 June 2024
Rebecca Tepper, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Reserved Channel Master Plan Development, Boston, MA, ENF #16802

cc: Jo Ann Bodemer, Director of Energy Efficiency, Department of Energy Resources
Elizabeth Mahony, Commissioner, Department of Energy Resources

Dear Secretary Tepper:

We've reviewed the Environmental Notification Form (ENF) for the proposed project. The project consists of 25 proposed buildings, which include a total of 4,768,500 SF for research laboratory, 205,000 SF hotel, 788,000 SF residential, and 227,500 SF retail.

Executive Summary

The proposed buildings can readily achieve a high level of emissions mitigation with efficient electrification of space and water heating and improved envelope. In summary:

- *Highly-ventilated* buildings:

  Hybrid electric air source heat pumps for 25% of the peak use (gas for the remainder), low air infiltration, and limited *glazed wall systems*. (This includes research laboratory space that is highly ventilated.)

- Residential buildings:

  Passivehouse and all-electric space and water heating. (This includes all R use buildings, including hotel.)

- Office space, normally ventilated buildings, and retail:

  Per appropriate stretch code pathway, adding lower air infiltration and efficient electric space and water heating. (This includes research space that is normally ventilated, office, retail, and other non-residential.)

Key Mitigation Strategies

Passivehouse

Passivehouse is a design and construction standard which focuses on reducing building thermal demand. Passivehouse is standardized and administered by Passivehouse Institute US (PHIUS) and Passivehouse Institute (PHI). Both standards are recognized by the Massachusetts Building Code and MassSave. Passivehouse has traditionally been used for residential buildings but can also be used for any building type.

There are about 15,000 Passivehouse dwelling units either built, being designed, or planned in Massachusetts.

Because the space heating demand in Passivehouse buildings is so small, Passivehouse buildings are almost universally heated with electric air source heat pumps rather than fossil fuel. Passivehouse is now mandatory in the Specialized Code for projects over 12,000 SF, and rebates of $3,000 per dwelling unit may be received in Mass Save municipalities if no gas or fossil fuels are used in the building.

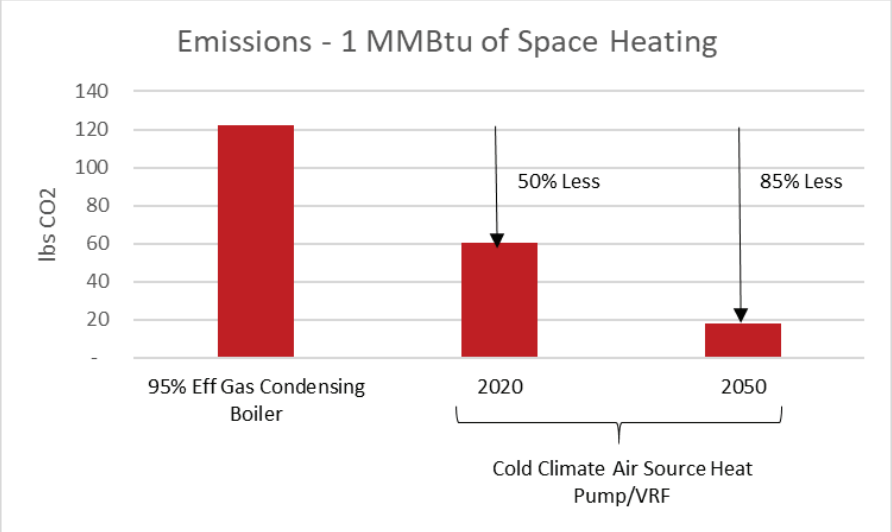
Efficient Electrification and Use of Fossil Fuels

The use of fossil fuels (including gas) can be nearly -- or possibly completely -- eliminated from this project using a strategy of efficient electrification. Fossil fuels can be readily eliminated from residential and normally ventilated non-residential buildings, while the use of gas in *highly-ventilated* buildings can be readily greatly reduced and potentially eliminated.

Efficient electrification entails the swapping of fossil fuels (natural gas, oil, and propane) with electric air source heat pumps. Electrification of space and water heating is a key mitigation strategy with significant short- and long-term implications on GHG emissions. Massachusetts electric grid emissions rates continue to decline with the implementation of clean energy policies that increase renewable electricity sources.

Currently, efficient electric heating has approximately **50% lower emissions** in Massachusetts than condensing natural gas heating. By 2050, efficient electric heating is expected

to have approximately **85% lower emissions** in Massachusetts than condensing natural gas heating. See illustration below.



Efficient electrification of space heating is routinely achieved in building construction using air source heat pumps for all building types (residential, hotel, retail, etc). We would expect this project to utilize this strategy, as well, for all normally ventilated buildings.

For *highly-ventilated* buildings, we recommend, at a minimum, a strategy of hybrid efficient electrification. This strategy uses air source heat pumps sized for 25% of the peak heating load. This approach should be combined with incorporation of heat recovery chillers to capture concurrent heating and cooling. In summary, for space heating, these buildings should use heat recovery chillers for primary heating, air source heat pumps for secondary heating, then gas for tertiary heating. Gas use should be less than 5-10 kBtu/sf-yr.

Note that this recommendation for hybrid heat pumps only applies to *highly ventilated buildings*. Buildings described/marketed/labeled as "research laboratory" may or may not actually qualify as *highly ventilated.* Per the code, to qualify as *highly ventilated*, ventilation distribution and equipment capable of delivering more than 0.5 cfm/sf at full occupancy must be a part of the building design as time of permit. (See details in Section C103.2 Parts 16 and 17 and Section C407.2.1.) Speculative "core and shell" buildings, and other designs, which do not include ventilation equipment capable of delivering high-ventilation at the time of core and shell construction should be treated as regular office buildings and should include air source heat pumps for 100% of the space heating, with no gas.

For service water heating, packaged air source heat pumps are readily available for non-residential applications such as retail/amenity and office buildings (including *highly-ventilated* research buildings). This approach is recommended for these uses.

For large multifamily applications, centrally-located air source heat pumps which serve multiple units are increasingly available for water heating. These heat pumps are not located in the dwelling units themselves but within the basements or mechanical rooms with hot water distribution to the individual units. We recommend using this approach for any residential (including hotel) buildings having more than 50 units in a building. For multifamily buildings with less than 50 units, consider use of centrally located air source heat pumps and/or packaged heat pumps in the units. If not practical, use electric resistance water heating.

Any use of fossil fuels, including gas, for space heating, service water heating, cooking, drying, etc. needs to be considered with MassSave incentives. In general, inclusion of fossil fuels on a building project will disqualify that building from MassSave incentives. For example:

- The hybrid electrification strategy for *highly-ventilated* buildings should be weighed against loss of MassSave incentives and should also consider Specialized Code *mixed fuel* requirements: electrification readiness and installed, on-site solar. Full electrification means keeping MassSave incentive and avoiding installed solar and electrification readiness requirements.

- For the multifamily buildings, any use of gas (space or water heating, cooking, drying, etc) will disqualify the project from $3,000/unit incentive.

Full electrification of all buildings also means elimination of gas from the project at large. Consider the cost savings associated with avoiding gas utility construction across the site.

Recommendations

Our recommendations for each building occupancy are below. If the next submission includes all the recommendations as project mitigation commitments, the DOER will not require any further evaluations or submissions.

Highly ventilated occupancy:

These recommendations apply only to buildings that will include ventilation equipment, distribution, and infrastructure capable of delivering more than 0.5 cfm/sf of ventilation at full occupancy. Fully designed ventilation equipment shall be specified and included in the drawings at the time of permit submission, per Section C103.2 parts 16 and 17. DOER.01

Potential buildings in this category: A3, B2, B3, C1, C2, D1, D3, E1, E3, G1, H2, H3, I1, I2, J1

- Relative Performance compliance pathway, section C407.2 of the Massachusetts Energy Code.
- C406.9 Reduced Air Infiltration used as one of the required C406 measures.
- *Glazed wall systems* account for no more than 50% of the total building envelope.
- Heat recovery chillers to capture concurrent heating and cooling (primary heating)
- Electric air source heat pump space heating, sized to 25% of peak heating load (secondary heating).

- Gas space heating (tertiary heating).
- Gas space heating use less than 10 kBtu/sf-yr
- Water heating provided by either air source heat pump, and/or solar thermal, and/or electric resistance.

Because this approach would be disqualified from MassSave incentives due to use of fossil fuels, consider evaluating above approach with an approach that captures the MassSave incentive, eliminates mandatory PV, and eliminates need electric readiness required space and infrastructure.

Normally ventilated occupancy:

These recommendations apply to buildings that will not include ventilation equipment, distribution, and infrastructure capable of delivering more than 0.5 cfm/sf of ventilation at full occupancy. This includes any building that does not have fully designed ventilation equipment included in the drawings at the time of permit submission, per Section C103.2 parts 16 and 17.

Potential buildings in this category: A3, B2, B3, C1, C2, D1, D3, E1, E3, G1, H2, H3, I1, I2, J1

- Thermal energy demand intensity (TEDI) pathway of the code, using "office" use.
- C406.9 Reduced Air Infiltration used as one of the required C406 measures.
- *Glazed wall systems* account for no more than 50% of the total building envelope.
- Electric air source heat pump space heating, sized to 100% of peak heating load.
- Water heating provided by either air source heat pump, and/or solar thermal, and/or electric resistance.
- No gas use

Residential occupancy:

Buildings A2, B1, D2, D4, E2, H1, J2

- Passivehouse
- Air source heat pump space heating
- Air source heat pump water heating (if more than 50 units per building)
    - Otherwise, either air source heat pump or electric resistance
- Electric cooking and drying
- No gas

Normally ventilated, non-residential (including Retail/Amenity):

Buildings A1, G2, J3

- Prescriptive stretch code, TEDI compliance, or relative performance compliance as required per the code with Option 8 C406 measure (reduced air infiltration)
- Air source heat pump space heating
- Air source heat pump water heating
- Electric cooking and drying

- No gas

Evaluations:

If the electrification and other strategies, as outlined above, are not followed, then additional evaluations are needed, as described below.

<u>*Highly ventilated* occupancy</u>:

DOER.02

Scenario 1 Equal to stretch code, 25% hybrid heat pump space heating, and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 2 Equal to stretch code, heat recovery chillers, 25% heat pump space heating, and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 3 Equal to stretch code, heat recovery chillers, 25% heat pump space heating, Option 8 (low air infiltration for C406), and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 4 Equal to stretch code, heat recovery chillers, 25% heat pump space heating, Option 8 (low air infiltration for C406), less than 50% glazed wall system, gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

<u>Normally ventilated occupancy:</u>

Scenario 1 Equal to stretch code with gas space heating and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 2 Equal to stretch code with heat pump space heating and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 3 Equal to stretch code with heat pump space heating, Option 8 (low air infiltration for C406), and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 4 Equal to stretch code with heat pump space heating, Option 8 (low air infiltration for C406), less than 50% glazed wall system, and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Residential Buildings (including Hotel):

Scenario 1 Passivehouse with gas space and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 2 Passivehouse with electric air source space heating and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

All other normally ventilated, non-residential (including Retail/Amenity Buildings)**:**

Scenario 1 Equal to stretch code with gas space heating and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 2 Equal to stretch code with heat pump space heating and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

Scenario 3 Equal to stretch code with heat pump space heating, Option 8 (low air infiltration for C406), and gas water heating
- Subscenario with electric resistance water heating
- Subscenario with air source heat pump water heating

In all building types and scenarios above, any mixed fuel buildings will require on site PV and electrification readiness space and infrastructure. Work with MassSave to estimate MassSave benefits for all electric scenarios (this will be the benefit lost if mixed fuel is chosen). Ensure that any cost comparisons consider MassSave and additional PV and electrification readiness for mixed fuel scenarios. DOER.03 DOER.04

Reporting

Each of the scenarios outlined above should be modeled, with the results included in a table as shown below. A separate table should be prepared separately for each representative building/space type, as follows: DOER.05

- Research Laboratory (high ventilation)
- Research Laboratory (normally ventilated)
- Residential
- Retail
- Hotel
- Amenity

Roof R value			
Wall U value			
% wall			
Window U value			
% window			
Area-weighted vertical above grade U value			
Air infiltration (cfm at 75 PA)			
Ventilation energy recovery (% effectiveness)			
Solar heat gain coefficient (SHGC)			
Heating TEDI (kBtu/sf-yr) (when used)			
Cooling TEDI (kBtu/sf-yr) (when used)			
HERs rating (when used)			
Peak annual space heating demand (MBtu/hr)			
Peak annual space cooling demand (MBtu/hr)			
Peak annual electric load (MW)			
Peak annual gas load (MBH)			
C406 measure options			

Fossil Fuel Use

Ready solutions exist to develop with no fossil fuels for all but the *highly-ventilated* buildings, avoiding the need to develop any gas infrastructure for those buildings. *Highly ventilated* buildings can be developed with minimized fossil fuel use (less than 10 kBtu/sf-yr) and we recommend examining total elimination for these buildings, as well.

If fossil fuels are proposed to be used on the project for any normally ventilated buildings, we recommend that the above findings be shared with the fossil fuel utility so that the utility can estimate total costs (from all sources) for development of the gas infrastructure under the various scenarios. Their estimates and findings should be included in the next submission, along with contact information for the DOER to be able to meet the gas utility representatives for further evaluations. DOER.06

Electric Capacity

Passivehouse, minimized *glazed wall system* use, low air infiltration, and other strategies above are demand reduction strategies, designed to dramatically reduce thermal loads and enable grid-friendly swap from fossil fuels, such as gas, to electric. Peak electric loads associated with peak winter heating and peak summer cooling will be much smaller than would have been traditionally estimated in even the recent past.

If the demand reduction strategies recommended herein are not implemented on this project, we recommend that the above scenarios be shared with the electric utility so that the utility can estimate total connected capacity needs and costs (from all sources) for development of the electric infrastructure under all the various scenarios. Their estimates and findings should be included in the next submission, along with contact information for the DOER to be able to meet the electric utility representatives for further evaluations. DOER.07

Solar PV

We recommend that, as a mitigation measure, all flat roofed, normally ventilated buildings have solar ready zones on 80% of the roof and all pitched roofs have solar ready zones on 40% of the roof. DOER.08

Sincerely,
Massachusetts Department of Energy Resources

Becca Edson
Architect

Paul F. Ormond, P.E.
Energy Efficiency Engineer

DEPARTMENT OF ENERGY RESOURCES

DOER.01 **The recommendations apply only to buildings that will include ventilation equipment, distribution, and infrastructure capable of delivering more than 0.5 cfm/sf of ventilation at full occupancy. Fully designed ventilation equipment shall be specified and included in the drawings at the time of permit submission, per Section C103.2 parts 16 and 17. [The full list of recommendations has been provided in the Certificate.]**

The Proponent has provided a set of commitments that align with DOER recommendations in Section 11.2 (starting on page 11-2). For highly ventilated buildings, fully designed ventilation equipment will be specified and included in permit drawings.

DOER.02 **If the electrification and other strategies, as outlined [in the certificate], are not followed, then additional evaluations are needed. [The full list of evaluations has been provided in the Certificate.]**

The Proponent has provided commitments to energy efficiency measures which align with the best practices put forward by DOER in its letter on the ENF and did not fully quantify stationary source emissions through the MEPA GHG Policy's "Opt-Out" procedure. As discussed with DOER, Section 11.2.2 (page 11-4) is an analysis of domestic hot water systems in residential buildings and retail/amenity spaces.

DOER.03 **In all building types and scenarios above, any mixed fuel buildings will require on site PV and electrification readiness space and infrastructure. Work with MassSave to estimate MassSave benefits for all electric scenarios (this will be the benefit lost if mixed fuel is chosen).**

The development team will comply with the on-site PV and electrification readiness requirements for typologies following the mixed fuel pathway. Additionally, the development team will engage with MassSave at the appropriate points in building development to identify and leverage possible benefits.

DOER.04 **Ensure that any cost comparisons consider MassSave and additional PV and electrification readiness for mixed fuel scenarios.**

The cost comparisons provided as part of the domestic hot water analysis in Section 11.2.2 (page 11-4) include consideration of available MassSave incentive. The Proponent's commitments eliminated the need for additional cost comparisons.

DOER.05 **Each of the scenarios outlined above should be modeled, with the results included in a table. A separate table should be prepared separately for each representative building/space type, as follows:**

- **Research Laboratory (high ventilation)**

- **Research Laboratory (normally ventilated)**
- **Residential**
- **Retail**
- **Hotel**
- **Amenity**

The Proponent has provided commitments to energy efficiency measures which align with the best practices put forward by DOER in its letter on the ENF and did not fully quantify stationary source emissions through the MEPA GHG Policy's "Opt-Out" procedure. As discussed with DOER, Section 11.2.2 (page 11-4) is an analysis of domestic hot water systems in residential buildings.

DOER.06 **If fossil fuels are proposed to be used on the project for any normally ventilated buildings, we recommend that the above findings be shared with the fossil fuel utility so that the utility can estimate total costs (from all sources) for development of the gas infrastructure under the various scenarios. Their estimates and findings should be included in the next submission, along with contact information for the DOER to be able to meet the gas utility representatives for further evaluations.**

The Master Plan Project proposes fossil fuel free designs for all normally ventilated buildings. The development team will coordinate and communicate with the utility as appropriate after design commences.

DOER.07 **If the demand reduction strategies recommended herein are not implemented on this project, we recommend that the above scenarios be shared with the electric utility so that the utility can estimate total connected capacity needs and costs (from all sources) for development of the electric infrastructure under all the various scenarios. Their estimates and findings should be included in the next submission, along with contact information for the DOER to be able to meet the electric utility representatives for further evaluations.**

The Proponent has provided commitments to the demand reduction strategies which align with the best practices put forward by DOER in its letter on the ENF. These commitments are presented in Section 11.2 (starting on page 11-2). The development team will coordinate and communicate with the utility as appropriate after design commences.

DOER.08 **We recommend that, as a mitigation measure, all flat roofed, normally ventilated buildings have solar ready zones on 80% of the roof and all pitched roofs have solar ready zones on 40% of the roof.**

The Master Plan Project will include solar ready zones on 40% of building roofs. The development team will explore the feasibility of establishing solar ready zones across 80% of flat roof areas.

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
100 Cambridge Street, Suite 900, Boston, MA 02114 • (617) 626-1200

MEMORANDUM

TO:	Rebecca L. Tepper, Secretary, EEA
ATTN:	Alex Strysky, MEPA Office
FROM:	Alison Brizius, CZM Director
DATE:	June 14, 2024
RE:	EEA# 16802; Reserved Channel Master Plan Development; Boston

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated May 8, 2024, and recommends the following comments.

Project Description

The project site contains approximately 41.66 acres and is located in South Boston north of West First Street, south of Summer Street, and west of the Reserved Channel. The Master Plan Site is proposed to be located between the South Boston Waterfront and the established South Boston residential neighborhood, in close proximity to the industrial and commercial facilities of the Raymond L. Flynn Marine Park (RLFMP), the Boston Convention & Exhibition Center, the historic Fort Point, and the Reserved Channel area. The Master Plan Site is proposed to consist of approximately 38.23 acres of land, ground-leased by the proponent from Massport, with an additional approximately 3.43 acres owned in fee by the proponent. An approximately 12.86-acre area within the Master Plan Site (the "Phase 1 Site") is proposed to be developed first and is made up of two separate areas, primarily consisting of impervious area including approximately 1,175 surface parking lots, staging areas, as well as industrial buildings. Phase 1 is proposed to include the construction of eight new buildings, totaling 1,739,000 square feet. The Phase 1 Site is proposed to contain three new city blocks. Blocks A and B are situated along West First Street, and Block C is located along Pappas Way and the Reserved Channel. This ENF describes the Master Plan Site, particularly Phase 1 of the proposed Master Plan Site.

Project Comments

Coastal Resource Areas and Resiliency

The proponents should prepare plans that include detailed resource area delineations for the project site, clarify the areas of permanent and temporary impacts to all resource areas, including Land Subject to Coastal Storm Flowage, and indicate these on the plans. Plans should identify the Federal Emergency Management Agency (FEMA) flood zones. CZM.01

The ENF states that the primary adaptation measure will be to elevate the Master Plan site, including new buildings and streets. Details regarding the volumes and types of fill proposed should be provided, as well as a plan for how the grading will be done relative to surrounding areas. CZM.02

According to the ENF, a coastal engineering analysis will be conducted to assess potential changes and impacts to the floodplain. Specifically, hydrodynamic modeling will be conducted to assess potential changes to flood extent, depth, and velocities under current and future storm conditions. This assessment will evaluate the coastal floodplain and associated processes with and without the Master Plan Project in place and focus on potential impacts to neighboring properties (e.g., redirection of flood waters, channelization of flow, etc.). Analysis under current sea levels should CZM.03

be conducted with the most current FEMA flood mapping. Future analysis should use the most up-to-date projections for sea level rise for the life of the buildings. In addition to impacts to adjacent properties and infrastructure, the analysis should ensure that the project is designed to avoid impacts to the proposed project on that site. Alternatives to the building and street designs and layout should be considered if necessary to avoid these impacts. In addition to this analysis, the Draft Environmental Impact Report (DEIR) should include a description of the proposed fill and grading on the site, including the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site. Representative cross-sections of the proposed buildings relative to proposed elevations and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR.

CZM.04
CZM.05
CZM.06

Although the site was previously developed, the goal of the project should be to improve the function of the current and future floodplain to the greatest extent possible. This should include incorporating green infrastructure and open park space in a way that doesn't redirect floodwaters. Minimizing impervious surfaces around the buildings will help with the infiltration of stormwater from precipitation as well as coastal floodwater.

CZM.07

Waterfront Development Plan

The proponent should clarify whether they intend to prepare a Waterfront Development Plan (WDP) per Article 3 of the South Boston Memorandum of Understanding for the project site to seek relief to develop the site, or if the proponents intend to comply with the regulations without the need for a WDP. The project is proposing to develop along the shoreline of the Reserved Channel. The proponent should calculate the Water-Dependent Use Zone on the site, as well as the height requirements and the Facilities of Public Accommodation proposed for this area.

CZM.08
CZM.09

Federal Consistency Review

The proposed project may be subject to CZM federal consistency review and, if so, must be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact Sean Duffey, Project Review Coordinator, at sean.duffey@mass.gov or visit the CZM website at https://www.mass.gov/federal-consistency-review-program.

CZM.10

AB/rh/jy

cc: Rebecca Haney, CZM
Frank Taormina, MassDEP

COASTAL ZONE MANAGEMENT

CZM.01 **The proponents should prepare plans that include detailed resource area delineations for the project site, clarify the areas of permanent and temporary impacts to all resource areas, including Land Subject to Coastal Storm Flowage, and indicate these on the plans. Plans should identify the Federal Emergency Management Agency (FEMA) flood zones.**

Figures 6-1 and 6-2 (pages 6-2 and 6-3) depict wetland resource areas (based on field survey data, as applicable) and the relationship of wetlands resource areas to the Master Plan Project's proposed development. At this stage of the Master Plan Project, calculations of resource area impacts have not been sufficiently developed. It is presumed, however, that permanent impacts to both Coastal Bank and LSCSF will result from the proposed resiliency improvements (i.e., elevating the Master Plan Site). The Proponent will continue to refine the design during future MEPA review processes and during permitting, at which time permanent and temporary resource impacts will be accurately quantified.

CZM.02 **The ENF states that the primary adaptation measure will be to elevate the Master Plan site, including new buildings and streets. Details regarding the volumes and types of fill proposed should be provided, as well as a plan for how the grading will be done relative to surrounding areas.**

Section 10.2.2 (starting on page 10-2) describes fill and grading.

CZM.03 **According to the ENF, a coastal engineering analysis will be conducted to assess potential changes and impacts to the floodplain. Specifically, hydrodynamic modeling will be conducted to assess potential changes to flood extent, depth, and velocities under current and future storm conditions. This assessment will evaluate the coastal floodplain and associated processes with and without the Master Plan Project in place and focus on potential impacts to neighboring properties (e.g., redirection of flood waters, channelization of flow, etc.). Analysis under current sea levels should be conducted with the most current FEMA flood mapping. Future analysis should use the most up-to-date projections for sea level rise for the life of the buildings. In addition to impacts to adjacent properties and infrastructure, the analysis should ensure that the project is designed to avoid impacts to the proposed project on that site.**

Section 10.4 (starting on page 10-17) discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F.

CZM.04 **Alternatives to the building and street designs and layout should be considered if necessary to avoid these impacts.**

Although alternatives to the building and street designs and layout are not anticipated to be necessary, as future phases are developed, the need for additional design measures will be reviewed based on updated flooding information will be evaluated.

CZM.05 **In addition to this analysis, the Draft Environmental Impact Report (DEIR) should include a description of the proposed fill and grading on the site, including the volume of fill proposed to be used, with grade and fill plans including representative cross-sections through the site.**

Section 10.2.2 (starting on page 10-2) describes fill and grading.

CZM.06 **Representative cross-sections of the proposed buildings relative to proposed elevations and FEMA flood elevations and how the building components of the project meet the Massachusetts Building Code for construction in coastal floodplains should be included in the DEIR.**

Section 6.3.3.2 (page 6-6) discusses how the Master Plan Project will comply with the building code. Specific details of compliance will be determined when buildings commence design. Figure 10-4 (page 10-6) provides a representative cross section. Figure 6-3 (page 6-4) provides a cross section showing the 100-year flood elevation.

CZM.07 **Although the site was previously developed, the goal of the project should be to improve the function of the current and future floodplain to the greatest extent possible. This should include incorporating green infrastructure and open park space in a way that doesn't redirect floodwaters. Minimizing impervious surfaces around the buildings will help with the infiltration of stormwater from precipitation as well as coastal floodwater.**

Sections 10.2 (starting on page 10-1) and 6.3 (starting on page 6-6) address the use of green infrastructure and open park space to manage stormwater and mitigate coastal flooding. Chapter 6 further confirms that the redevelopment will significantly reduce impervious area compared to existing conditions and implement a comprehensive stormwater management and tree planting program.

CZM.08 **The proponent should clarify whether they intend to prepare a Waterfront Development Plan (WDP) per Article 3 of the South Boston Memorandum of Understanding for the project site to seek relief to develop the site, or if the proponents intend to comply with the regulations without the need for a WDP.**

It is anticipated that the development of Blocks I and J will be included in a WDP.

CZM.09 **The project is proposing to develop along the shoreline of the Reserved Channel. The proponent should calculate the Water-Dependent Use Zone on the site, as well as the height requirements and the Facilities of Public Accommodation proposed for this area.**

The WDUZ, calculated in accordance with 310 CMR 9.51(3)(c), is shown on Figures 5-1 and 5-2 (pages 5-2 and 5-5). The area of WDUZ within Block C is provided in Table 5-1 (page 5-4). A representative section through Block C, including maximum allowable height under Chapter 91, is shown on Figure 5-4 (page 5-4). At this stage of the Master Plan Project, ground floor plans depicting the location and area of specific uses have not been developed. The Proponent acknowledges regulatory requirements of 310 CMR 9.51 and 310 CMR 9.53 with respect to ground floor uses. Any buildings authorized under the (base) Waterways Regulations will comply with those requirements.

CZM.10 The proposed project may be subject to CZM federal consistency review and, if so, must be found to be consistent with CZM's enforceable program policies.

The Proponent will work with CZM to determine if federal consistency review is required.

Massachusetts Port Authority
One Harborside Drive, Suite 200S
East Boston, MA 02128-2909
Telephone (617) 568-1000
www.massport.com

June 10, 2024

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
Alex Strysky, EEA #16802
100 Cambridge Street, Suite 900
Boston, MA 02114

Subject: ENF Reserved Channel Master Plan Development (EEA #16802)

Dear Secretary Tepper:

On behalf of the Massachusetts Port Authority (Massport), thank you for the opportunity to comment on the Environmental Notification Form (ENF) for the proposed Reserved Channel Master Plan ("Master Plan") and subsequent developments south of Summer Street in South Boston ("Master Plan Project Site"). Oxford-Pappas ("OxP" or "Proponent"), a Massport tenant, proposes to develop a mix of lab, commercial, residential, and open space uses in three phases over the next 15 to 20 years ("Project"). Approximately 38.2 acres of the overall development site are owned by Massport and leased to OxP and they own the remaining 3.4 acres in fee.

The Proponent intends to develop approximately 12.9 acres of the Master Plan Project Site as Phase 1. This initial phase includes 10.9 acres of land leased from Massport and 2.0 acres of land owned in fee by OxP and is located along West First Street, between E Street and Pappas Way. The Phase 1 Project Site currently includes obsolete light industrial buildings and parking lots. The proposed development will replace these structures with residential apartment buildings, lab/commercial buildings, new public open space, and retail/civic amenities.

The Phase 1 Project is currently under review through the Boston Planning & Development Agency's (BPDA) Article 80 Development Review. Concurrent with this review, the Proponent has filed a joint ENF that covers both Phase 1 and the Master Plan and outlines the expected impacts of the development program. Massport is actively engaged with the Proponent as they refine their Phase 1 Project plan and the overall Master Plan. Under the established MEPA Special Review Procedure (SRP), the Proponent held a number of public meetings and a site walk with the community, BPDA, MEPA, and Massport. The Proponent will refine Phase 1 and the Master Plan this summer in response to community and agency feedback.

Once the Master Plan and Phase 1 have been solidified, Massport expects to remove certain parcels from the existing 38-acres ground lease and enter into multiple new ground leases with the OxP before

construction starts. Each new ground lease will reflect the new permitted uses, development density, and infrastructure commitments and must be approved by Massport's Board. In addition to the typical components of a comprehensive development master planning effort, Massport will work with the Proponent to address how the Project will make contributions in the following areas:

1. Transportation solutions;
2. Resiliency;
3. Diversity, Equity, and Inclusion opportunities; and
4. Maritime industrial business growth.

Massport is broadly supportive of the Project and the on-going community engagement process. The build-out of Phase 1, and the implementation of the future phases under the Master Plan, will create new housing, employment opportunities, retail and service amenities, public open spaces, and tax and ground lease revenues. MP.01

Please contact me at (617) 568-3103 or at ahargens@massport.com if you would like to discuss Massport's comments in more detail.

Sincerely,

Andrew Hargens

Andrew G. Hargens, AICP | LEED AP
Chief Development Officer
Massachusetts Port Authority

cc: M. McGowan – Oxford Proprties
J. Loveluck, N. Stephens, T. Butler, J. Barrera, B. Washburn, C. Busch – Massport

MASSACHUSETTS PORT AUTHORITY

MP.01 **Massport is broadly supportive of the Project and the on-going community engagement process.**

The Proponent looks forward to continued engagement with Massport and other stakeholders during the review of the Master Plan Project.

Boston Water and Sewer Commission

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

May 24, 2024

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Alexander Strysky, EEA No. 16802
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Reserve Channel Master Plan Development
Environmental Notification Form

Dear Secretary, Tepper:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) for the proposed redevelopment project located at West First Street and Pappas Way in the South Boston neighborhood of Boston. This letter provides the Commission's comments on the ENF.

The proposed project is located on an approximately 41.66-acre site situated north of West First Street, south of Summer Street, and west of the Reserved Channel. The project proponents Oxford Group and Pappas Enterprises, Inc. (OPG/PEI) propose to construct a mixed-use development. The mixed-use development as proposed includes twenty-five new buildings containing approximately 5,989,000 gross square feet (gsf). The development will be built in several phases and is expected to be complete in 30 years. Mixed uses will include commercial research laboratories, residential housing, a hotel building, civic space, retail space, commercial space, and a public marina. The number of on-site parking spaces has not been established. Proposed parking for each phase will be determined in coordination with public agencies.

For water service, the Commission owns and maintains water mains in all streets bordering the site. E Street has a 12-inch ductile iron cement lined (DICL) water main that was installed in 2003. Summer Street has a 12-inch pit cast iron water main that was installed in 1916 and cleaned and cement lined in 1992. West First Street has two 16-inch DICL water mains that were installed in 2011 and 2012. Pappas Way has two water mains, a 12-inch private water main that was installed in 2011 and a 12-inch Commission water main that ends near the hydrant on the private road. There is also an 8-inch branch on the private water main at 649 Pappas Way that extends northwesterly across the site. All the water mains are served by the Commission's Southern Low-Pressure Zone. The only exception is the 16-inch DICL water main installed in 2012. That water main is served by the Commission's Southern High-Pressure Zone

For sewer and drain service, the Commission has a 30-inch by 45-inch sewer and 36-inch storm drain in E Street. Summer Street has two 12-inch sewers and an 18-inch storm drain and a 72-inch storm drain. West First Street has a 42-inch sewer and 72-inch by 48-inch storm drain. The 72-inch by 48-inch storm drain changes to a 72-inch combined sewer overflow (CSO) pipe at the regulator located near the intersection of West First Street and F Street. Pappas Way has a 10-inch sanitary sewer and an 84-inch CSO pipe. In addition, the Commission owns 2-CSO pipes that traverse the project site. A 48-inch pipe extends easterly from the regulator chamber at F Street and ends at a manhole that transitions a 60-inch CSO pipe to a 72-inch pipe. The 60-inch CSO pipe extends across E Street in a southeasterly direction under a building, onto the project site and increases to a 72-inch pipe that ends at an outfall in the Reserved Channel. There is also a private sewer on the site that serves 647B Summer Street.

The ENF states that daily water demand for the proposed project is estimated to be 682,570 gallons per day (gpd) and wastewater generation is estimated to be 620,518 gpd.

The Commission has the following comments regarding the proposed project.

General

1. Prior to the initial phase of the site plan development, OPG/PEI, should meet with the Commission's Design and Engineering Customer Services Departments to review water main, sewer and storm drainage system availability and potential upgrades that could impact the development. BWSC.01

2. Prior to demolition of any buildings, all water, sewer, and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The proponent must complete a Cut and Cap General Services Application, available from the Commission. BWSC.02

3. All new or relocated water mains, sewers and storm drains must be designed and constructed at OPG/PEI's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use regulations, and Requirements for Site Plans. The site plan should include the locations of new, relocated, and existing water mains, sewers and drains which serve the site, proposed service connections, water meter locations, as well as backflow prevention devices in the facilities that will require inspection. A General Service Application must also be submitted to the Commission with the site plan. BWSC.03

4. The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority (MWRA) and its member communities, has implemented a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) BWSC.04

in the system. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of I/I for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, a minimum ratio of 4:1 for I/I removal to new wastewater flow added is used. The Commission will require proponents to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan.

5. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses, and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/ BWSC.05

6. OPG/PEI proposes to build a network of roadways to provide access to the new buildings. If any new water or sewer facilities to serve the new buildings or new storm drains for street drainage are constructed. Ownership of the new water, sewer and drainage facilities should be addressed in future filings to the BPDA and MEPA office. BWSC.06

7. The Commission owns and maintains an outfall within the vicinity of the project site. It is in the Reserved Channel across from 649 Summer Street. The Commission requests that OPG/PEI take appropriate measures to ensure that the outfall and connecting pipes are not damaged during construction. BWSC.07

8. OPG/PEI is advised that the Commission will not allow buildings to be constructed over any of its water lines. Also, any plans to build over Commission sewer facilities are subject to review and approval by the Commission. The project must be designed so that access, including vehicular access, to the Commission's water and sewer lines for the purpose of operation and maintenance is not inhibited. BWSC.08

9. The Commission will require OPG/PEI to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on, or adjacent to, the project site during construction. As a condition of the site plan approval, the Commission will require OPG/PEI to inspect the existing sewer lines by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity. BWSC.09

10. It is OPG/PEI responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, OPG/PEI must include a detailed capacity analysis using maximum hourly demands for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer, and storm drainage systems serving South Boston. BWSC.10

11. The laboratory facilities may require that the project proponent or owner of the facility complete and submit a Sewer Use Discharge Permit Application with the MWRA. If OPG/PEI needs additional information regarding the Permit application contact MWRA's Toxic Reduction and Control Unit at 617-305-5627. BWSC.11

12. Activities within the proposed (Facility) may have Standard Industrial Classification (SIC) Codes that the Environmental Protection Agency (EPA) has designated as requiring a Multi-Sector General Stormwater Permit for Industrial Facilities (MSGP). The project proponent or owner of the facility is responsible for determining whether a MSGP is required. If a MSGP is required the project proponent or owner is responsible for submitting to EPA a Notice of Intent (NOI) for coverage under the MSGP, and for submitting to the Commission a copy of the NOI and Pollution Prevention Plan prepared pursuant to the NOI. If the MSGP designated SIC Codes apply to the project and the project obtains "No-Exposure" Certification from EPA for the activities, a copy of the No-Exposure Certification must be provided to the Commission. BWSC.12

Water

1. OPG/PEI must provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. OPG/PEI should also provide the methodology used to estimate water demand for the proposed project. BWSC.13

2. OPG/PEI should explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. OPG/PEI should consider outdoor landscaping which requires minimal use of water to maintain. If OPG/PEI plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered. BWSC.14

3. OPG/PEI is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. OPG/PEI should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit. BWSC.15

4. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, OPG/PEI should contact the Commission's Meter Department. BWSC.16

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application OPG/PEI will be required to submit a Stormwater Pollution Prevention Plan. The plan must: BWSC.17

   - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater, or construction debris to the Commission's drainage system when construction is underway.

   - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and the location of major control structures or treatment structures to be utilized during the construction.

   - Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.

2. Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. OPG/PEI is responsible for determining if such a permit is required and for obtaining the permit. If such a permit is required, it is required that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Customer Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above. BWSC.18

3. The Commission encourages OPG/PEI to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers. BWSC.19

4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. OPG/PEI is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. If the dewatering drainage is contaminated with petroleum products, OPG/PEI will be required BWSC.20

to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge.

5. The Commission supports OPG/PEI commitment to investigate methods for retaining stormwater on-site. The site plan should indicate how storm drainage from roof drains will be handled. All projects at or above 100,000 square feet of floor area are to retain, on site, a volume of runoff equal to 1.25 inches of rainfall times the impervious area. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. BWSC.21

6. The Commission supports OPG/PEI commitment to meet Massachusetts Department of Environmental Protection (MassDEP) and the Commission stormwater management standards. The standards address water quality, water quantity and recharge. BWSC.22

7. OPG/PEI's proposed approach for protection of the site from sea level rise and coastal flooding consist of elevating the property, buildings, and streets above the City's minimum flood defense. OPG/PEI must coordinate their efforts with the Commission and owners of any private and / or undocumented outfall that could allow ocean water to backflow into the wastewater system and cause inland flooding. Tidegates or other types of backflow prevention devices may be required on the Commission's and other privately owned outfalls. BWSC.23

8. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system. BWSC.24

9. The Commission has two CSO pipes that extend across the project site. A 48-inch pipe and a 60–inch pipe that increases to a 72-inch pipe. Both pipes were reported to be in poor condition and vibration caused from construction activities or the additional fill placed over the pipe will increase the probability of failure. OPG/PEI will be required to either replace or relocate the pipe in a public street. BWSC.25

10. The Commission requests that OPG/PEI install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. OPG/PEI should contact the Commission's Operations Division for information regarding the purchase of the castings. BWSC.26

11. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. OPG/PEI is advised to consult with the Commission's Operations Department with regards to grease traps. BWSC.27

12. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Customer Services Department, include requirements for separators. BWSC.28

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/RJA

cc: K. Ronan, MWRA via e-mail
P. Larocque, BWSC via e-mail
P. Salvatore, BWSC via e-mail

BOSTON WATER AND SEWER COMMISSION

BWSC.01 **Prior to the initial phase of the site plan development, OPG/PEI should meet with the Commission's Design and Engineering's Customer Services Department to review water main, sewer and storm drainage system availability and potential upgrades that could impact the development.**

The Proponent will meet, prior to the initial site plan development, with the BWSC's Design and Engineering Customer Services Departments to review sewer and storm drainage system availability and potential upgrades that could impact the development.

BWSC.02 **Prior to demolition of any buildings, all water, sewer, and storm drain connections to the building must be cut and capped at the main pipe in accordance with the Commission's requirements. The Proponent must complete a Cut and Cap General Services Application, available from the Commission.**

Prior to demolition of any buildings, the Proponent will complete Cut and Cap General Services Applications.

BWSC.03 **All new or relocated water mains, sewers and storm drains must be designed and constructed at OPG/PEI's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use regulations, and Requirements for Site Plans. The site plan should include the locations of new, relocated, and existing water mains, sewers and drains which serve the site, proposed service connections, water meter locations, as well as backflow prevention devices in the facilities that will require inspection. A General Service Application must also be submitted to the Commission with the site plan.**

New or relocated water mains, sewers and storm drains will be designed and constructed in conformance with BWSC design standards, regulations and site plan requirements.

BWSC.04 **The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority (MWRA) and its member communities, has implemented a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of VI for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the 1/1 reduction effort to ensure that the additional wastewater flows are offset by the removal of 1/1. Currently, a minimum ratio of 4: I for VI removal to new wastewater**

flow added is used. The Commission will require proponents to develop a consistent inflow reduction plan. The 4: I requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan.

As discussed in Section 8.2.3 (page 8-7), the Proponent is committed to I/I mitigation which may include monetary contributions or mitigation measures, the specifics of which will be determined as each building's systems are reviewed by BWSC.

BWSC.05 **The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses, and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/.**

The proposed streetscape design incorporates Complete Streets principles, including wide sidewalks, street trees, landscaped buffers, and permeable paving where practicable to enhance pedestrian experience and manage stormwater. Section 6.3 (starting on page 6-7) describes the stormwater management plan which will utilize LID strategies.

BWSC.06 **OPG/PEI proposes to build a network of roadways to provide access to the new buildings. If any new water or sewer facilities to serve the new buildings or new storm drains for street drainage are constructed. Ownership of the new water, sewer and drainage facilities should be addressed in future filings to the BPDA and MEPA office.**

It is anticipated that new roadways constructed within the Massport-owned property will remain under the ownership of Massport. Easements for BWSC infrastructure will be provided as the design and site plan permitting advances.

BWSC.07 **The Commission owns and maintains an outfall within the vicinity of the project site. It is in the Reserved Channel across from 649 Summer Street. The Commission requests that OPG/PEl take appropriate measures to ensure that the outfall and connecting pipes are not damaged during construction.**

The Proponent is committed to protecting the outfall and connecting pipes throughout the Master Plan Project construction.

BWSC.08 **OPG/PEI is advised that the Commission will not allow buildings to be constructed over any of its water lines. Also, any plans to build over Commission sewer facilities are subject to review and approval by the Commission. The project must be designed so**

that access, including vehicular access, to the Commission's water and sewer lines for the purpose of operation and maintenance is not inhibited.

No building construction over water lines is anticipated.

BWSC.09 **The Commission will require OPG/PEl to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on, or adjacent to, the project site during construction. As a condition of the site plan approval, the Commission will require OPG/PEl to inspect the existing sewer lines by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity.**

The Proponent commits to inspect sewer lines by CCTV after construction is complete.

BWSC.10 **It is OPG/PEI responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, OPG/PEI must include a detailed capacity analysis using maximum hourly demands for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer, and storm drainage systems serving South Boston.**

The Proponent will submit capacity analysis calculations during each Site Plan Review process that will be required.

BWSC.11 **The laboratory facilities may require that the project proponent or owner of the facility complete and submit a Sewer Use Discharge Permit Application with the MWRA. If OPG/PEI needs additional information regarding the Permit application contact MWRA's Toxic Reduction and Control Unit at 617-305-5627.**

Laboratory or facilities that discharge chemicals or other industrial waste require a Sewer Use Discharge Permit from the MWRA's TRAC Department. The Proponent is committed to filing appropriate documentation for a Sewer Use Discharge Permit as information regarding potential toxic discharges is available.

BWSC.12 **Activities within the proposed (Facility) may have Standard Industrial Classification (SIC) Codes that the Environmental Protection Agency (EPA) has designated as requiring a Multi-Sector General Stormwater Permit for Industrial Facilities (MSGP). The project proponent or owner of the facility is responsible for determining whether a MSGP is required. If a MSGP is required the project proponent or owner is responsible for submitting to EPA a Notice of Intent (NOI) for coverage under the MSGP, and for submitting to the Commission a copy of the NOI and Pollution Prevention Plan prepared pursuant to the NOL If the MSGP designated SIC Codes apply to the project and the project obtains ''No-Exposure" Certification from EPA for the activities, a copy of the No-Exposure Certification must be provided to the Commission.**

If any activities or users are identified as requiring a MSGP, the Proponent or user will obtain coverage under the MSGP.

BWSC.13 **OPG/PEI must provide separate estimates of peak and continuous maximum water. demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. OPG/PEI should also provide the methodology used to estimate water demand for the proposed project.**

The Proponent will submit peak water demand calculations during the Site Plan Review process for each building or phase.

BWSC.14 **OPG/PEI should explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. OPG/PEI should consider outdoor landscaping which requires minimal use of water to maintain. If OPG/PEI plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered.**

Water conservation measures are discussed in Section 8.1.3 (page 8-3).

BWSC.15 **OPG/PEI is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. OPG/PEI should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit.**

The Proponent will obtain the Hydrant Permit, if required.

BWSC.16 **The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, OPG/PEI should contact the Commission's Meter Department.**

The Proponent will contact the BWSC's Meter Department for new water meters.

BWSC.17 **In conjunction with the Site Plan and the General Service Application OPG/PEI will be required to submit a Stormwater Pollution Prevention Plan. The plan must:**

- **Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater, or construction debris to the Commission's drainage system when construction is underway.**
- **Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or**

storm water, and the location of major control structures or treatment structures to be utilized during the construction.

- **Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.**

A SWPPP will be submitted in conjunction with the Site Plan Review and General Service Application.

BWSC.18 **Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. OPG/PEI is responsible for determining if such a permit is required and for obtaining the permit. If such a permit is required, it is required that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Customer Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.**

An NPDES Construction General Permit will be obtained and submitted to BWSC as required.

BWSC.19 **The Commission encourages OPG/PEI to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.**

An Operations and Maintenance will be submitted during the Site Plan Review process addressing the use of sand and deicing chemicals, pesticides, and fertilizers.

BWSC.20 **The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. OPG/PEI is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. If the dewatering drainage is contaminated with petroleum products, OPG/PEI will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge.**

The Proponent will obtain a Drainage Discharge Permit and Remediation General Permit, if required.

BWSC.21 **The Commission supports OPG/PEI commitment to investigate methods for retaining stormwater on-site. The site plan should indicate how storm drainage from roof drains will be handled. All projects at or above 100,000 square feet of floor area are to retain,**

on site, a volume of runoff equal to 1.25 inches of rainfall times the impervious area. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer.

The Proponent intends to fully investigate methods for retaining stormwater on-site and will include proposed runoff retention methods with the Site Plan application.

BWSC.22 **The Commission supports OPG/PEI commitment to meet Massachusetts Department of Environmental Protection (MassDEP) and the Commission stormwater management standards. The standards address water quality, water quantity and recharge.**

How the Master Plan Project intends to meet the Stormwater Management Standards is described in Section 6.3 (starting on page 6-7).

BWSC.23 **OPG/PEI's proposed approach for protection of the site from sea level rise and coastal flooding consist of elevating the property, buildings, and streets above the City's minimum flood defense. OPG/PEI must coordinate their efforts with the Commission and owners of any private and / or undocumented outfall that could allow ocean water to backflow into the wastewater system and cause inland flooding. Tidegates or other types of backflow prevention devices may be required on the Commission's and other privately owned outfalls.**

The Proponent commits to work with BWSC to identify the potential for strategies to prevent ocean water to backflow into the wastewater system and cause inland flooding.

BWSC.24 **Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system.**

With the full build-out of the Master Plan Project, all new service connections are anticipated. In the event any existing stormwater and sanitary sewer service connections are re-used, dye testing will be conducted to confirm they are connected to the appropriate system.

BWSC.25 **The Commission has two CSO pipes that extend across the project site. A 48-inch pipe and a 60-inch pipe that increases to a 72-inch pipe. Both pipes were reported to be in poor condition and vibration caused from construction activities or the additional fill placed over the pipe will increase the probability of failure. OPG/PEI will be required to either replace or relocate the pipe in a public street.**

The Proponent anticipates replacement/relocation of the 48-, 60- and 72-inch CSO pipes to the 84-inch CSO pipe in Pappas Way. The pipes will be replaced/relocated as required for each phase. Any pipes that remain in-place during construction will be protected from vibration and other construction activities.

BWSC.26 **The Commission requests that OPG/PEI install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. OPG/PEI should contact the Commission's Operations Division for information regarding the purchase of the castings.**

"Don't Dump: Drains to Boston Harbor" plaques will be included in the Site Plan Review.

BWSC.27 **If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. OPG/PEI is advised to consult with the Commission's Operations Department with regards to grease traps.**

Grease traps will be provided for any cafeteria or food service facility.

BWSC.28 **The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Customer Services Department, include requirements for separators.**

Oil/Gas separators will be installed in accordance with the BWSC's Sewer Use Regulations.

From: Maura Martinelli
To: Strysky, Alexander (EEA)
Subject: Reserved Channel Development
Date: Wednesday, April 24, 2024 11:27:16 AM

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MM.01

Hello! I am a direct abutter to this proposal and am interested in understanding how the developers building hills to protect themselves from flooding will not result in water then flooding into existing homes and basements not currently built on hills? I was under the impression that it is not OK for people to do that because of the impacts it has on the rest of the community. Also the height of these buildings is more than double our home and directly adjacent buildings. Thanks Maura Martinelli, concerned neighbor

From:	Maura Martinelli
To:	Strysky, Alexander (EEA); Hardock, Kate (EEA); Kim, Tori (EEA)
Cc:	Matthew Martinelli; Ann Sanders; Julie Isch; lydia.polaski@boston.gov; Edward Flynn; Nick.Collins@masenate.gov
Subject:	Reserved Channel Development
Date:	Friday, May 3, 2024 12:36:47 PM

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Hello,

I am reading through the April 22, 2024 presentation of the Reserved Channel Development on the BPDA project website. I am a directly abutting neighbor in a townhome on the corner of East First Street and Pappas Way. We have been in South Boston for 10 years, in this home for 8 years, and are committed to staying here to raise our family. Both of my kids are in the Boston Public Schools, they are 7 and 9 years old. We have a vested interest in this community and would like to see this project serve as a positive addition to the neighborhood. Some questions and comments so far:

1. To the extent the developers create hills upon which to build, which seems to be what they are proposing to address coastal flooding, how will that not then force water runoff into surrounding streets and homes? I understand they want to protect their development but common sense tells me it is simply going to displace the water into surrounding areas. MM.02

2. How are developers being allowed to build between 100 and 200 feet of height of (buildings A1 and A2) directly across from our homes, which range between 35 feet and 50 feet? This is totally out of place, will block air and light, and the density will create transportation issues. Where is the zoning in all of this? Also, when I hear Oxford/Pappas representatives on the presentations, they are not clearly stating to the community the height in feet of what they are proposing to build, from grade, and the heights of the existing buildings, all in feet, all from ground level (not starting at the height of their hills they are building) MM.03 MM.04

3. The park location slightly east of F Street before reaching Pappas Way on West First Street is directly across from a warehouse that was previously abandoned before the current lease by a construction company. Residential buildings are across from A1 and diagonally across from A2. The park should be closer to the Reserved Channel, directly on the corner of First Street intersection and Pappas Way, to both absorb coastal flooding and also to make it easier for residents to access it. It will have less positive impact the further away it is from the Reserved Channel, such as where they are proposing to put it. MM.05

4. In terms of use, we need housing for people to be able to afford to live here, and it should be available to everyone. There are a lot of 1 to 2 bedrooms in new developments but barely any 3 or 4 which dissuades families from remaining in city. Most people move out a result, which increases emissions and traffic because then people have to commute back into the city for work, and a lot of people drive because the trains are so unreliable. MM.06

I am copying a couple of my neighbors on this email, Ann Sanders and Julie Isch, as well as my husband (all 3 are CAC members for this project), as we stand in alignment on these issues. Also including Lydia Polaski, our Neighborhood Liaison who works tirelessly on behalf of its residents, Ed Flynn, our City Councilman, and Nick Collins, our state senator.

Many more of my neighbors are also aligned on these issues and will be attending meetings, and have or plan to write letters.

Thank you.

Maura Martinelli

MAURA MARTINELLI

MM.01 **I am interested in understanding how the developers building hills to protect themselves from flooding will not result in water then flooding into existing homes and basements not currently built on hills.**

Section 10.4 (starting on page 10-17) discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F. The analysis shows that the flood extent and depth in the surrounding area during potential future storm events will not be impacted by the increased elevation of the Master Plan Site.

MM.02 **To the extent the developers create hills upon which to build, which seems to be what they are proposing to address coastal flooding, how will that not then force water runoff into surrounding streets and homes?**

The Proponent appreciates this concern, as it is intuitive to wonder whether raising the Master Plan Site could cause stormwater to drain toward lower-lying homes. The DEIR addresses this directly in Section 10.4 (starting on page 10-17).

The raised areas of the Master Plan Site are being designed with new stormwater management systems, including infiltration, treatment, and storage features, that capture rainfall on-site before it reaches surrounding streets. In other words, stormwater from new development does not shed toward the neighborhood — it is collected, slowed, treated, and released in a controlled manner that meets City and state requirements.

In addition, the coastal modeling included in Section 10.4 (starting on page 10-17) shows that elevating the Master Plan Site does not cause storm-driven coastal flooding to move toward West First Street. The Phase 1 Project's grading and drainage design is intentionally shaped to avoid redirecting water toward residential areas. These safeguards will be carried forward into later design stages and reviewed again during detailed permitting.

MM.03 **How are developers being allowed to build between 100 and 200 feet of height of (buildings A1 and A2) directly across from our homes, which range between 35 feet and 50 feet?**

The Proponent recognizes that the height difference between new buildings and existing homes can be a sensitive issue for some neighbors along West First Street.

In response to this feedback, the Phase 1 Project has been significantly modified to create greater distance between taller buildings and the existing neighborhood. Buildings in Blocks A and B have been moved further away from West First Street, and the frontage

itself now has the lowest building heights in the entire Master Plan Project, supported by wider sidewalks, landscaping, and a stepped-down massing strategy.

The Design Guidelines (see Appendix A) also reinforce this transition, stating that heights will increase gradually toward the interior of the Master Plan Site and the Reserved Channel rather than directly along West First Street. Figures included in Chapter 1 and Appendix A illustrate how these setbacks, lower street-edge buildings, and open space areas help reduce perceived height from the residential side of West First Street.

As the Phase 1 Project moves into detailed design review, there will be additional opportunities to study façade articulation, step-backs, and view corridors to ensure the West First Street edge remains as respectful of neighborhood character as possible.

MM.04 **Where is the zoning in all of this? Also, when I hear Oxford/Pappas representatives on the presentations, they are not clearly stating to the community the height in feet of what they are proposing to build, from grade, and the heights of the existing buildings, all in feet, all from ground level (not starting at the height of their hills they are building).**

The Proponent understands that questions about zoning and building height measurement can be technical and unclear—especially when different agencies apply different sets of rules. The Proponent also recognizes the concern that past presentations may not have always provided height information in a way that felt clear or easy to compare to the surrounding homes. Your feedback on this point is important and appreciated.

Most of the Master Plan Site is owned by Massport, which means that the majority of the Master Plan Project is not regulated by the City's Zoning Code in the way that typical private property development is. For the smaller portion of the Master Plan Site that is privately owned (the Fee Simple parcels), building heights will be reviewed and defined through the City's Planned Development Area process, which will be submitted during review of the DEIR and requires public review and City approval.

The Proponent hears the concern about ensuring that height information is communicated clearly so neighbors can understand how proposed buildings compare to existing homes. To be transparent, the DEIR measures building height the same way the Zoning Code requires—from existing ground level, in feet, not from the elevated grades planned for the project. Elevation drawings in Appendix A show a direct comparison between the proposed buildings and the West First Street grade, allowing for a comparison to existing conditions.

The Proponent also acknowledges that height in feet was not always emphasized clearly in earlier presentations. Going forward, the Proponent commits to presenting building heights in feet and measured from the West First Street ground elevation so community members can better understand the proposed development.

The Proponent's goal is to provide information in a way that is accessible and respectful, and your feedback helps us improve how we communicate these details.

MM.05 **The park should be to the Reserved Channel, directly on the corner of First Street intersection and Pappas Way, to both absorb coastal flooding and also to make it easier for residents to access it.**

Based on comments received from the community, in the full-build condition, the Master Plan proposes to discontinue the section of Pappas Way within Block A, and to improve it as open space in the interim full-build condition. Proposed interim improvements consist of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A

Converting portions or all of Pappas Way into open space was reviewed. This change would not impact flood extents or depth of flooding, and would have limited impacts on velocities. These limited changes to velocity would only occur in the localized area at Pappas Way and would not influence the velocities modeled in neighboring or adjacent areas.

MM.06 **In terms of use, we need housing for people to be able to afford to live here, and it should be available to everyone.**

In response to community priorities around housing, the Phase 1 program is now primarily residential uses, which will be located on Blocks A and B. Across the total Phase 1 program area (Blocks A, B and C) the residential portion reaches approximately 58%.

From:	Beauchaine, Joseph
To:	nick.carter@boston.gov; gstarsiak@epsilonassociates.com; Strysky, Alexander (EEA)
Cc:	Ashley Wade; Ed.Flynn@boston.gov; Erin.Murphy@boston.gov; Nick.Collins@masenate.gov; mauranugent7@gmail.com
Subject:	Reserved Channel Development Wrap Up Meeting Comments
Date:	Wednesday, May 22, 2024 11:05:34 AM
Attachments:	image001.png
Importance:	High

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Hi All,

I am unable to attend tonight's Reserve Channel meeting at the Condon School due to prior commitments, but I am growing ever more concerned as this project nears approval that what was initially promised is not coming taking shape – it's quite the opposite. See below my list of concerns and recommendations. I have submitted formal comments but did not hear back from anyone associated with the project.

1. The proposed height is in no way aligned with abutters on East/West First street, even though it was promised in the initial stages of the project that it would in alignment with the neighborhood. It appears that nearly double the height of existing residential real estate is being considered aligned….I'm not sure about the logic being applied here. "Appropriately designed to respect surrounding neighborhood along West First street and the residential section of South Boston" was the verbiage used….the plans are not consistent with the project description. JB.01

2. The park should be located at the corner of Pappas Way and East/West First street. Rationale being that building will begin closer to what is now commercial lots on both sides of East First Street. This will also mitigate noise for abutters that are located directly across the street. JB.02

3. The best approach to mitigating abutter concerns would be to start building on the Seaport side of Pappas Way (Summer Street). Height is far more aligned with the Seaport, and in no way aligned with the existing neighborhood on East/West First Street. The residential side of South Boston along West/East First is not the Seaport and should not be treated as such….existing development is night and day compared with the Seaport. JB.03

4. Traffic and road noise is already a concern on East/West First Street. I would propose that in addition to relocating the park, both sides of East First Street closest to the project be lined with mature trees to mitigate noise. This would likely involve widening the sidewalks on East/West First to ensure ADA compliance and room for mature trees. Has a traffic assessment been completed? JB.04

5. Traffic patterns should be considered as the four way stop at Pappas Way is already a dangerous intersection and East First Street is currently heavily traveled by both commercial and personal vehicles, especially during the morning and evening commute. JB.05

6. What are the real public benefits here for abutters? Will the Reserve Channel public access be enhanced in addition to the park?

JB.06

As an abutter I would like to know the answer to these questions, or in the very least that they are addressed at tonight's meeting. So far, public comments seem to have fallen on deaf ears, and yet again long-time residents/property owners of South Boston stand see another project approved without much consideration given to their concerns. For a large, long-duration project such as this one, every possible effort to come to a collective agreement should be taken as residents will bear the brunt of construction noise, traffic, and potentially minimal benefits for years to come.

Thank you in advance taking the time to consider the above recommendations. I hope that residents are given they respect they deserve and that public comments are being taken seriously.

Have a nice afternoon.
Joe

Joseph A. Beauchaine, CFP ®, CAIA | Managing Director | CIBC Private Wealth I CIBC National Trust Company I CIBC Private Wealth Advisors, Inc.
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JOSEPH BEAUCHAINE

JB.01 **The proposed height is in no way aligned with abutters on East/West First street, even though it was promised in the initial stages of the project that it would in alignment with the neighborhood. It appears that nearly double the height of existing residential real estate is being considered aligned….I'm not sure about the logic being applied here. "Appropriately designed to respect surrounding neighborhood along West First street and the residential section of South Boston" was the verbiage used….the plans are not consistent with the project description.**

The Proponent recognizes that the height difference between new buildings and existing homes can be a sensitive issue for some neighbors along West First Street.

In response to this feedback, the Phase 1 Project has been significantly modified to create greater distance between taller buildings and the existing neighborhood. Buildings in Blocks A and B have been moved further away from West First Street, and the frontage itself now has the lowest building heights in the entire Master Plan Project, supported by wider sidewalks, landscaping, and a stepped-down massing strategy.

The Design Guidelines (see Appendix A) also reinforce this transition, stating that heights will increase gradually toward the interior of the Master Plan Site and the Reserved Channel rather than directly along West First Street. Figures included in Chapter 1 and Appendix A illustrate how these setbacks, lower street-edge buildings, and open space areas help reduce perceived height from the residential side of West First Street.

The DEIR acknowledges that the resulting heights are greater than existing residential buildings, but the design intentionally uses distance, setbacks, and modulation to soften perceived scale and ensure a more respectful transition along West First Street. Additional refinements will continue through the Article 80 design review and PDA processes, where the height envelope, building massing, and façade articulation will be further shaped in collaboration with City agencies and the community.

JB.02 **The park should be located at the corner of Pappas Way and East/West First Street. Rationale being that building will begin closer to what is now commercial lots on both sides of East First Street. This will also mitigate noise for abutters that are located directly across the street.**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed

interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

JB.03 **The best approach to mitigating abutter concerns would be to start building on the Seaport side of Pappas Way (Summer Street). Height is far more aligned with the Seaport, and in no way aligned with the existing neighborhood on East/West First Street. The residential side of South Boston along West/East First is not the Seaport and should not be treated as such….existing development is night and day compared with the Seaport.**

The Proponent acknowledges community concerns regarding building heights, development sequencing, and their relationship to surrounding neighborhoods. Existing lease term durations across the Master Plan Site have informed the Master Plan Project's contemplated phasing. As discussed in Section 1.2.5 (starting on page 1-21), in response to comments received, the Master Plan Project has been revised so that the lowest heights and the widest setbacks occur along West First Street, with height stepping up gradually only as the plan moves north toward Summer Street. This approach recognizes the very different character of the neighborhood edge and is intended to create a respectful transition rather than treating West First Street like the Seaport District.

JB.04 **Traffic and road noise is already a concern on East/West First Street. I would propose that in addition to relocating the park, both sides of East First Street closest to the project be lined with mature trees to mitigate noise. This would likely involve widening the sidewalks on East/West First to ensure ADA compliance and room for mature trees. Has a traffic assessment been completed?**

In response to community comment, in the full-build condition, Pappas Way will not connect to East First Street, but instead divert vehicles to the new F Street, eliminating the potential vehicular noise from the current intersection which has been proposed to be improved as a new public open space. The Proponent will continue to encourage alternative modes of transportation to limit vehicular use related to the Master Plan Project. Chapter 7 includes additional details.

JB.05 **Traffic patterns should be considered as the four way stop at Pappas Way is already a dangerous intersection and East First Street is currently heavily traveled by both commercial and personal vehicles, especially during the morning and evening commute.**

Section 7.5.1.5 (page 7-40) discusses options for the Pappas Way/West First Street/East First Street intersection and Phase 1 will make improvements to the intersection. In the full-build condition, the intersection will be closed and become a open space.

JB.06 **What are the real public benefits here for abutters? Will the Reserve Channel public access be enhanced in addition to the park?**

Section 1.5 (starting on page 1-36) describes the public benefits, including new open spaces, ground floor retail, improved pedestrian and bicycle connections, and enhanced resiliency measures.

From: David Wooddell
To: Strysky, Alexander (EEA)
Subject: Pappas Way comments
Date: Wednesday, May 29, 2024 11:22:17 AM

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Hello,
I have for several years moored my kayak at the end of the channel. I initially received permission from the harbor Master but I understand that open water is public territory when it comes to mooring....
I would like to suggest a proper floating pier that all might use to launch small watercraft. DW.01
Reservable racks might also be handy, if not a proper boathouse.
I hope that if a commercial entity takes residence to offer rentals a public option will also be available.
Thank you,
David Wooddell

DAVID WOODDELL

DW.01 **I would like to suggest a proper floating pier that all might use to launch small watercraft. Reservable racks might also be handy, if not a proper boathouse.**

Thank you for the suggestion. The Proponent shares your enthusiasm for access to the water and will continue to look at solutions to provide for a positive recreation environment at the Master Plan Site and on the adjacent Reserved Channel.

29 May 2024

To: Michelle Wu — *Mayor,* City of Boston

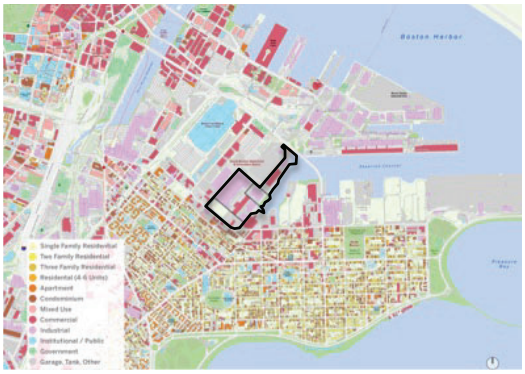
Edward Flynn — *City Councilor,* District 2
Nick Collins — *State Senator,* First Suffolk District
David Biele — *State Representative,* Fourth Suffolk District

Arthur Jemison — *Director,* BPDA
Nick Carter — *Senior Project Manager,* BPDA
Nupoor Monani — *Deputy Director for Institutional Master Planning and Policy,* BPDA
Aimee Chamber — *Director of Planning,* BPDA
Tori Kim — *Assistant Secretary/Director,* MEPA Environmental Justice
Alexander Strysky — *Senior Project Manager,* MEPA Environmental Justice
Kate Harson — *Liaison Coordinator,* MEPA Environmental Justice

EEA Monitor — https://eeaonline.eea.state.ma.us/EEA/PublicComment/UI/collectcomment/a0c07e76-c7e2-4479-af14-adc9ea4004a8

From: Lawrence A. Chan — *Community Advisory Committee (CAC) Member,* MEPA Environmental Justice Nominee
Resident, Chinatown-Leather District, Environmental Justice Block Group − 1 Mile Radius
Principal, Chan Urban Design, Boston MA
Co-Founder, former Chan Krieger & Associates, 1984-2010
Fellow Emeritus, American Institute of Architects
Urban Designer & Licensed Architect since 1980, retired

Re: **Reserved Channel Master Plan & Phase 1 Development Project, South Boston — REVIEW COMMENTS**



Context Land Use map, BPDA presentation, 11/17/23, page 25

It has been my pleasure to participate over the past four weeks as a CAC Member to review the 20- to 30-year master plan for the 42-acre Reserved Channel Development Project and Phase 1 development of a 12+ acre portion proposed on fee simple land owned by Oxford Properties/Pappas Enterprises and leased land owned by Massport. This memo is a summary of comments after reviewing project documents, participating in all public meetings held by BPDA and MEPA on the project since April 22, 2024, and visiting multiple times the project site and surrounding neighborhoods from South Boston to Marine Park, and from the Reserved Channel to the Convention Center.

The large project has great promise—thus also raises high expectations—not only for the project's success but also for what it can offer and achieve, and how it might influence the diverse and disparate precincts and neighborhoods that border each of its sides. Situated at the geographical center of South Boston, the project has enormous potential to not only become an iconic hub in and of itself, but also act as a catalyst to connect and bring together the diverse neighborhoods around it. Most compellingly, the opportunity to improve and enlarge Reserved Channel Park would add another emerald to Boston's renowned wealth of landscape, especially for those who live nearby, work in, and visit from South Boston, Seaport, Fort Point Channel, Downtown, Chinatown, Leather District, and South End.

Comment Topics

1 A Boulevard for West 1st Street in South Boston - page 2
2 A New Neighborhood Park for South Boston - page 4
3 A Vision for Reserved Channel Park - page 6
4 Conclusion - page 8

1 A Boulevard for West 1st Street in South Boston

LC.01

Phase 1 Development as proposed by the Proponents offers delightful wide sidewalks, generous building setbacks, and landscape to embellish the north side of West 1st St ***(Figures A & B).*** To create a memorable and balanced street corridor, it would be important to implement similar design features on the *south* side of West 1st St as well. This can only be possible if sufficient room is provided by shifting the sidewalk of Phase 1 and the alignment of West 1st St—without impacting the locations of the proposed buildings.

West 1st Street Deficiencies —

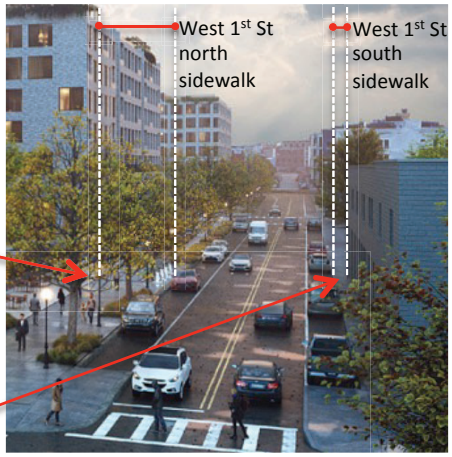
- The south side of West 1st St has narrow sidewalks, no trees, no landscape, and no bicycle lane ***(Fig. B)***
- The south side of West 1st St has sidewalks less than 6 ft wide overall and constricted by light poles and hydrants ***(Figures C & D)***
- Broken, uneven asphalt pavements constrict pedestrian circulation, especially strollers and wheelchairs ***(Fig. D)***
- Potential to widen sidewalk on south side of West 1st St would be *preempted* unless Phase 1 sidewalk is moved northward ***(Figure E)***

Opportunities —

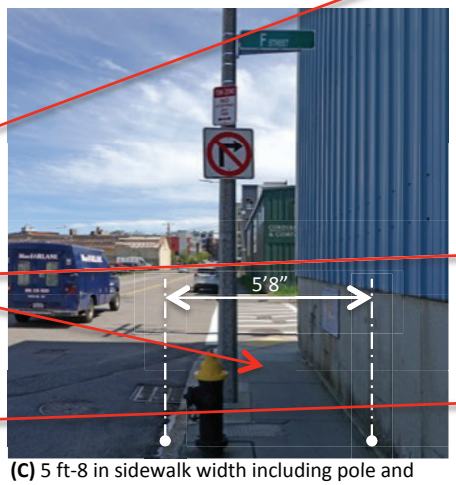
- Shifting Phase 1 sidewalk on the north side of West 1st St between Pappas Way & E St, would allow widening the south sidewalk of West 1st St to: • improve pedestrian safety and accessibility, especially for children, the disabled, and elderly; • provide space for landscape, seating and trees to improve air quality and reduce heat island effect; and • provide space to facilitate a bicycle lane ***(Figure F)***
- The sidewalk shift would set a precedent for other blocks along West 1st Street to eventually create a signature east-west landscape boulevard towards A Street Park, Broadway MBTA Station, and Fort Point Channel ***(Figure G)***



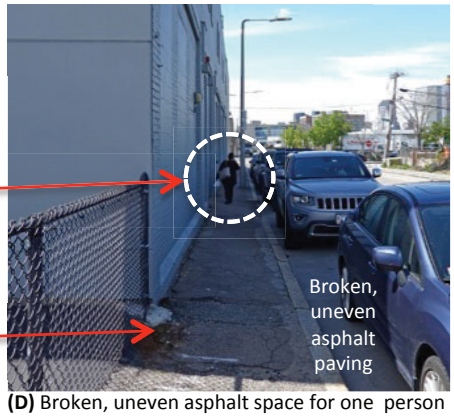
(A) Illustration of West 1st St north side, ENF document, 11/17/23, page 63



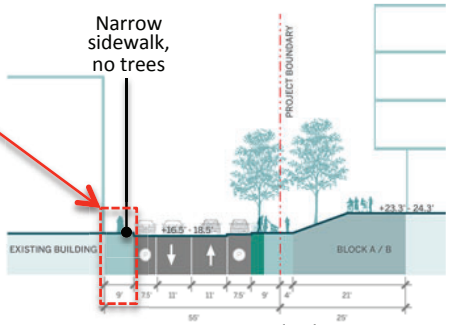
(B) Illustration of West 1st St, ENF document, 11/17/23, page 56



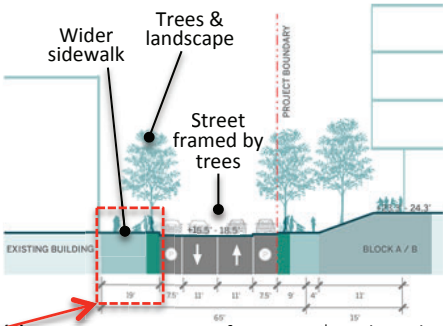
(C) 5 ft-8 in sidewalk width including pole and hydrant, West 1st St at F Street, 5/10/24



(D) Broken, uneven asphalt space for one person between building and pole, West 1st St, 5/10/24



(E) West 1st St Section, ENF, 11/17/23, page 51



(F) ALTERNATIVE section for West 1st Boulevard



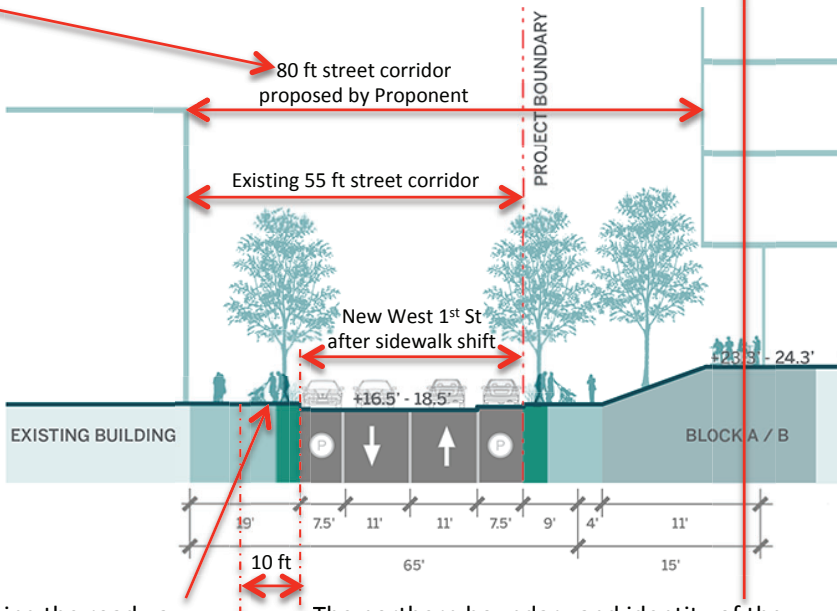
(G) Google satellite photo with West 1st St as a potential signature boulevard

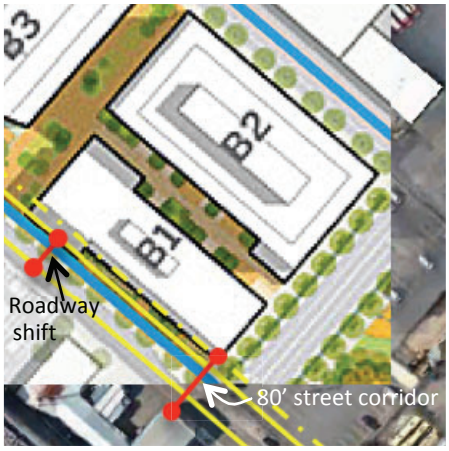
Steps to Achieve A Boulevard on West 1st Street



The Proponent's proposal to set back its buildings on the north side of West 1st St offers several opportunities, including:

- the possibility to widen the sidewalk on the *south* side of West 1st St
- set a precedent for setback of future development projects along West 1st St from Pappas Way to B Street
- eventually create a new boulevard along West 1st St—and even extended to East 1st St—to reinforced access to, and identity of, the South Boston neighborhood





- Shifting the roadway would add 10 ft to West 1st St south sidewalk for street trees, seating, and improved access for pedestrians, wheelchairs, strollers, and a bicycle path

- The northern boundary and identity of the South Boston residential neighborhood would be further enhanced by extending the widening of the street corridor and shifting the roadway north from West 1st St to East 1st St, continuing to Farragut Rd and Evans Field, and may offer a route for a new Bus Rapid Transit Line to serve South Boston

2 A New Neighborhood Park for South Boston

LC.02

Phase 1 development consists of a fee simple lot owned by Oxford Properties/ Pappas Enterprises (***Fig. H***, in yellow), and two separate parcels of land leased by Massport (in gray).

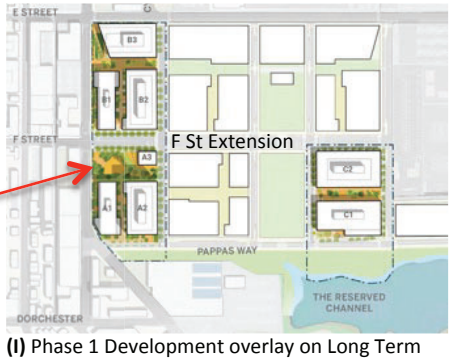
The master plan extends F Street as a gateway into the complex where the fee simple lot is located east of F St Extension, and wrapped around by Massport property. A neighborhood park and pavilion (***Figure I***) are proposed in the gap between the fee simple plot and F St Extension.

A more advantageous configuration would include swapping equivalent land between the property owners and Massport that would relocate the fee simple plot to the eastern edge of F St Extension ***(Figure J)***

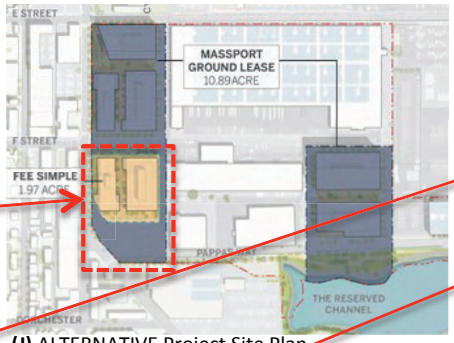
Phase 1 buildings would then help to bracket F Street Extension to frame the gateway into the complex ***(Figure K)***.



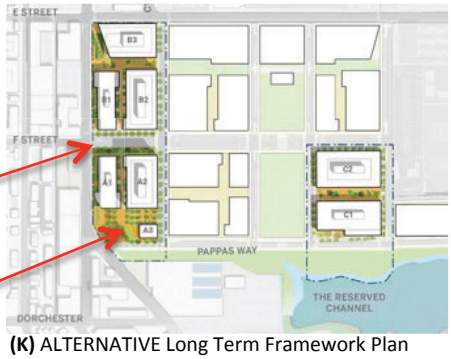
(H) Project Site Plan, 4/22/24 Public Presentation, page 77



(I) Phase 1 Development overlay on Long Term Framework Plan, 4/22/24 Presentation, page 80



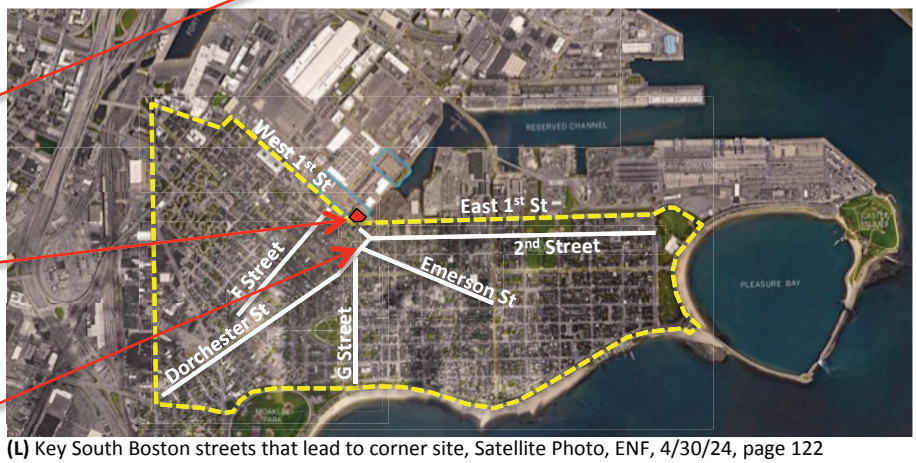
(J) ALTERNATIVE Project Site Plan



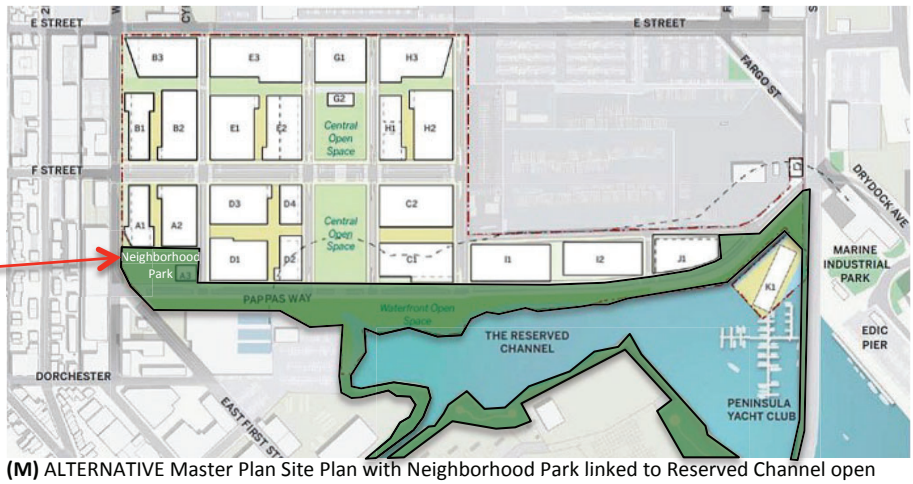
(K) ALTERNATIVE Long Term Framework Plan

ALTERNATIVE Park Location —

- The land swap would move the neighborhood park and pavilion towards Pappas Way to create a larger park ***(Figure K)***
- The park would be closer to the geographical center of the South Boston neighborhood (dash line in yellow) ***(Figure L)***
- The park would be in closer proximity to key streets from the neighborhood that would lead to the park ***(Figure L)***
- The park would be more attractive for use by residents, children, and elderly than an open space that is more identified with a large predominantly commercial laboratory complex
- The park would be connected to, and enjoy a direct relationship with, the Reserved Channel open space network ***(Figure M)***
- The park would expand the natural buffer against rising seas, storm surge, and environmental effects due to climate change



(L) Key South Boston streets that lead to corner site, Satellite Photo, ENF, 4/30/24, page 122

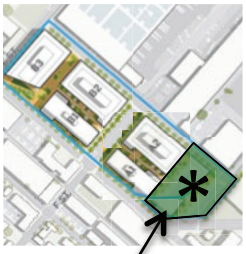


(M) ALTERNATIVE Master Plan Site Plan with Neighborhood Park linked to Reserved Channel open space network, ENF base plan, 4/30/24, page 74

Advantages of Locating A Neighborhood Park at West 1st St and Pappas Way



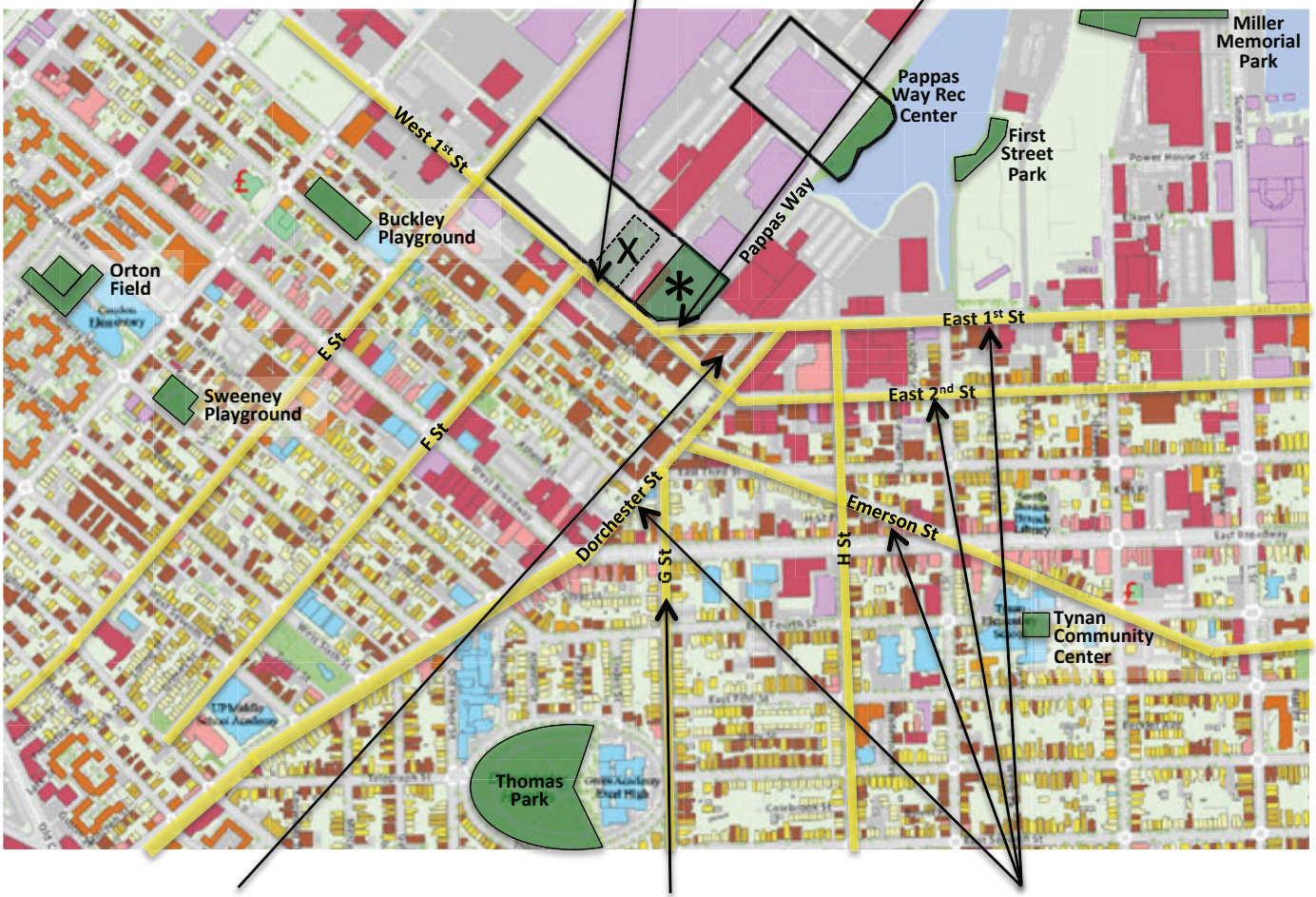
The proposed park would be flanked by tall residential and lab buildings and would be in shade in early AM.



The alternative park would face existing low residential buildings and enjoy significant early AM and PM sunlight.

X The site and size of the proposed Neighborhood Park in the master plan would be located at West 1st Street and F Street where it would face existing or vacant industrial buildings that may remain for an unknown period

✱ The Alternative Neighborhood Park would be located at the intersection of West 1st St, East 1st St, and Pappas Way, larger in size, face many existing low residential buildings, and more accessible from multiple residential streets



- The alternative park location would be oriented towards the southeastern half of South Boston that has fewer neighborhood parks than the southwestern half
- The alternative park would be physically located where the street grid changes direction between the eastern and western halves of South Boston, and would represent a more geographical and symbolic central location for residents from both halves of South Boston to assemble and use as a community center than the proposed park site
- The alternative park location would be more directly accessible than the proposed park site from key streets of the South Boston Neighborhood, including West 1st Street, F Street, Dorchester Street, G Street, H Street, Emerson Street, East 2nd Street, and East 1st Street

3 A Vision for Reserved Channel Park

LC.03

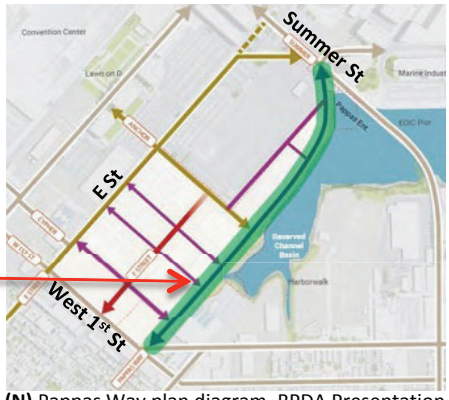
Although the master plan proposes to enhance the pedestrian corridor along Pappas Way, it also proposes to continue using the road to accommodate north-south traffic as part of the project's overall traffic network, including the addition of 4 new east-west lanes of traffic between Pappas Way and E Street ***(Fig. N).***

The estimated overall traffic volume of 66,000 daily trips *(See **ENF**, 4/30/24, page 43)* and multiple turning vehicles raise concerns for pedestrian safety at Pappas Ways' total of 6 intersections.

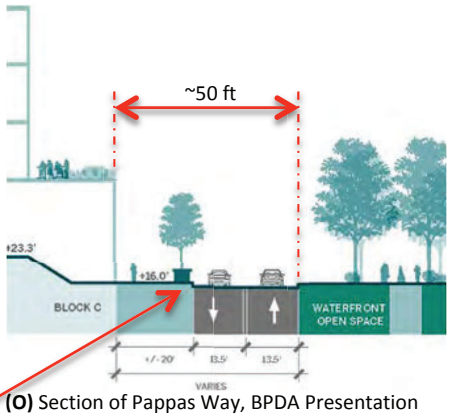
Transforming Pappas Way to An Emerald Necklace —

- Traffic lanes and a wide sidewalk would create a potentially hazardous crossing for pedestrians to access activities, shops, and restaurants from the waterfront ***(Figure O)***
- Pappas Way is recognized as a significant gap between South Boston and the Seaport District, especially to the MBTA Silver Line ***(Figure P)***
- Pappas Way would be a better pedestrian corridor if north-south traffic would be relocated to F Street Extension, and where all 4 new east-west streets terminate. ***(Figure Q)***

  The result would help to maximize pedestrian safety along Pappas Way, enhance Reserved Channel Park, and create a larger landscape park for the immediate neighborhood and South Boston
- Waterfront pedestrian spaces and activities are more attractive and successful when traffic lanes are NOT adjacent to the waterfront park and paths ***(Figures R & S)***
- Concerns about parks and landscape built and covering over existing utilities can be accommodated by careful and creative design and engineering as demonstrated in both urban and natural examples ***(Figures T & U)***



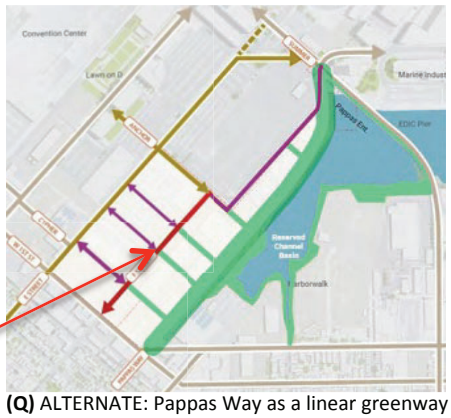
(N) Pappas Way plan diagram, BPDA Presentation 5/8/24, page 55



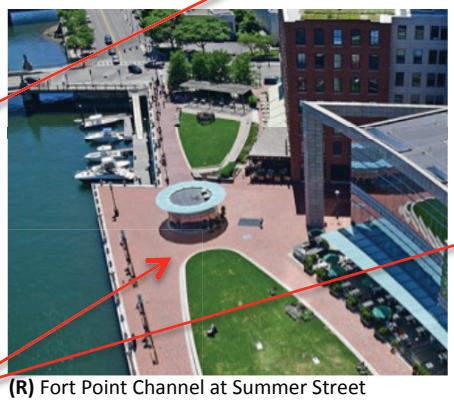
(O) Section of Pappas Way, BPDA Presentation 5/8/24, page 55



(P) Connectivity Gap diagram, BPDA Presentation 5/8/24, page 44



(Q) ALTERNATE: Pappas Way as a linear greenway would enhance Reserved Channel Park



(R) Fort Point Channel at Summer Street



(S) Harborwalk separated from Surface Road traffic by buildings



(T) Peck Slip Park, New York NY, former streets with an easement over an existing sewer line



(U) Storm King State Park, Cornwall-On-Hudson NY with easement over an underground gas line

Civic Benefits of Pappas Way as a Greenway

The typical existing width of Pappas Way between current buildings, and between buildings and the waterfront concrete seawall is ~83 feet.

The master plan proposes broad sidewalks in front of future buildings facing the waterfront and maintaining a 2-lane roadway along Pappas Way (See ***Fig O***, page 6) of ~50 feet.

Pedestrians on the waterfront greenway would be required to cross the vehicular road to reach and use street-level activities, restaurants, shops, and public services.

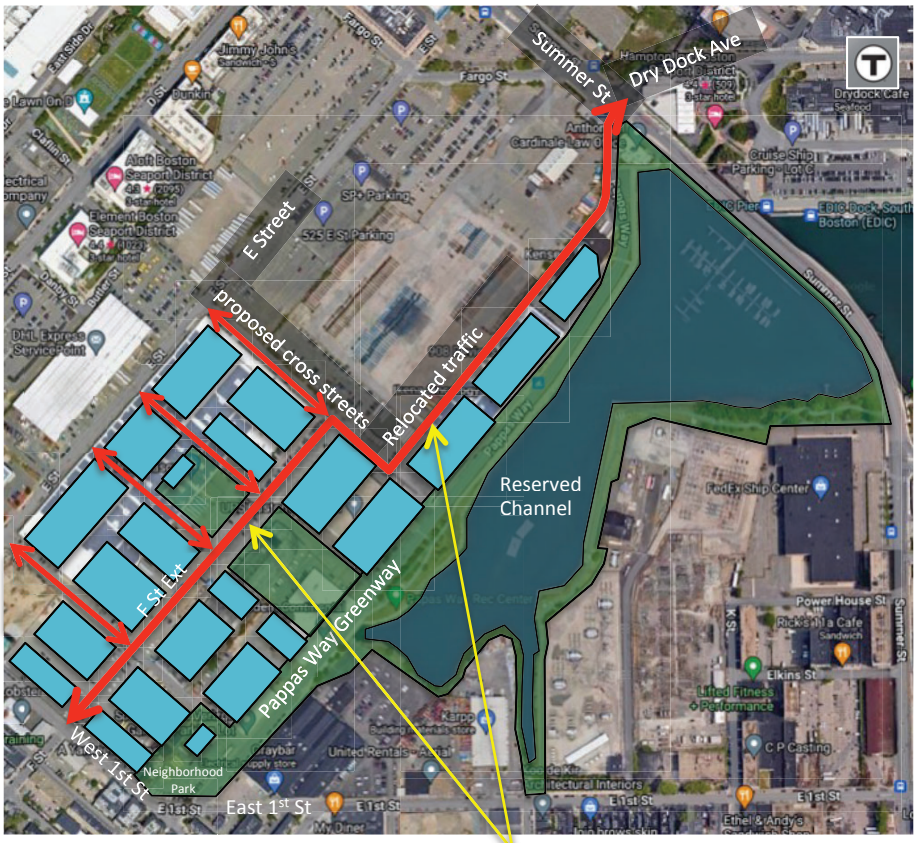


Partial Google satellite photo at 645 Summer St



Street-level photo of Pappas Way at 645 Summer St, looking north, 5/5/24



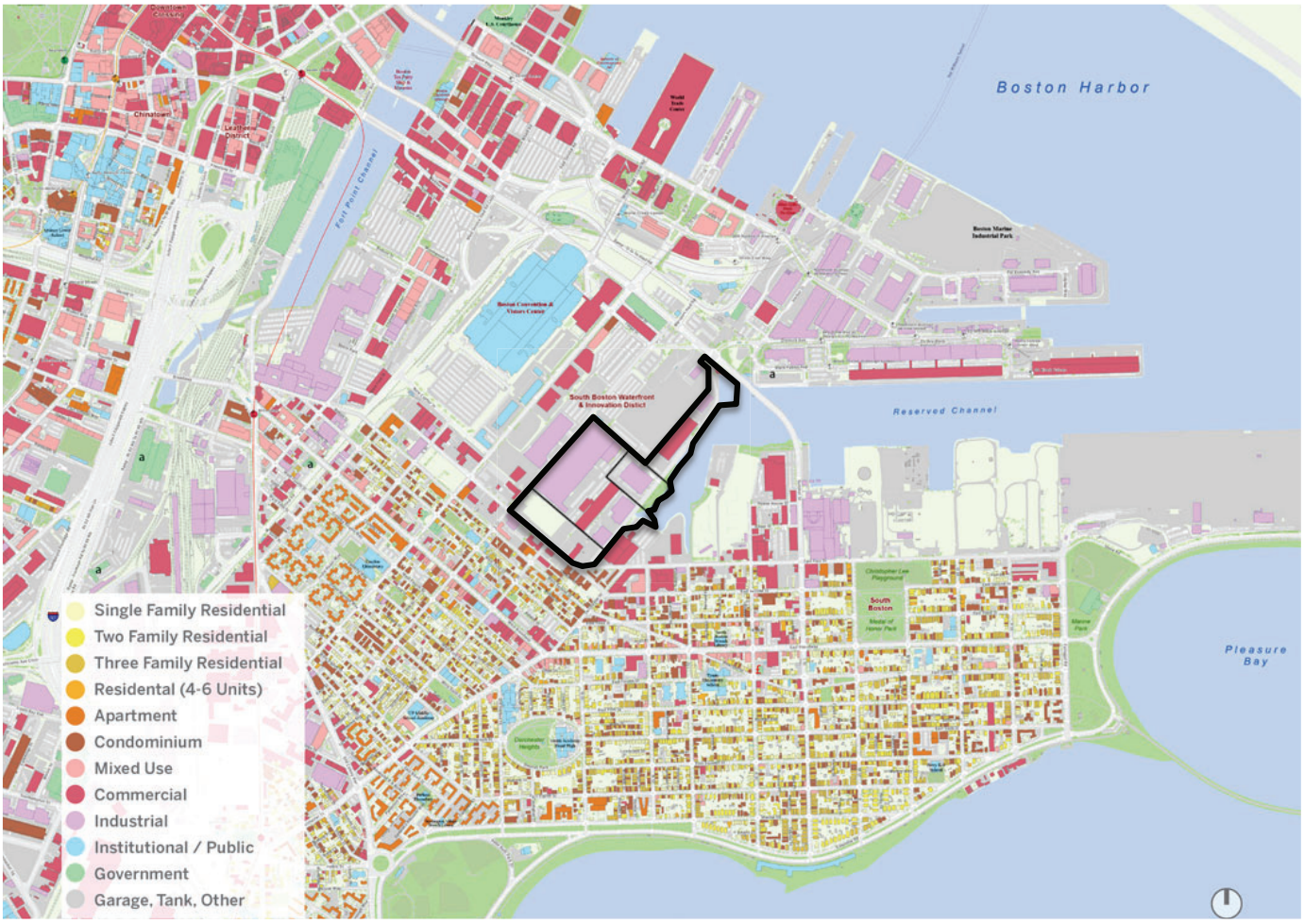


- The master plan would retain Pappas Way as a busy vehicular street between new development and Reserved Channel Park, and introduce 4 new cross-streets with traffic from E Street—a major arterial road—that would create potentially hazardous intersections for pedestrians along Pappas Way

- Relocating the traffic from Pappas Way to F Street Extension would: • increase pedestrian safety along Reserved Channel Park, • improve street-level access to commercial and pedestrian activities along the waterfront, and • create a broad linear greenway along the Reserved Channel—instead of a narrow pedestrian path—between West 1st St/South Boston and Summer St/Seaport
- Existing complex vehicular intersections at West 1st St/Pappas Way/East 1st St and Summer St/Pappas Way/Dry Dock Ave would be simplified, and pedestrian/bicycle connections to the Silver Line would be more generous, attractive, and safer, especially at night and during inclement weather

4 Conclusion

LC.04



Although development components cannot be pre-determined beyond Phase 1 for the next 20- to 30-years, some attractive and desirable infrastructure elements can—if not, should—be implemented to establish foundations to guide later phases, such as widening West 1st St and East 1st St, locating the proposed neighborhood park, and transforming Pappas Way to a generous linear greenway to significantly enhance Reserved Channel Park.

All of the above recommendations are not merely design aspirations but legitimately fall under environmental justice policies, beginning with: "The people shall have the right to…the natural, scenic, historic, and esthetic qualities of their environment."

It is incumbent for stakeholders on all sides to not only mutually agreed on fulfilling baseline and regulatory frameworks that have been established for the site, but also take a bold initiative to reach for the highest common denominator to benefit all who live near, work in, and visit the neighborhood, and integrating the work to address the need for housing, including affordable housing, additional convenient public transportation services that many in the neighborhood feel are inadequate and frustrating, and larger planning issues surrounding the project site that BPDA informed the CAC is not charged to discuss despite our interest and enquiries.



Lawrence A. Chan *FAIA Emeritus*

BACKGROUND

Forty-eight years of professional experience in architecture and urban design, including 40+ years in private practice in Boston on numerous projects for the City of Boston, the Commonwealth of Massachusetts, and other public waterfronts, such as: • original master plan for the eventual Rose Kennedy Greenway for the BRA (1990), • design and construction of the City Hall Plaza Community Arcade for BRA and BPF (built 2001, demolished 2020), • Boston Seaport Master Plan for Massport (2003), • design of Logan Airport General Aviation Facility for Massport (built 2006), • UMass Boston Campus Master Plan for DCAMM (2009) that has been guiding ongoing construction since 2010, and • expansion and redesign of the one-mile long Bund Waterfront Park for the Shanghai Municipal Urban Planning Administration Bureau (built 2010).

Past public service on other community advisory committees includes: • Growth Management Advisory Board for the Maryland-National Capital Park and Planning Commission in Silver Spring MD (1990-1992), and • Comprehensive Plan Committee for the Town of Brookline MA (2000-2004).

LAWRENCE A. CHAN

LC.01 **Implement similar sidewalk design features on the south side of West 1st Street to those proposed on the north side of West 1st Street. [Additional information is provided by Lawrence Chan in the Certificate; For the response to comments section, the comments have been reduced]**

Section 1.2.4.1 (starting on page 1-15) and Section 1.2.5 (starting on page 1-25) provide information on the proposed sidewalk modifications along West First Street on the Master Plan Site which has been modified since the ENF to allow for more pedestrian and bicyclist space, and provide additional space for owners on the southern side of West First Street to make changes to the streetscape as their properties are redeveloped.

LC.02 **Swap equivalent land between the property owners and Massport to relocate the fee simple lot so as to move the neighborhood park and pavilion towards Pappas Way to create a larger park. [Additional information is provided by Lawrence Chan in the Certificate; For the response to comments section, the comments have been reduced]**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A.

LC.03 **Relocate the Pappas Way traffic to the F Street extension to create to maximize the Reserved Channel Park. [Additional information is provided by Lawrence Chan in the Certificate; For the response to comments section, the comments have been reduced]**

In the full-build condition, Pappas Way will divert to the new F Street on the north side of Block A, allowing for the southern portion of Pappas Way to be closed and converted into a new open space.

LC.04 **Although development components cannot be predetermined beyond Phase 1 for the next 20- to 30-years, some attractive and desirable infrastructure elements can— if not, should—be implemented to establish foundations to guide later phases, such as widening West 1st St and East 1st St, locating the proposed neighborhood park, and transforming Pappas Way to a generous linear greenway to significantly enhance Reserved Channel Park. [Additional information is provided by Lawrence Chan in the Certificate; For the response to comments section, the comments have been reduced]**

The Proponent shares, appreciates and acknowledges the importance of establishing foundational infrastructure to guide future phases. Sections 1.2.3 (starting on page 1-3) and 1.2.4 (starting on page 1-5) discuss measures that support long-term goals, such as generous setbacks along West First Street, improved pedestrian and bicycle accommodations, and the proposed conversion of the southern portion of Pappas Way into open space in the full-build condition. These early moves and stated intentions are

intended to support a safer, greener, and more connected West/East First Street edge and to set up a framework that later phases can build upon.

From: Hargens, Andrew
To: Loveluck, Juan; Stephens, Nicole; Butler, Thomas
Subject: FW: First street project
Date: Monday, June 3, 2024 3:13:12 PM

From: darrin brack <darrinbrack@yahoo.com>
Sent: Monday, June 3, 2024 2:33 PM
To: Hargens, Andrew <AHargens@massport.com>
Subject: First street project

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello, my name is Darrin Brack and I am a member of the CAC on the project. I just wanted to let you know that I am in full support of this project seeing as how many Union jobs this would bring to each local in the city. With that being said the sidewalk problem on first street has gone on long enough and I am glad it is going to be dealt with accordingly because that has been an issue between parking and pedestrians for years now. Thank you and have a great day. DB.01
Darrin Brack

Sent from Yahoo Mail for iPhone

The information contained in this communication, including any attachments, is confidential and is intended only for the use of the recipient(s) named above. If the reader of this message is not an intended recipient, you are notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you receive this communication in error, please notify the sender immediately, and delete the communication, any attachments, and all copies.

DARRIN BRACK

DB.01 **The sidewalk problem on first street has gone on long enough and I am glad it is going to be dealt with accordingly because that has been an issue between parking and pedestrians for years now.**

The proposed buildings along West First Street have been set back approximately 35 feet from the property line, beyond which dedicated bike lanes and a parking lane serve to provide an additional 15 feet of separation from the vehicular travel way. The generous setback within the property boundary is planned to provide a furnishing zone, an 8-foot sidewalk, and expansive landscape area along the Master Plan Project's frontage. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

From: Hargens, Andrew
To: Loveluck, Juan; Stephens, Nicole; Butler, Thomas; Coppola, Alaina
Subject: FW: Pappas Project
Date: Monday, June 3, 2024 9:37:39 AM

FYI...

From: Ellie <efk51@aol.com>
Sent: Monday, June 3, 2024 9:13 AM
To: Hargens, Andrew <AHargens@massport.com>
Subject: Pappas Project

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Andrew

I'm writing in reference to the Pappas Project that is getting underway in my neighborhood. I believe that they are on the right path, I would prefer the taller of the buildings be toward Summer Street and not First Street. I have lived here my whole life, I believe you have the pictures of where I grew up. I would really love to have them (btw). Anyway, much as development can be a headache, it has changed and altered the way this the neighborhood was seen much of my life. People would actually say "you live down there"? Funny, now my old house is worth a million dollars. It has taken me some time to come to this opinion but EFK.01

I now realize it (development) can be ok within reason. This area under discussion is mostly vacant, though we do miss the BAC, and can and should be developed within reason, height and density to the Summer Street side, housing open space, another beautiful Massport Park would be nice, some housing for Seniors who would love to stay in this community on the First Street Side. Oh, and some trees. (Ask Juan) hhaha. EFK.02

If there is anything you'd like to talk to me about I am available any time.

Ellie Kasper

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ELLIE KASPER

EK.01 **I believe that they are on the right path, I would prefer the taller of the buildings be toward Summer Street and not First Street.**

In direct response to her and other neighbors' guidance, the Master Plan Project now places the lowest heights and greatest setbacks along West First Street, with height increasing only as the plan moves toward Summer Street. These revisions are intended to create the clearer neighborhood-to-waterfront transition.

EK.02 **This area under discussion is mostly vacant, though we do miss the BAC, and can and should be developed within reason, height and density to the Summer Street side, housing open space, another beautiful Massport Park would be nice, some housing for Seniors who would love to stay in this community on the First Street Side.**

The Proponent agrees that this largely vacant area can be improved in a way that serves existing residents. Blocks A and B have therefore been redesigned as primarily residential, and while final housing types are still being studied, the team recognizes the value of exploring options that support seniors wishing to remain in the neighborhood. In addition, in the full-build condition, the plan converts the southern portion of Pappas Way into new open space, responding to community requests for a neighborhood-serving park close to West First Street.

From: Hargens, Andrew
To: Loveluck, Juan; Stephens, Nicole; Butler, Thomas
Subject: FW: Support for Reserved Channel Project
Date: Tuesday, June 4, 2024 10:31:08 AM

Why am I getting these letters?

From: jen s <jen.salman@gmail.com>
Sent: Tuesday, June 4, 2024 9:06 AM
To: Hargens, Andrew <AHargens@massport.com>
Subject: Support for Reserved Channel Project

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Good morning Andrew,
I'm writing in support of the Reserved Channel project in South Boston. I live nearby on a small street off E. Second and "I" Streets. I have attended 2 Zoom presentations. Overall I like what I've heard and respect the efforts to listen to our neighborhood to bring an enjoyable space to the community. The impressive amount of Union jobs to construct, along with the hundreds of new jobs upon completion are recognized. I look forward to Phase 1 and will be excited to watch the transformation unfold. JS.01

The Oxford/Pappas are very generous in our neighborhood. I thank them and wish their group much luck moving forward!

Sincerely,
Jen Salman
10 Barnard Pl
South Boston, MA 02127

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JEN SALMAN

JS.01 **I'm writing in support of the Reserved Channel project in South Boston. I live nearby on a small street off E. Second and "I" Streets. I have attended 2 Zoom presentations. Overall I like what I've heard and respect the efforts to listen to our neighborhood to bring an enjoyable space to the community. The impressive amount of Union jobs to construct, along with the hundreds of new jobs upon completion are recognized.**

Thank you for your support.

From: Hargens, Andrew
To: Stephens, Nicole; Loveluck, Juan; Butler, Thomas
Subject: FW: Oxford Pappas Project
Date: Tuesday, June 4, 2024 4:50:59 PM

From: Sharon <cod172@aol.com>
Sent: Tuesday, June 4, 2024 4:32 PM
To: nick.carter@boston.gov; Hargens, Andrew <AHargens@massport.com>
Subject: Oxford Pappas Project

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I live at 323 West 2nd Street and I am a direct abutter to this project. As a life long resident of South Boston, I am in favor of this project. I believe this project will enhance our neighborhood. I am always in favor of park/open space, as well as the proposed trees being planted. I like the idea of new sidewalks that will be widened along First Street. It is dangerous walking there now and I avoid that First Street area when I am out for a walk. The partnership with the Yacht Club is also a plus. SB.01 SB.02

Thank you for considering neighborhood concerns while planning this project.

Sharon Butler-O'Dwyer

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SHARON BUTLER-O'DWYER

SB.01 **As a life long resident of South Boston, I am in favor of this project. I believe this project will enhance our neighborhood. I am always in favor of park/open space, as well as the proposed trees being planted.**

Thank your for your support.

SB.02 **I like the idea of new sidewalks that will be widened along First Street. It is dangerous walking there now and I avoid that First Street area when I am out for a walk.**

The proposed buildings along West First Street have been set back approximately 35 feet from the property line, beyond which dedicated bike lanes and a parking lane serve to provide an additional 15 feet of separation from the vehicular travel way. The generous setback within the property boundary is planned to provide a furnishing zone, an 8-foot sidewalk, and expansive landscape area along the Master Plan Project's frontage. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

From: Levi Reilly
To: nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc: Nick Collins; Ed Flynn
Subject: Reserved Channel Development - ENF/PNF
Date: Wednesday, June 5, 2024 7:06:26 AM

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To whom it may concern,

I am writing as the resident of 52 P Street in South Boston to lend support for the redevelopment of the proposed Reserved Channel development project. We appreciate the opportunity to comment on the ENF/PNF.

My wife and I have a nine-month-old daughter. We visit the parks and playgrounds in the South Boston neighborhood on a daily (sometime twice a day) basis. This community is a wonderful place to raise a family, thanks in no small part to the hard work that Councilor Flynn, Senator Collins and others have done over many years. We look forward to the significant open space that this project will bring to the community. As a real estate professional, I understand that building height is often necessary to subsidize the creation of new open space. We are very supportive of building height in this location as the new buildings are on the south side of 1st street (creating no, or very limited shadows on the existing residential) and because the height will allow for the replacement of the dilapidated buildings that currently occupy the site.

LR.01

LR.02

We also appreciate that the open spaces are spread throughout the project and not all concentrated in one location. The open space along West First Street in particular helps divide the block in two at the midpoint. Without this space, it seems like the proposed buildings would otherwise overwhelm the existing neighborhood.

LR.03

Thank you in advance for your consideration and for the effort that each of you do to make South Boston a great place to raise a family

Levi Reilly
Current Resident of 52 P Street
19-year resident of Boston

LEVI REILLY

LR.01 **We look forward to the significant open space that this project will bring to the community.**

Thank you for your support. The Proponent believes that the new open spaces will be a significant benefit to the South Boston community.

LR.02 **As a real estate professional, I understand that building height is often necessary to subsidize the creation of new open space. We are very supportive of building height in this location as the new buildings are on the south side of 1st street (creating no, or very limited shadows on the existing residential) and because the height will allow for the replacement of the dilapidated buildings that currently occupy the site.**

The design team has continued to find balance between height, open space, and the benefits of the Master Plan Project.

LR.03 **We also appreciate that the open spaces are spread throughout the project and not all concentrated in one location. The open space along West First Street in particular helps divide the block in two at the midpoint. Without this space, it seems like the proposed buildings would otherwise overwhelm the existing neighborhood.**

Although smaller, the proposed open space on West First Street will continue to provide some relief along West First Street and provide much needed open space for the community.

From: Brenna Beck
To: Brenna Beck
Cc: Brenna Beck
Subject: Concerned Neighbor - Reserved Channel Development Project Proposal
Date: Thursday, June 6, 2024 2:16:52 PM

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Good Afternoon,

I hope this email finds you well. I am writing to express my opposition to the Reserved Channel Development Project proposal. I am a resident of 377 West 1st Street and parent to three young children: 10 months, 3 years and 6 years old.

I acknowledge that this large project could potentially benefit the neighborhood, however, I am concerned with the location/heights of the proposed buildings, the careless placement of the green space/park and the lack of parking plans. BB.01

When we moved into this building in February of 2023, we were told that the area owned by the Pappas family was restricted to 3 stories, and any space over 3 stories would not be allowed by the state. Based on my understanding, the proposed buildings and their heights are over 200 feet which is approximately 4 times the height of the building we currently live in. Having an office space across the street of this height with windows that stare into the space I allow my children to play in is extremely concerning. South Boston is a RESIDENTIAL area, there is no need for life science buildings anywhere in this area. Most all of the tenants on this block have young children and having this kind of a building across the street is a large safety concern. BB.02

Is there instead a possibility to put the proposed park on the corner of West 1st and Pappas way to create a safety barrier for the residents of West 1st to the new buildings that are going in? We are grateful to have the walking path on Pappas way and the Harbor Walk a few blocks down so why not add a larger green space along West 1st to keep that area more inviting, open and welcoming to local families? Wouldn't it make more sense to protect the families who live in the area with a green space barrier then have the commercial buildings a block or two in? BB.03

With the addition of more commercial space and over 200 more residents - what is the plan for parking? There is already such limited parking in the area and no access to the area by public transportation. My husband receives at home health care treatment and there is a struggle to find parking for the visiting nurses on every occasion. There is a shortage of parking on West 1st and a limited amount of spaces on Pappas Way for the public to use. Will there be garage space in each of the new buildings with appropriate parking for all residents/commercial use? Will there be lights installed on this already dangerous street where people constantly run through stop signs at the intersection of Pappas way and West 1st? Will we be burdened with another bike lane of unapologetic bikers with no regard for the safety of people driving OR those pushing strollers? The street is already so impacted by the parking spots on either side, the large vehicles passing through (delivery and construction trucks) and the speed traveled on this road. BB.04

Where is the plan for improving safety and transportation concerns in this side of South Boston? Please take into consideration the need for this kind of infrastructure to be thought out with young children in mind - this is where they play, this is where they ride their scooters and bikes and this is where they take walks with family. We live here because we do not want the overly busy and crammed life that families face in the Seaport. We do not want to be surrounded by more unoccupied office space. BB.05

I appreciate you taking the time to read through my thoughts and concerns. I wish there had been more involvement of local families in this decision making process. There are so many small lives that are affected by these decisions. Our community is already at a high risk, please consider making it a safer place for families to live.

Thank you again.

Sincerely,

Brenna Beck

BRENNA BECK

BB.01 **I acknowledge that this large project could potentially benefit the neighborhood, however, I am concerned with the location/heights of the proposed buildings, the careless placement of the green space/park and the lack of parking plans.**

Section 1.2.4 (starting on page 1-5) addresses building heights, design modifications, open space and public realm improvements; the location of open spaces has been determined through input from the community, including the closure of Pappas way from Road 1 to West First Street in the full-build condition to allow for a new open space. Parking and transportation planning are addressed in Chapter 7. Sections 7.5.1.2 (page 7-32) and 7.6.1.3 (page 7-57) include a detailed analysis of proposed parking supply.

BB.02 **Based on my understanding, the proposed buildings and their heights are over 200 feet which is approximately 4 times the height of the building we currently live in. Having an office space across the street of this height with windows that stare into the space I allow my children to play in is extremely concerning. South Boston is a RESIDENTIAL area, there is no need for life science buildings anywhere in this area. Most all of the tenants on this block have young children and having this kind of a building across the street is a large safety concern.**

The Proponent understands that the height of new buildings relative to existing homes can be deeply personal and important. In response to this feedback, the building program along West First Street has been significantly revised: the commercial buildings are no longer located at the neighborhood edge, and the buildings closest to existing homes now have the lowest heights and the greatest setbacks within the Master Plan Project.

Section 1.2.4 (starting on page 1-5) discusses building heights and associated design adjustments which have been made in response to community input.

BB.03 **Is there instead a possibility to put the proposed park on the corner of West 1st and Pappas way to create a safety barrier for the residents of West 1st to the new buildings that are going in? We are grateful to have the walking path on Pappas way and the Harbor Walk a few blocks down so why not add a larger green space along West 1st to keep that area more inviting, open and welcoming to local families? Wouldn't it make more sense to protect the families who live in the area with a green space barrier then have the commercial buildings a block or two in?**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim

improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

BB.04 **With the addition of more commercial space and over 200 more residents - what is the plan for parking? There is already such limited parking in the area and no access to the area by public transportation. My husband receives at home health care treatment and there is a struggle to find parking for the visiting nurses on every occasion. There is a shortage of parking on West 1st and a limited amount of spaces on Pappas Way for the public to use. Will there be garage space in each of the new buildings with appropriate parking for all residents/commercial use? Will there be lights installed on this already dangerous street where people constantly run through stop signs at the intersection of Pappas way and West 1st? Will we be burdened with another bike lane of unapologetic bikers with no regard for the safety of people driving OR those pushing strollers? The street is already so impacted by the parking spots on either side, the large vehicles passing through (delivery and construction trucks) and the speed traveled on this road.**

Section 7.5.1.2 (page 7-32) discusses the Phase 1 Project parking program. Section 7.6.1.5 (page 7-60) discusses proposed street configurations.

BB.05 **Where is the plan for improving safety and transportation concerns in this side of South Boston? Please take into consideration the need for this kind of infrastructure to be thought out with young children in mind - this is where they play, this is where they ride their scooters and bikes and this is where they take walks with family. We live here because we do not want the overly busy and crammed life that families face in the Seaport. We do not want to be surrounded by more unoccupied office space.**

Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including mitigation measures that aim to increase safety.

From: Hargens, Andrew
To: Loveluck, Juan; Stephens, Nicole; Butler, Thomas
Subject: FW: Pappas property
Date: Thursday, June 6, 2024 8:52:13 AM

From: Kathleen Arrigal <kathleenarrigal@gmail.com>
Sent: Thursday, June 6, 2024 7:25 AM
To: Hargens, Andrew <AHargens@massport.com>
Subject: Pappas property

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I fully support this project. I believe it will improve the area and tie it to the residential south Boston. As well as improve and beautify the area KA.01
Sent from my iPhone. Kathleen T Arrigal

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KATHLEEN ARRIGAL

KA.01 **I fully support this project. I believe it will improve the area and tie it to the residential south Boston. As well as improve and beautify the area.**

Thank you for your support.

From: Kirsten McEleney
To: nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc: Nick.Collins@masenate.gov
Subject: Reserved Channel Master Plan - Support
Date: Thursday, June 6, 2024 1:09:53 PM
Attachments: image001.png

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To whom it may concern,

I am writing today as a resident of 899 Congress Street, and a business owner developing the 421 E 6th Street project in South Boston. Below are some comments on the proposed Reserved Channel Development project filings and public materials presented to date.

As someone who lived in South Boston for many years, and who now lives closely to the project in Seaport, I think the proposed project will be a huge improvement over what exists there today, and I am surprised that a new development has not been started in the area sooner. KM.01

Living nearby the water now, it is great to see an emphasis on resiliency and future proofing the project, as this has not been as carefully considered in many new developments in the city. The Basin Loop would be a great addition to the area, and the planned open space will be a great place for families and dog owners to gather. KM.02

As a developer myself, I understand there are trade offs between height and the ability to provide open space and public benefits, all while still making the project financially feasible. The density and scale of the proposed buildings, as well as the location of the open space make sense to me and seem well thought out. KM.03

This is an exciting project with a great mix of uses and I look forward to seeing plans progress.

Thanks for the opportunity to comment.

Kirsten McEleney,

899 Congress Street

Image

Kirsten McEleney
President & CEO
Phone: 781-307-8843
Email: kirsten@km-regroup.com
www.km-regroup.com
Boston, MA

KIRSTEN MCELENEY

KM.01 **As someone who lived in South Boston for many years, and who now lives closely to the project in Seaport, I think the proposed project will be a huge improvement over what exists there today, and I am surprised that a new development has not been started in the area sooner.**

Thank you for your support.

KM.02 **Living nearby the water now, it is great to see an emphasis on resiliency and future proofing the project, as this has not been as carefully considered in many new developments in the city. The Basin Loop would be a great addition to the area, and the planned open space will be a great place for families and dog owners to gather.**

The Master Plan Project continues to include climate resilience as a goal.

The Reserved Channel Basin Loop Harborwalk Project will develop a concept design to complete the Harborwalk loop around the Reserved Channel in South Boston. The project objectives are to ensure that community interests and desires are prioritized in the design process for expanding this area of the Harborwalk, and that future amenities and improvements to public spaces along this waterfront respond to local needs. Funding for the planning of this important project was secured by Senator Collins and Representative Biele as part of the fiscal year 2025 Fair Share Supplemental Budget.

KM.03 **As a developer myself, I understand there are trade offs between height and the ability to provide open space and public benefits, all while still making the project financially feasible. The density and scale of the proposed buildings, as well as the location of the open space make sense to me and seem well thought out.**

Based on feedback from the community, the buildings along West First Street have been moved further from the street, and in the full-build condition, the southern end of Pappas Way will be closed and converted into a new open space.

From: Michael D"Angelo
To: nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc: Ed Flynn; Nick.Collins@masenate.gov; bostonnavigation@gmail.com
Subject: Reserved Channel Master Plan - Support
Date: Thursday, June 6, 2024 10:50:46 AM

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Re: Reserved Channel Development

To Whom it May Concern:

I am writing in full support of the proposed Reserved Channel Development. Thank you for the opportunity to comment on the PNF and what has been presented to date.

I am a long time resident of South Boston. I currently live at 151 P Street. I am also a small business owner located at 840 Summer Street which is within walking distance to the project site.

I attended the last community meeting at the Condon School. The current design and massing seems very appropriate within the context of West First Street. The residential buildings front West First Street which makes a lot of sense. The generous setback provides a much needed improved streetscape from what exists today. I'm hopeful that this project will serve as a template and precedent for future improvements along West First that will be made over time by other developers and / or the City of Boston. I also appreciate that the open space along West First breaks up the building massing and provides green space for the adjacent community. As someone with small children, I can say this is critical for this immediate area. MD.01

From an environmental perspective, the site plan speaks for itself. The existing condition is nearly all impervious surface. The proponent is making massive improvements to the site in terms of sustainability, resiliency, creating tree canopy, and improving stormwater quality.

My family and my employees are excited for the opportunity to be able to walk through this new park-like development along the water. This will be a vital connection for South Boston residents to walk to Summer Street and beyond. We're also really looking forward to seeing what types of retail may come over time.

Thank you,

Michael D'Angelo

Michael D'Angelo, Principal

Michael D'Angelo Landscape Architecture LLC
840 Summer Street | Suite 201A | Boston, MA

MICHAEL D'ANGELO

MD.01 Support

Thank you for your support.

From:	Michael Iovanna Jr.
To:	nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc:	Ed.Flynn@boston.gov; Nick.Collins@masenate.gov
Subject:	Reserved Channel Master Plan
Date:	Thursday, June 6, 2024 2:12:17 PM

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To Whom it may concern,

As a resident of 225 Dorchester Street, I am writing today to share my support on the proposed Reserved Channel development project. I appreciate the opportunity to comment on the project, and below are my thoughts on materials presented publicly as well as the the ENF and PNF that have been filed with the City and State.

This is a very exciting project for South Boston and will bring much needed improvements and benefits to the area. Having previously lived in the Seaport, and watching that neighborhood change over time, I think this project is a great opportunity for change, and furthermore to provide greater accessibility and diversity to the area. I pass through the site nearly every day and believe the proposed mix of uses, opportunity for new retail, and significant new open space will entirely transform the area.

Generally, I think many developers take priority in profits and don't put enough thought or investment towards open space and benefits for the public. The planned open space for First Street is a welcomed addition to the neighborhood and has been thoughtfully placed to provide a careful balance between density and open space. I think with the open space and benefits that have been offered, the proposed density and scale of the project makes perfect sense. The height of the buildings seems very reasonable and is a more than fair trade for the benefits the entire community of South Boston will benefit from.

In terms of transportation access through the site today, I frequently travel along Pappas Way to arrive home and to get to the Seaport, as well as downtown. Although I'd like this road to remain open to vehicles, I think it would be great if F Street could continue all the way to Summer to allow Pappas Way to be less trafficked and void of trucks. ML.01

Thank you in advance for your consideration and I look forward to future public meetings and presentations on the project.

Michael Iovanna,

225 Dorchester Street, South Boston

MICHAEL LOVANNA

ML.01 **In terms of transportation access through the site today, I frequently travel along Pappas Way to arrive home and to get to the Seaport, as well as downtown. Although I'd like this road to remain open to vehicles, I think it would be great if F Street could continue all the way to Summer to allow Pappas Way to be less trafficked and void of trucks.**

The Proponent acknowledges the importance of maintaining vehicular access for residents who rely on Pappas Way today. Both Massport and the Proponent share a long-term vision for extending F Street north toward Summer Street, which would provide an alternative north–south connection and help reduce traffic volumes currently using Pappas Way, including truck traffic. When the Master Plan Project is complete, Pappas Way will no longer connect West First Street to Summer Street; the main north-south connection with the F Street.

The Master Plan Project has been structured to preserve the ability to implement this extension as broader area planning advances. Future decisions regarding traffic patterns along Pappas Way will be made in coordination with Massport and the City.

From: Miri Goldfield
To: nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc: Ed.Flynn@boston.gov; Nick.Collins@masenate.gov
Subject: Reserved Channel Master Plan
Date: Thursday, June 6, 2024 3:32:01 PM

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To Whom It May Concern:

I am writing today as a resident of 225 Dorchester Street to share my thoughts on the proposed Reserved Channel Development project. Thanks for the opportunity to comment on the public materials presented to-date, in addition to the public filings with the City and State.

Having little reason to visit the project site today, with the exception of utilizing the UPS drop off, the current site is underutilized and would greatly benefit from being redeveloped. I think there is a great opportunity for open space, especially the proposed park along First Street. As a dog owner, I would greatly appreciate a new dog park to frequent in the neighborhood especially one that will feature new and local retail. MG.01

I also think there is a significant opportunity for transportation improvements in the area, i.e, direct connection between South Boston and Seaport. Looking forward to learning more about what potential new roadways and connections can benefit the surrounding neighborhoods. MG.02

Thank you for your consideration.

Miri Goldfield,
225 Dorchester Street

MIRI GOLDFIELD

MG.01 **Having little reason to visit the project site today, with the exception of utilizing the UPS drop off, the current site is underutilized and would greatly benefit from being redeveloped. I think there is a great opportunity for open space, especially the proposed park along First Street. As a dog owner, I would greatly appreciate a new dog park to frequent in the neighborhood especially one that will feature new and local retail.**

The Proponent and the Master Plan Project team have their fair share of dog owning families and share the sentiment that a dog park would be a valuable addition. The currently maintained open space is a great option currently and as the team works with the community to further design the open spaces they will be sure to include this programming element.

MG.02 **I also think there is a significant opportunity for transportation improvements in the area, i.e, direct connection between South Boston and Seaport. Looking forward to learning more about what potential new roadways and connections can benefit the surrounding neighborhoods.**

Sections 7.5.1.1 (starting on page 7-31), 7.5.1.4 (starting on page 7-36), 7.6.1.1 (starting on page 7-54), and 7.6.1.5 (page 7-60) discuss the new connections created by the Master Plan Project. Section 7.6 discusses additional mitigation measures.

From: Spencer Beebe
To: nick.carter@boston.gov; Strysky, Alexander (EEA)
Cc: ed.flynn@boston.gov; nick.collins@masenate.gov
Subject: Reserved Channel Development
Date: Thursday, June 6, 2024 11:22:28 AM

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To whom it may concern,

I am writing to you today as a resident of South Boston at 218 W 8th Street and in full support of the Reserved Channel Development. SB.01

I have been living and working in South Boston for a year and I am very excited by this development. I frequently visit the seaport and downtown areas, walking by the proposed site. The improvements to open space and building scale along The Reserved Channel, in my opinion, will help to bridge the pedestrian circulation gap to the seaport by creating a safer and more pedestrian oriented route.

Thank you for your consideration,

Spencer Beebe
218 W 8th St
Unit 2
South Boston, MA 02127

--

Spencer Beebe, PLA

Project Manager

Michael D'Angelo Landscape Architecture LLC

840 Summer Street | Suite 201A | Boston, MA

119C Griswold Street | Suite 209 | Glastonbury, CT

spencer@m-d-l-a.com | 860.573.3536

m-d-l-a.com | Instagram

SPENCER BEEBE

SB.01 **I have been living and working in South Boston for a year and I am very excited by this development. I frequently visit the seaport and downtown areas, walking by the proposed site. The improvements to open space and building scale along The Reserved Channel, in my opinion, will help to bridge the pedestrian circulation gap to the seaport by creating a safer and more pedestrian oriented route.**

Thank you for your support.

Conservation
Law Foundation

For a thriving New England

CLF Massachusetts 62 Summer Street
Boston, MA 02110
P: 617.350.0990
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June 7, 2024

Via electronic mail: alexander.strysky@mass.gov

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Attn: MEPA Office, Alexander Strysky
Boston, MA 02114

Re: Written Comments on Reserved Channel Master Plan Development
Environmental Notification Form, EEA #16802

Dear Secretary Tepper:

Conservation Law Foundation ("CLF") appreciates the opportunity to comment on Oxford Properties Group and Pappas Enterprises' (together, "the Proponents") environmental notification form ("ENF") for Phase I and the Master Plan for the Reserved Channel Master Plan Development. CLF protects New England's environment for the benefit of all people and uses the law, science, and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy. CLF's advocacy includes participation in proceedings that impact equitable access to and climate resilience of the Commonwealth's tidelands. CLF comments here to raise questions and request information regarding climate resilience, Chapter 91 compliance, and community engagement that the Proponents should address in their draft environmental impact report ("DEIR").

Resilience

The Proponents' resilience strategy centers around elevating the site to a minimum of 19.1 feet BCB. In combination with target finished flood elevations of 23.3 feet BCB and 24.3 feet BCB for non-residential and residential buildings, respectively, this plan will likely provide adequate flood protection for the life of the project, according to the best available science. In order to ensure the public benefits and sustainability of this project, however, the Proponents should provide more information about how their resilience plan will affect neighboring properties. Specifically, the Proponents should take care to address the potential for adverse effects on adjoining land in their forthcoming coastal engineering analysis, and include that information in the DEIR. CLF.01

Regarding stormwater management strategy, CLF appreciates the Proponents' intention to incorporate green infrastructure elements. But while it is commendable that the Proponents propose to reduce the amount of impervious surfaces on the site today, this project also presents an opportunity to realize the many other benefits green infrastructure offers over traditional stormwater management infrastructure—for example, reduction of the urban heat island through vegetated ground cover, improved human comfort through planting of shade trees, etc. CLF encourages the Proponents to use green infrastructure to manage stormwater to the maximum extent possible in order to take advantage of these other opportunities. CLF.02

Chapter 91

The Proponents should include in the DEIR a number of pieces of information that will help clarify the project's compliance with Chapter 91. For instance, the Proponents should provide the following:

- A figure showing specifically which areas of the project are Commonwealth tidelands, private tidelands, and landlocked tidelands. While the ENF provides some of this information, it is spread across multiple figures and lacks some of the detail needed to fully understand the site's Chapter 91 implications. Moreover, the current filing primarily includes Chapter 91 information about Phase I—if the master plan is also under consideration at this time, however, the full site's Chapter 91 concerns should be discussed. CLF.03

- A more complete description of how the Proponent intends to use the Chapter 91 jurisdictional areas, both in Phase I and project-wide. This should include information, including graphical representation, about the amount of open space as a percentage of jurisdictional tidelands (i.e., compliance with 310 CMR 9.51(3)(d), addressing open space requirements on tidelands). CLF.04

- An analysis of why the Proponents believe the proposed hotel over flowed tidelands (Building K1) qualifies as a water-dependent use such that the Proponents answered "no" under the Wetlands, Waterways, and Tidelands Section, III.D at page 30, asking if the project "include[s] new non-water-dependent uses located over flowed tidelands." The Proponents should bear in mind in this analysis whether the hotel as planned meets the requirements of 310 CMR 9.32, Categorical Restrictions on Fill and Structures, and should also explain whether and how they believe any Massport MOU with the Massachusetts Department of Environmental Protection affects these requirements at this location (as well as how any MOUs with Massport impact Chapter 91 obligations on the site generally). CLF.05

- A clarification of the information provided at III.D of the Wetlands, Waterways, and Tidelands Section at page 30—specifically, where the form asks the Proponents, "For non-water-dependent use projects, indicate the following." The Proponents then list, "Phase 1: 2.48 acres, Master Plan: 13.71 acres," without stating what those numbers describe (e.g., a combination of all types of tidelands, Commonwealth tidelands only, etc.). CLF.06

- Figure X, which the Proponents mention in the tidelands analysis of its Public Benefits Determination section, but which is not included in the filing. CLF.07

Public Engagement

CLF appreciates the information included in the ENF regarding the Proponents' efforts around community engagement leading up to this filing. That said, it would be helpful to know how receptive and engaged the affected community has been in response to this outreach. For example, at page 59, the Proponents state that they have held over 50 meetings, workshops, events, and activities in the community, including five community-centered charettes. In their DEIR, the Proponents should elaborate on the effectiveness of this work, including by stating approximately how many community members have participated in the planning process as a result of the Proponents' community engagement, as well as other demographic information, which, if available, would help ascertain how diverse an array of input has informed the process so far. CLF.08

CLF also notes with concern information it has received indicating failures to comply with the special review procedure ("SRP"). For one, CLF understands that members of the Community Advisory Committee ("CAC") have not been consulted about meeting scheduling, as the SRP promises. SRP Certificate, EEA #16802, at 3. The SRP also states that the CAC was to meet before the formal review process began, but CLF's understanding is that no such meeting took place. *Id.* at 4 ("It is envisioned that the CAC will meet in advance of and throughout the formal review process."). If the CAC is to perform its function adequately, it is important that the Proponents (and the municipal and state agencies leading these proceedings) abide by the standards they have set for themselves—even small details can make a significant difference in garnering or eroding community trust and support. CLF.09

Conclusion

As this project is both long-term and at an early planning stage, much additional detail is needed in order ensure that the Reserved Channel development serves the community, remains resilience in the face of climate impacts, and complies with Chapter 91. CLF looks forward to continuing to engage with this project as it advances.

Sincerely,



Margaret L. Sullivan
Senior Attorney
Conservation Law Foundation

CONSERVATION LAW FOUNDATION

CLF.01 **In order to ensure the public benefits and sustainability of this project, however, the Proponents should provide more information about how their resilience plan will affect neighboring properties. Specifically, the Proponents should take care to address the potential for adverse effects on adjoining land in their forthcoming coastal engineering analysis, and include that information in the DEIR.**

Section 10.4 (starting on page 10-17) discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F. The analysis shows that the flood extent and depth in the surrounding area during potential future storm events will not be impacted by the increased elevation of the Master Plan Site.

CLF.02 **CLF encourages the Proponents to use green infrastructure to manage stormwater to the maximum extent possible in order to take advantage of these other opportunities.**

Section 6.3 (starting on page 6-7) discusses low impact design measures at length. The Proponent agrees that green infrastructure provides numerous benefits and will continue to evaluate incorporation of such measures into the Master Plan Project.

CLF.03 **[The Proponent should include the following Ch. 91 compliance] A figure showing specifically which areas of the project are Commonwealth tidelands, private tidelands, and landlocked tidelands. While the ENF provides some of this information, it is spread across multiple figures and lacks some of the detail needed to fully understand the site's Chapter 91 implications. Moreover, the current filing primarily includes Chapter 91 information about Phase I—if the master plan is also under consideration at this time, however, the full site's Chapter 91 concerns should be discussed.**

Tidelands are depicted on Figures 5-1 and 5-2 (pages 5-2 and 5-5). As defined at 310 CM R 9.02, the portions of Block K landward of the 100-rod line are categorized as Private Tidelands. The remainder of the Master Plan Site is categorized as Commonwealth Tidelands. The anticipated uses of those tidelands are described in Chapter 5.

Block C, which is included in Phase 1, will be compliant with Chapter 91. A Waterfront Development Plan is anticipated for Blocks I and J.

CLF.04 **[The Proponent should include the following Ch. 91 compliance] A more complete description of how the Proponent intends to use the Chapter 91 jurisdictional areas, both in Phase I and project-wide. This should include information, including graphical representation, about the amount of open space as a percentage of jurisdictional tidelands (i.e., compliance with 310 CMR 9.51(3)(d), addressing open space requirements on tidelands).**

The Phase 1 Project is described in Section 5.4 (starting on page 5-4), including compliance with Chapter 91 regulatory standards (see Table 5-1 [page 5-4]).

The long-term vision for the Master Plan Project includes new and diverse open spaces, multimodal connections, resilient infrastructure, and public benefits for both the new residents, visitors, and tenants, as well as surrounding neighbors. Within 13.71 acres of Chapter 91 jurisdiction, more than eight acres of open space are planned, including approximately 1.8 acres of open space to be licensed during Phase 1. At this time, it is anticipated that the area of open space within Chapter 91 jurisdiction will exceed the combined area of nonwater-dependent building footprint, in accordance with 310 CMR 9.51(3)9(d). However, the exact area, activation, and amenitization of the open space has not yet been determined. Please see Figure 1-7 (page 1-17) for additional detail regarding anticipated open space to be developed as part of the Master Plan Project.

CLF.05 **[The Proponent should include the following Ch. 91 compliance] An analysis of why the Proponents believe the proposed hotel over flowed tidelands (Building K1) qualifies as a water-dependent use such that the Proponents answered "no" under the Wetlands, Waterways, and Tidelands Section, III.D at page 30, asking if the project "include[s] new non-water-dependent uses located over flowed tidelands." The Proponents should bear in mind in this analysis whether the hotel as planned meets the requirements of 310 CMR 9.32, Categorical Restrictions on Fill and Structures, and should also explain whether and how they believe any Massport MOU with the Massachusetts Department of Environmental Protection affects these requirements at this location (as well as how any MOUs with Massport impact Chapter 91 obligations on the site generally).**

As noted in Section 5.3 (page 5-3), at this time the Proponent is evaluating the appropriate regulatory pathway for the redevelopment of Block K.

CLF.06 **[The Proponent should include the following Ch. 91 compliance] A clarification of the information provided at III.D of the Wetlands, Waterways, and Tidelands Section at page 30—specifically, where the form asks the Proponents, "For non-water-dependent use projects, indicate the following." The Proponents then list, "Phase 1: 2.48 acres, Master Plan: 13.71 acres," without stating what those numbers describe (e.g., a combination of all types of tidelands, Commonwealth tidelands only, etc.).**

Although the Master Plan Project will include both water-dependent and nonwater-dependent uses, the Proponent anticipates that the Master Plan Project will be reviewed by the Waterways Project as nonwater-dependent. Accordingly, filled tidelands subject to licensing within the Master Plan Site have been calculated as nonwater-dependent.

CLF.07 **[The Proponent should include the following Ch. 91 compliance] Figure X, which the Proponents mention in the tidelands analysis of its Public Benefits Determination section, but which is not included in the filing.**

Please see Figures 5-1 and 5-2 (pages 5-2 and 5-5).

CLF.08 **In their DEIR, the Proponents should elaborate on the effectiveness of this work, including by stating approximately how many community members have participated in the planning process as a result of the Proponents' community engagement, as well as other demographic information, which, if available, would help ascertain how diverse an array of input has informed the process so far.**

Although formal demographic data were not collected, the Proponent's Public Involvement Plan has ensured that outreach materials during the MEPA review process were translated into multiple languages, distributed across EJ neighborhoods, and disseminated through community organizations. This included multilingual flyers, interpreter availability, and direct engagement with local civic and social service groups, consistent with MEPA's EJ Protocol.

From the filing of the ENF through the preparation of this DEIR, the Proponent has held or participated in four CAC sessions, a three-part public meeting series in 2024, and multiple topic-specific meetings on transportation, resiliency, open space, and urban design. These meetings typically attracted 20–35 participants for CAC sessions and 40–80 participants for larger public meetings.

In addition to formal regulatory meetings, the Proponent has hosted 16 community events on the Master Plan Site since 2021, drawing more than 1,000 attendees and engaging nearly 20 minority- and women-owned local businesses. These events have provided informal but meaningful opportunities for dialogue and feedback on the future of the Master Plan Site.

Additional information about community outreach can be found in Sections 1.6 (starting on page 1-39) and 3.2 (starting on page 3-1).

CLF.09 **CLF also notes with concern information it has received indicating failures to comply with the special review procedure ("SRP"). For one, CLF understands that members of the Community Advisory Committee ("CAC") have not been consulted about meeting scheduling, as the SRP promises. SRP Certificate, EEA #16802, at 3. The SRP also states that the CAC was to meet before the formal review process began, but CLF's understanding is that no such meeting took place. Id. at 4 ("It is envisioned that the CAC will meet in advance of and throughout the formal review process."). If the CAC is to perform its function adequately, it is important that the Proponents (and the municipal and state agencies leading these proceedings) abide by the standards they have set for themselves—even small details can make a significant difference in garnering or eroding community trust and support.**

The Proponent continues to work with the MEPA office and Boston Planning Department regarding communication with the CAC and community, and uses the Public Involvement

Plan ("PIP") and Special Review Procedure as guidance. The Proponent believes in community feedback, having started conversations with members of the community years in advance of a formal filing with the MEPA office and City of Boston. Continued conversations will occur throughout the life of the Master Plan Project's review with adjustments made to the PIP as needed.

From: Kim Karasewicz
To: Kim Karasewicz
Subject: Project - Reserved Channel Development
Date: Friday, June 7, 2024 8:56:14 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello,

I am writing to express my concerns regarding the proposed project, which, while promising numerous benefits to our community, raises significant reservations in its current form. Specifically, my objections pertain to the proposed building heights,the placement of the park, and the buildings designated purposes. I believe addressing these issues is crucial for ensuring the project aligns with the best interests of our neighborhood.

1. Building Heights

The proposed building heights appear excessive. Are there any existing height regulations for this area? If not, it may be prudent to establish them. Presently, the buildings on the south side of W 1st St stand at approximately 50 ft. In contrast, the proposed structures on the north side are slated to reach 96 ft and 173 ft, with the potential for mechanicals to add up to 40 ft more, surpassing 200 ft. Such towering structures, four times taller than neighboring buildings, are incongruous with the existing landscape, particularly across from a residential zone. The community consensus is clear: buildings of this scale belong in the Seaport, not south of Summer Street. Allowing such towering developments risks overwhelming our surroundings. Previous discussions indicated a gradual increase in height from W 1st St to Summer, yet this proposal lacks any semblance of gradual progression. KK.01

2. Park Location

While I appreciate the consideration given to land ownership in the proposed park layout, I advocate for exploring alternative plans. Specifically, I suggest relocating the park to the intersection of W 1st and Pappas Way. Placing the park amidst a cluster of residential and commercial buildings lacks appeal. Moreover, this placement could potentially obstruct morning daylight and create a cramped atmosphere. By situating the park at the corner of W 1st and Pappas, we establish a connection to the Reserved Channel, fostering a more open and inviting environment. This alternative location serves as a central hub for South Boston, offering accessibility and appeal to residents. In contrast, the current proposal, positioned across from commercial buildings, raises uncertainties regarding future residential transitions. It is my belief that the park should be relocated to an area where it directly serves the residential community. KK.02

3. Intended Use

What is the rationale behind constructing two 11-story life science buildings in this vicinity? Additionally, what materials will be permitted for use in this neighborhood? Moreover, is there a genuine demand for additional life science infrastructure here? Boston's building vacancy rates are on the rise, with life science properties facing challenges in securing tenants. Thus, it begs the question: who will occupy these proposed buildings? Are there alternative proposals from the developers worth considering? KK.03 KK.04 KK.05 KK.06

Thank you for taking the time to review and consider my concerns. Your attention to these

matters is greatly appreciated, and I trust that together, we can work towards a solution that benefits our community as a whole.

Kim Karasewicz
407 West 1st St

KIM KARASEWICZ

KK.01 **The proposed building heights appear excessive. Are there any existing height regulations for this area? If not, it may be prudent to establish them. Presently, the buildings on the south side of W 1st St stand at approximately 50 ft. In contrast, the proposed structures on the north side are slated to reach 96 ft and 173 ft, with the potential for mechanicals to add up to 40 ft more, surpassing 200 ft. Such towering structures, four times taller than neighboring buildings, are incongruous with the existing landscape, particularly across from a residential zone. The community consensus is clear: buildings of this scale belong in the Seaport, not south of Summer Street. Allowing such towering developments risks overwhelming our surroundings. Previous discussions indicated a gradual increase in height from W 1st St to Summer, yet this proposal lacks any semblance of gradual progression.**

The Proponent recognizes the feedback that the proposed heights exceed those of existing residential buildings along West First Street. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing residential housing along West First Street, the program has been shifted further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

KK.02 **While I appreciate the consideration given to land ownership in the proposed park layout, I advocate for exploring alternative plans. Specifically, I suggest relocating the park to the intersection of W 1st and Pappas Way. Placing the park amidst a cluster of residential and commercial buildings lacks appeal. Moreover, this placement could potentially obstruct morning daylight and create a cramped atmosphere. By situating the park at the corner of W 1st and Pappas, we establish a connection to the Reserved Channel, fostering a more open and inviting environment. This alternative location serves as a central hub for South Boston, offering accessibility and appeal to residents. In contrast, the current proposal, positioned across from commercial buildings, raises uncertainties regarding future residential transitions. It is my belief that the park should be relocated to an area where it directly serves the residential community.**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way

along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

KK.03 What is the rationale behind constructing two 11-story life science buildings in this vicinity?

The Phase 1 Project now proposes that the buildings on Blocks A and B be primarily residential use.

KK.04 Additionally, what materials will be permitted for use in this neighborhood?

Material selections for buildings in the Master Plan Project will be governed by the "Phase 1 Design Guidelines" (included as Appendix A). The guidelines do not prescribe specific products but establish a framework to ensure that future buildings use durable, high-quality, and context-appropriate materials that reinforce the character of the surrounding South Boston neighborhood.

KK.05 Moreover, is there a genuine demand for additional life science infrastructure here?

The Phase 1 Project now proposes that the buildings on Blocks A and B will primarily consist of residential uses. The Proponent maintains confidence in the long-term viability of the commercial real estate market and commercial components will be assessed based on prevailing market conditions.

KK.06 Boston's building vacancy rates are on the rise, with life science properties facing challenges in securing tenants. Thus, it begs the question: who will occupy these proposed buildings?

The Proponent maintains confidence in the long-term viability of the commercial real estate market and commercial components will be assessed based on prevailing market conditions.

KK.07 Are there alternative proposals from the developers worth considering?

Based on community feedback, the team assessed alternative proposals. Assessment of the alternatives can be found in Chapter 2.

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June 7, 2024 Via email: alexander.strysky@mass.gov

MEPA Office
Attn: Alex Strysky
100 Cambridge Street
Boston, MA 02114

Re: Reserved Channel Project (Phase 1) Environmental Notification Form

Dear Mr. Strysky,

Boston Harbor Now respectfully submits the following comments on the Reserved Channel Environmental Notification Form submitted by the Oxford Properties Group. Our organization has been following this project since its inception, and most recently, staff attended the Reserved Channel Meetings on May 8th, 15th, and 21st. A member of our staff, Kelly Sherman, Manager of Waterfront Design, is also on the CAC, a group convened by the Boston Planning and Development Agency (BPDA) and Massachusetts Environmental Policy Act Office (MEPA) to provide additional input on this project.

As longtime stewards of the Boston Harborwalk, Boston Harbor Now is committed to ensuring that the waterfront we build today is designed for a more resilient and inclusive future. We use the term "Harborwalk 2.0" to capture the aspirations of this work to ensure the waterfront is accessible and welcoming; is prepared for the coastal impacts of climate change; and centers equity and inclusion in the development of its design, construction, and programming. An accessible waterfront should have both linear and lateral connections between the city and the water, as well as numerous activation strategies to serve all Bostonians. A resilient waterfront includes a variety of climate adaptation strategies to protect and serve Boston at a district scale. To center equity in waterfront design is to focus on strategies that make the waterfront feel safe and inclusive through lighting, signage (preferably multi-lingual), full ADA accommodations, and the elimination of features that make users feel unwelcome or excluded.

Phasing and Flood Resilience
With sea levels persistently rising and the threat of coastal flooding becoming more extensive, it is vital that we build new coastal flood infrastructure when the opportunity arises. New waterfront development like this provides an opportunity to reimagine sections of the waterfront as more resilient and welcoming. We hope this development can help expeditiously realize flood infrastructure that protects communities from the threat of coastal inundation while also allowing them to access the water, one of Boston's great natural resources. Coastal flood infrastructure should help contribute to flood protection on a district scale and help create the continuous line of defense needed to protect more inland communities and assets vulnerable to flooding. Flood infrastructure should also be adaptable,

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allowing for additional protection as needed in the future. Finally, flood infrastructure should still allow for connection to the water and enhance the waterfront's use.

Although the primary focus of this filing is Phase 1, it is important to understand how the flood infrastructure created in this Phase will tie into the generally outlined coastal flood plans for future phases of this project. While it is clear that the proponent plans to elevate the entire site above the City of Boston's SLR-DFE of 20.5 feet BCB, resulting in a continuous line of protection, it is unclear how the phasing affects the flood delivery. How will the elevated paths and roads in Phase 1 connect to future phases of the site, which, at the time of construction, will be at the existing grade? Boston Harbor Now suggests that the proponent accelerate the flood infrastructure timelines for the other phases of the development to minimize the need to redesign and reconstruct areas where Phase 1 ties into other phases' flood infrastructure and expedite the closing of flood pathways. We recognize that fully closing these flood pathways requires tie-ins off-site beyond the jurisdictional boundaries of this project. The proponent should work to ensure that abutting property owners are aware of the proponent's coastal flood resilience measures, and the City and MEPA should help facilitate these conversations.

BHN.01

BHN.02

BHN.03

Jurisdiction

As stated in the ENF, the project site is owned mostly by Massport and ground-leased to the proponent, with a lesser portion owned in fee by the proponent. It is our understanding that for purposes of Chapter 91, the Massport-owned portions are governed by a 2001 Memorandum of Understanding between Massport and Department of Environmental Protection (DEP). It is also our understanding that the tidelands owned by Massport, even when ground leased to a non-governmental entity, are considered Commonwealth Tidelands, which have a higher standard and greater expectation for public benefits. In future public meetings and filings, we would like the proponent to clarify how the MOU standards differ from typical Commonwealth Tideland standards, if at all. We also would like to note that DEP is in the process of updating their Chapter 91 regulations to better address the threats of sea level rise. Though not yet completed, we hope the proponent will work with DEP to ensure compliance with the future regulations.

BHN.04

BHN.05

Future Uses

Although we appreciate that there was a baseline amount of information provided for future phases of this project, we recognize that more details on the massing, uses, and design of future buildings, open space, and infrastructure are still being developed. Even so, we believe FPAs can play a vital role in creating a more equitable waterfront by introducing uses and amenities that support and encourage waterfront visitation for all. As the proponent selects uses and, eventually, tenants for their FPAs, we ask that they consider ones that will create a more welcoming waterfront and further

BHN.06

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the idea of the waterfront as a destination. FPAs and other waterfront amenities should provide services at various price points, including low-cost and no-cost opportunities, to eliminate social barriers that may deter visitors from coming to the area and to make it accessible to all. Although we expect to see basic amenities that allow visitors to use the space comfortably, like water fountains and bathrooms, we also want to see amenities that actively encourage audiences to visit the waterfront. FPAs should reflect both the local community and the communities we hope to bring to the waterfront and further appeal to audiences who have not historically been welcomed. With a host of FPA spaces coming online through this project over its multiple phases, we recommend the proponent select a diverse range of uses that can attract a broad range of audiences.

Site plans for the whole development also show a potential future building, K1, on the watersheet. According to the ENF, "the building is envisioned to be a new hotel with approximately 215,000 sf, of which approximately 10,000 sf on the ground floor will be used for retail and public amenities, and it will be planned with facilities of public accommodation to include a public marina." This non-water-dependent use would be built on pilings, which are not present on-site, though the proponent has stated that a pier was formerly located there. Boston Harbor Now would like to learn more about the proposed building and hopes to see more information provided about the proposed public benefit this site will have, its impact on water-dependent uses already operating on the channel, and its coastal resilience strategy. BHN.07

Traffic Impacts to the Working Port

With roughly 1.7 million square feet of mixed-use development anticipated in Phase 1 and an additional 3.5 million square feet planned for subsequent phases, we expect a significant increase in daily trips to and from the site even with the proponent's goal of prioritizing non-auto travel for residents, employees, and visitors. We appreciate the multi-faceted approach to transportation planning and mitigation outlined in the ENF but hope to see the proponent specifically explain how they will minimize impacts to the nearby DPA and working port facilities. The working port is a vital part of Boston's economy, and their operations should not be disrupted. Ensuring quick, safe and efficient truck access for cargo shipments as well as workforce access to the various Massport and Raymond L. Flynn Marine Park employment destinations will be vital to working ports continued success. BHN.08

In conclusion, although the scope of work is centered on Phase 1, it's important to understand how Phase 1 work ties into the rest of the site, especially as it pertains to coastal flood resilience. Coastal flood resilience, to be effective, needs to provide a continuous line of defense, which is made more challenging by a phased approach. This project should also work to create a more welcoming space along the waterfront. Phase 1 and future uses on-site should provide opportunities to activate the waterfront and bring

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new audiences to the water. Even with the increased visitation we still hope that the nearby working waterfront is still able to flourish.

We are grateful for the opportunity to comment on this project and will continue to follow its progress toward implementation. If you have additional questions, we would be happy to speak with you or the proponent.

Sincerely,
Kathy Abbott



President and CEO
Boston Harbor Now

BOSTON HARBOR NOW

BHN.01 **While it is clear that the proponent plans to elevate the entire site above the City of Boston's SLR-DFE of 20.5 feet BCB, resulting in a continuous line of protection, it is unclear how the phasing affects the flood delivery.**

Section 10.4 (starting on page 10-17) discusses the coastal engineering analysis and hydrodynamic modeling. The detailed analysis and conclusions are included in Appendix F. The analysis shows that the flood extent and depth in the surrounding area during potential future storm events will not be impacted by the increased elevation of the Master Plan Site. The analysis also shows that only minor impacts related to flood pathways and velocities are expected in the most extreme 2070 500-year storm event.

BHN.02 **How will the elevated paths and roads in Phase 1 connect to future phases of the site, which, at the time of construction, will be at the existing grade? Boston Harbor Now suggests that the proponent accelerate the flood infrastructure timelines for the other phases of the development to minimize the need to redesign and reconstruct areas where Phase 1 ties into other phases' flood infrastructure and expedite the closing of flood pathways. We recognize that fully closing these flood pathways requires tie-ins off-site beyond the jurisdictional boundaries of this project.**

Section 10.2 (starting on page 10-1) describes how the elevation of the Master Plan Site will be phased, how each phase will be connected, and how the Master Plan Site will connect to the surrounding area.

BHN.03 **The proponent should work to ensure that abutting property owners are aware of the proponent's coastal flood resilience measures, and the City and MEPA should help facilitate these conversations.**

During the review of the Master Plan Project under MEPA and the Article 80 process, the community will continue to be notified of the Master Plan Project and resilience measures.

BHN.04 **In future public meetings and filings, we would like the proponent to clarify how the MOU standards differ from typical Commonwealth Tideland standards, if at all. We also would like to note that DEP is in the process of updating their Chapter 91 regulations to better address the threats of sea level rise.**

The MOU does not establish standards for nonwater-dependent projects within the Master Plan Site that differ from standards enumerated in the Waterways Regulations. The Proponent is aware of MassDEP's proposed revisions to the Waterways Regulations to improve the Commonwealth's resilience to impacts of climate change. The Master Plan Project will comply with all applicable regulatory standards and requirements.

BHN.05 **Though not yet completed, we hope the proponent will work with DEP to ensure compliance with the future regulations.**

The Proponent will ensure that each component of the Master Plan Project complies with the applicable regulations.

BHN.06 **As the proponent selects uses and, eventually, tenants for their FPAs, we ask that they consider ones that will create a more welcoming waterfront and further the idea of the waterfront as a destination. FPAs and other waterfront amenities should provide services at various price points, including low-cost and no-cost opportunities, to eliminate social barriers that may deter visitors from coming to the area and to make it accessible to all.**

The Master Plan Project will comply with MassDEP Chapter 91 Waterways Regulations, which require Facilities of Public Accommodation and public access amenities within jurisdictional tidelands. As the FPAs are developed, the Proponent anticipates marketing to a variety of potential tenants to provide a mix of uses at a mix of cost levels.

BHN.07 **Site plans for the whole development also show a potential future building, K1, on the watersheet. According to the ENF, "the building is envisioned to be a new hotel with approximately 215,000 sf, of which approximately 10,000 sf on the ground floor will be used for retail and public amenities, and it will be planned with facilities of public accommodation to include a public marina." This non-water-dependent use would be built on pilings, which are not present on-site, though the proponent has stated that a pier was formerly located there. Boston Harbor Now would like to learn more about the proposed building and hopes to see more information provided about the proposed public benefit this site will have, its impact on water dependent uses already operating on the channel, and its coastal resilience strategy.**

As noted in Section 5.3 (page 5-3), at this time the Proponent is evaluating the appropriate regulatory pathway for the redevelopment of Block K. Block K is proposed for a later phase and will be evaluated in more detail in a future filing.

BHN.08 **We appreciate the multi-faceted approach to transportation planning and mitigation outlined in the ENF but hope to see the proponent specifically explain how they will minimize impacts to the nearby DPA and working port facilities. The working port is a vital part of Boston's economy, and their operations should not be disrupted. Ensuring quick, safe and efficient truck access for cargo shipments as well as workforce access to the various Massport and Raymond L. Flynn Marine Park employment destinations will be vital to working ports continued success.**

Sections 7.5.3 (starting on page 7-49) and 7.6.3 (starting on page 7-70) discuss impacts to freight operations.

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Attn: MEPA Office, Alexander Strysky
Boston, MA 02114

Re: EEA #16802 Reserved Channel Master Plan Development ENF

June 7, 2024

Dear Secretary Tepper,

I want to thank you for the opportunity to serve on the Reserved Channel Community Advisory Committee (CAC) and to provide my initial input on the Reserved Channel Project, located in the South Boston Waterfront.

Process:

Terms outlined in the April 1, 2024 Special Review Procedure (SRP) certificate for the Master Plan and Phase 1 have not yet been implemented putting the CAC at a disadvantage in their ability to fulfill their purpose and function. These components include, but are not limited to the following:

- The SRP envisioned that the CAC would meet in advance of and throughout the formal review process.
- The proponent was to provide administrative support for the CAC, with meetings scheduled in consultation with CAC members, Massport, and the City.
- The proponent was also to conduct public outreach to surrounding communities, including environmental justice (EJ) populations within the designated geographic area (DGA) of the project site, prior to initiating each phase of development under the Master Plan Project. The proponent was to propose a Public Involvement Plan (PIP) for the Master Plan Project as part of the initial filing, which was to be provided to the CAC for its review and comment as well as to the MEPA and EEA EJ Offices prior to filing.

The purpose of the CAC is to provide input and guidance to the proponent, the City, MEPA, and EEA Secretary throughout the review process for the Master Plan Project and Phase 1 Project by reviewing and submitting comments on documents as well as acting as a conduit to the public and offering feedback during meetings with the proponent.

It is safe to say that since CAC members do not know who each other are, do not have each other's contact details, did not meet prior to the start of the formal review process, have not been educated on their significant role, have not been consulted with and approved the meeting schedule, and have not seen and approved the PIP, the SRP is not currently in compliance. I kindly request that the SRP be immediately followed.

Use:

Ninety percent of Phase 1 is located on property owned either by the Commonwealth of Massachusetts or one of its Independent Public Authorities. As part of the Commonwealth's Affordable Homes Act, the Governor of Massachusetts signed Executive Order Number 623: Identifying Opportunities for the Use of Surplus and Underutilized Land for Housing. This order is to develop an initial inventory of surplus, underutilized, and vacant state-owned land that could be repurposed to increase the state's multifamily and affordable housing stock. Only 10% of the Phase 1 project on MassPort property is currently planned for residential use. Was the MassPort land within the Reserve Channel project included in Executive Order 623, and what was the outcome of that analysis? TM.01

Resiliency:

The western shoreline of the Reserved Channel has been identified as a flood entry point for high water flooding in the Climate Ready Boston Report. The proposal to implement solutions in phases over 20 years to prevent flooding from sea level rise frankly puts the inland neighborhood at risk. The resiliency solution for the entire project, all of it on MassPort property and the privately owned parcel, needs to be incorporated into Phase 1 and built during the first phase of the project. TM.02

Chapter 91:

The PNF states that the project will comply with Chapter 91 jurisdictional obligations. It is not clear from the material submitted how much of the property is within Chapter 91 jurisdiction, if a current license or MOU exists, the impacts and any necessary changes, how the obligation for open space is being fulfilled (how many square feet for parks, roads, sidewalks, and passageways between buildings), and what the plans are for Facilities of Public Accommodation. TM.03

Transportation:

The analysis provided indicates that more than 18,000 new daily vehicle trips are planned just with Phase 1 of this project. The proponent indicates that they aspire to meet the City's 2030 Go Boston goal to have only 25% of trips to their site be by vehicle, but they do not provide meaningful detail on how that will be accomplished. This MassPort project to redevelop their property needs to be integrated with a MassDOT/MBTA funded plan to provide alternative modes for new residents, workers and visitors to use, and those details need to be provided. The current and proposed road network will not support the number of vehicle trips this project will generate and will create traffic chaos in the surrounding neighborhood.

TM.04

TM.05

I look forward to continuing to collaborate on this project with the proponent, my neighbors and fellow CAC members.

Regards,

Tom Ready

TOM READY

TM.01 **Only 10% of the Phase 1 project on MassPort property is currently planned for residential use. Was the MassPort land within the Reserve Channel project included in Executive Order 623, and what was the outcome of that analysis?**

The Proponent acknowledges the importance of aligning the program on Massport-controlled land with the Commonwealth's broader housing objectives, including those reflected in Executive Order No. 623: Identifying Opportunities for the Use of Surplus and Underutilized Land for Housing. The Proponent understands that Massport is responsible for determining how Executive Order 623 applies to its portfolio and for any subsequent disposition or program decisions arising from that process. To date, no separate directive or published determination specific to the Master Plan Site has been issued to the Proponent in connection with Executive Order 623.

Independent of that state-level analysis, the Phase 1 program has already been substantially revised since the ENF to increase the share of residential use, particularly along West First Street, and the Master Plan Project has been structured to maintain flexibility for additional housing opportunities in later phases if Massport and the Commonwealth identify further housing priorities on the Master Plan Site.

The Proponent will continue to coordinate with Massport regarding any future guidance or outcomes from Executive Order 623 that may affect program distribution on Massport-controlled parcels within the Master Plan Site.

TM.02 **The western shoreline of the Reserved Channel has been identified as a flood entry point for high water flooding in the Climate Ready Boston Report. The proposal to implement solutions in phases over 20 years to prevent flooding from sea level rise frankly puts the inland neighborhood at risk. The resiliency solution for the entire project, all of it on MassPort property and the privately owned parcel, needs to be incorporated into Phase 1 and built during the first phase of the project.**

Section 10.4 (starting on Page 10-17) and Appendix F include the coastal engineering analysis. The resiliency measures proposed have been contemplated and are proposed to be delivered through phased implementation.

TM.03 **The PNF states that the project will comply with Chapter 91 jurisdictional obligations. It is not clear from the material submitted how much of the property is within Chapter 91 jurisdiction, if a current license or MOU exists, the impacts and any necessary changes, how the obligation for open space is being fulfilled (how many square feet for parks, roads, sidewalks, and passageways between buildings), and what the plans are for Facilities of Public Accommodation.**

A detailed description of the Phase 1 and Master Plan Project compliance with Chapter 91 requirements has been provided in Chapter 5 (starting on page 5-3). Figure 5-1 and 5-2 (pages 5-2 and 5-5) depict the areas subject to Chapter 91 for Phase 1 and the Master Plan Project.

TM.04 **This MassPort project to redevelop their property needs to be integrated with a MassDOT/MBTA funded plan to provide alternative modes for new residents, workers and visitors to use, and those details need to be provided.**

Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including pedestrian, bicycling, and transit mitigation measures.

TM.05 **The current and proposed road network will not support the number of vehicle trips this project will generate and will create traffic chaos in the surrounding neighborhood.**

Section 7.7 (starting on page 7-72) discusses the impact of the Phase 1 Project on the study area roadway network. Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including transportation demand management strategies.

From: Julie Isch
To: Strysky, Alexander (EEA)
Subject: Reserved Channel Development Project
Date: Tuesday, June 18, 2024 5:00:47 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello Alex,

I hope this email finds you well. I am writing to express opposition to the Reserved Channel Development Project proposal. I am a member of the Community Advisory Committee (CAC) for this project and also an abutter. I attended all meetings from April 23, 2024 to May 22, 2024 as part of this committee, including a site visit.

This is a very large project and will hopefully bring many benefits to the neighborhood. However, I am against the project as is proposed. Specifically, I am against the heights of the proposed buildings and their intended use, the location of the park, and the parking plans.

1. Building Heights and Intended Use

a. Height - The proposed building heights are aggressive. What are the height restrictions in this area? If there are none, there should be. The existing buildings on the south side of W 1st St are roughly 50 ft. The proposed buildings on the north side are to be 96 ft and 173 ft. This does not include mechanicals which can go up to 40 ft higher making one of them over 200ft - 4 times the size of the existing buildings across the street. Buildings of this magnitude across from a residential neighborhood do not fit with the fabric of the area. The community does not want buildings this large south of Summer street. Keep those in the Seaport. Allowing buildings of this size will overwhelm the surrounding area. We were told that there would be a gradual step up in height as you move from W 1st St to Summer. Nothing about this proposal is gradual. JI.01

b. Intended Use - Why does this area need two 11 story life science buildings? What kind of materials are going to be allowed into the neighborhood? Is there even a need for more life science buildings in this area? The vacancy rates for buildings in Boston are rising and life science buildings in particular are having issues finding tenants. Who is going to occupy these? What other ideas do the developers have? JI.02 JI.03 JI.04

2 Park Location

I understand that the proposal for the park is based on land ownership. However, I would like the owners to discuss an alternative plan and move the park to the corner of W 1st and Pappas Way. Placing the park in the middle of the proposed residential and commercial buildings is not appealing. I don't want to bring my children to a park that is looked down on and surrounded by commercial buildings; it just feels creepy. Also, the placement would hinder daylight in the morning and feel cramped. By moving it to the corner of W 1st and Pappas you are connecting it to the Reserved Channel and creating a more open and inviting atmosphere. This alternative location to what is proposed is much more central to South Boston as a whole. The current proposal is across from commercial buildings on the south side of W 1st and we have no idea if or when those will ever transition to residential. Move the park to where the residents live. JI.05

3. Parking

JI.06

The proposal for 200 more residents did not include a clear plan for parking for those residents. Also, the commercial space did not include a plan either. I drive down West First between F and Farragut a minimum of 4+ times a day taking my children to and from school and neighborhood activities. In the almost 2 decades that I have lived in Boston the traffic along First Street has grown tremendously and is very dangerous. People speed, run stop signs and frankly I am scared to cross the street with my kids. A few weeks ago I was rear ended while stopped at a red light on East 1st next to the Edison Plant demolition. That is an enormous project that is negatively impacting the quality of life for neighbors living and traveling near it. The enormity of the Reserved Channel Development will bring more people and cars and make West First Street and the surrounding area worse than it already is. How can you approve such a massive development with so many similar ones in the works? Where are the cars going to park? There will be more cars because there is no public transit to bring you to and from this area. What is the plan for improving safety and transportation to the North side of South Boston? Please do not approve any more developments without having a plan for moving people around safely in the neighborhood.

Thank you for taking the time to read my thoughts and concerns. I enjoyed the opportunity to participate on the CAC. However, in the future, I hope that expected procedures are actually followed for these types of engagements. It is my understanding that the CAC should have met prior to the formal review period, meetings would be scheduled in consultation with the CAC, and we should have received documents ahead of meetings for review. None of these occurred. The CAC process was rushed and in a manner that limited the ability for those serving on it to be effective representatives of the residents of the city.

Thank you again for your time.

Sincerely,
Julie Isch
407 W 1st St
504-453-8167

JULIE ISCH

JI.01 **The proposed building heights are aggressive. What are the height restrictions in this area? If there are none, there should be. The existing buildings on the south side of W 1st St are roughly 50 ft. The proposed buildings on the north side are to be 96 ft and 173 ft. This does not include mechanicals which can go up to 40 ft higher making one of them over 200ft - 4 times the size of the existing buildings across the street. Buildings of this magnitude across from a residential neighborhood do not fit with the fabric of the area. The community does not want buildings this large south of Summer street. Keep those in the Seaport. Allowing buildings of this size will overwhelm the surrounding area. We were told that there would be a gradual step up in height as you move from W 1st St to Summer. Nothing about this proposal is gradual**

The Proponent recognizes the feedback that the proposed heights exceed those of existing residential buildings along West First Street. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing residential housing along West First Street, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

JI.02 **Why does this area need two 11 story life science buildings? What kind of materials are going to be allowed into the neighborhood? Is there even a need for more life science buildings in this area? The vacancy rates for buildings in Boston are rising and life science buildings in particular are having issues finding tenants. Who is going to occupy these? What other ideas do the developers have?**

The Phase 1 Project now proposes that the buildings on Blocks A and B be primarily residential use.

JI.03 **I understand that the proposal for the park is based on land ownership. However, I would like the owners to discuss an alternative plan and move the park to the corner of W 1st and Pappas Way. Placing the park in the middle of the proposed residential and commercial buildings is not appealing. I don't want to bring my children to a park that is looked down on and surrounded by commercial buildings; it just feels creepy. Also, the placement would hinder daylight in the morning and feel cramped. By moving it to the corner of W 1st and Pappas you are connecting it to the Reserved Channel and creating a more open and inviting atmosphere. This alternative location to what is proposed is much more central to South Boston as a whole. The current proposal is**

across from commercial buildings on the south side of W 1st and we have no idea if or when those will ever transition to residential. Move the park to where the residents live.

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

JI.04 **The proposal for 200 more residents did not include a clear plan for parking for those residents. Also, the commercial space did not include a plan either. I drive down West First between F and Farragut a minimum of 4+ times a day taking my children to and from school and neighborhood activities. The enormity of the Reserved Channel Development will bring more people and cars and make West First Street and the surrounding area worse than it already is. How can you approve such a massive development with so many similar ones in the works? Where are the cars going to park? There will be more cars because there is no public transit to bring you to and from this area. What is the plan for improving safety and transportation to the North side of South Boston?**

The DEIR addresses parking and transportation concerns in Chapter 7. For Phase 1 and the Master Plan Project, Sections 7.5.1.2 (starting on page 7-32) and 7.6.1.3 (page 7-57) include analysis for Phae 1 of parking demand and supply, comparing proposed spaces to local zoning requirements and ITE standards. Parking will primarily be provided in below-grade garages within each block, designed to meet residential and commercial needs while minimizing surface parking.

From: Kim, Tori (EEA)
To: Strysky, Alexander (EEA); Hardock, Kate (EEA)
Subject: FW: Reserved Channel Development comments
Date: Thursday, June 20, 2024 4:18:43 PM

FYI

Tori T. Kim
Assistant Secretary / MEPA Director
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114
Tel: (857) 207-2996 (mobile)

From: annsanders7@icloud.com <annsanders7@icloud.com>
Sent: Thursday, June 20, 2024 4:10 PM
To: Michelle.Wu@boston.gov; Ed Flynn <Ed.Flynn@boston.gov>; Lydia.Polaski@boston.gov; Nick.collins@masenate.gov; David.biele@mahouse.gov; Arthur.jemison@boston.gov; Nupoor.monani@boston.gov; Aimee.chamber@boston.gov; Nick.carter@boston.gov; Mark.mcgonagle@boston.gov; Kim, Tori (EEA) <tori.kim@mass.gov>; Alexander.stryski@mass.gov
Subject: Reserved Channel Development comments

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June 20, 2024

Hello,

My name is Ann Sanders and I live at 405 West First Street, directly across from the proposed Reserved Channel Development. I am writing as a direct abutter to voice my concerns about Phase One of this development.

At this point in the process there are three issues that stand out: height of the buildings, location of the park and traffic.

Height:

- According to the latest information we have received from the developers, the proposed height of the residential buildings that will immediately front West First Street is at least 2 stories higher than the residential buildings across the street.
- The proposed height for buildings directly behind the residential buildings (on West First Street) is three times as tall as the residential buildings where I live.

I have attended most, if not all, of the meetings sponsored by the developers (Oxford Properties and Pappas Enterprises) and have consistently raised the height issue. During that time, the developers' response has been that they want to be a good neighbor and pay attention to the needs of the community – but now that we can see the proposed plans, that doesn't seem to be the case.

- Additionally, the developers have said they will need to elevate the ground 8-10 feet (due to negative impacts from climate change) before any construction, exacerbating the already unacceptable heights.
- In summary, I strongly oppose the height for the buildings along West First Street as it is currently stated in their proposal. AS.01

Location of the Park:

- According to the latest information we have received from the developers, the proposed park that fronts West First Street is to be located in an area where there are no residential homes. A better location would be at the intersection of West Front Street and Pappas Way where there are residents, many of whom have small children.
- Due to concerns about climate resiliency, a park with appropriate plantings and grass at the intersection mentioned above would allow a permeable space to better absorb any overflow water from the Reserved Channel.
- There are currently no parks in this residential area - a need that was strongly stated in all the feedback received by developers over the last several years. Since this issue was obviously of great importance to the residents of this area, it makes sense to locate it where most people can use it.
- In summary, I believe the current proposed location of the park should be relocated from where it is now (corner of West First and F Street) to the intersection of West First Street and Pappas Way. AS.02

Traffic:

- With 200 new residential units planned, retail stores and two large commercial buildings planned, the traffic will be even worse than it is now. Currently, there is excessive amount of noise and congestion and that will, without question, become even worse. Trucks, including those from Conley Terminal, are a daily, noisy presence. Cars speed up and down East & West First Street, often blowing through the stop sign at Pappas Way and East/West First Street. Pedestrians trying to cross East or West First Street can be scary.
- In summary, I have not seen any plan from the developers that addresses this issue. AS.03

In conclusion, the goal of my working with the developers over the last several years has been to participate in a meaningful and respectful discussion about ideas and suggestions. I would like to think that that was also the developers' goals. Therefore, I am surprised that, notwithstanding

repeated concerns and objections about height, location of the park and traffic issues, the latest proposal we received does nothing to address our concerns. Additionally, the issues raised in this email are the very same issues raised 6 months earlier at the end of that comment period. These are quality of life issues that impact all of us who live here.

I look forward to working with the developers and engaging in this project to arrive at a mutually beneficial solution for this development; however, concerns stated above need to be addressed and taken into consideration.

Respectfully,

Ann

Ann Sanders
annsanders7@icloud.com
617-571-4149

ANN SANDERS

AS.01 **The proposed height for buildings directly behind the residential buildings (on West First Street) is three times as tall as the residential buildings where I live. In Summary, I strongly oppose the heigh for the buildings along West First Street as it is currently stated in their proposal.**

The Proponent recognizes the feedback that the proposed heights exceed those of existing residential buildings along West First Street. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing residential housing along West First Street, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

AS.02 **I believe the current proposed location of the park should be relocated from where it is now (corner of West First and F Street) to the intersection of West First Street and Pappas Way.**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A.

AS.03 **With 200 new residential units planned, retail stores and two large commercial buildings planned, the traffic will be even worse than it is now. Currently, there is excessive amount of noise and congestion and that will, without question, become even worse. Trucks, including those from Conley Terminal, are a daily, noisy presence. Cars speed up and down East & West First Street, often blowing through the stop sign at Pappas Way and East/West First Street. Pedestrians trying to cross East or West First Street can be scary.**

Freight impacts are discussed in Section 7.5.3.3 (starting on page 7-50) in relation to the Cypher Street/Road 1 intersection design and the design intention to discourage cut-through traffic by trucks. The Pappas Way/East First Street/West First Street intersection is discussed in Section 7.5.1.5 (page 7-40). Transportation impacts of the Phase 1 Project are discussed in Sections 7.7 (starting on page 7-72) and 7.8 (starting on page 7-89), with mitigation to offset these impacts discussed in Section 7.9 (starting on page 7-95).

From:	Jason Weissman
To:	Strysky, Alexander (EEA); nick.carter@boston.gov
Cc:	"Joseph P. Hanley"; Nicholas Zozula; David.Biele@mahouse.gov; nick.zaferakis; lydia.polaski@boston.gov; ed.flynn@boston.gov; nick.collins@masenate.gov
Subject:	Support Email | Reserved Channel Development in South Boston
Date:	Thursday, June 20, 2024 2:36:31 PM
Attachments:	image002.png

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Dear Alex and Nick:

I am nearby property owner in South Boston, who wishes to be recorded in support of the Reserved Channel Development project in the neighborhood. JS.01

This project is a generational opportunity to revitalize and transform one of the last largest property assemblages in the industrial section of our community, with much-needed commercial job creation, neighborhood serving retail and open spaces for everyone to enjoy. It will also make significant improvements to storm water management, mitigate environmental impacts and upgrade the public realm at and around the site, which is uniquely burdened by vast impervious surface areas, inadequate and inaccessible public sidewalks and very littler tree canopy coverage. Thus, as a nearby resident and property owner in close proximity to this site, I am enthusiastically supportive of the RCD project.

Thank you for recording me as a strong supporter of this exciting development opportunity for South Boston.

Sincerely,

Jason S. Weissman
202 W First Street (Owner/Manager)

Jason S. Weissman
Principal & Founder
The Broadway Company
jw@tbcre.com
www.tbcre.com
136 Newbury Street
Boston, Massachusetts 02116

Telephone: 1-617-818-7977

JASON S. WEISSMAN

JS.01 **I am nearby property owner in South Boston, who wishes to be recorded in support of the Reserved Channel Development project in the neighborhood.**

Thank you for your support.

From:	philipbalboni@gmail.com
To:	Strysky, Alexander (EEA); nick.carter@boston.gov
Cc:	ed.flynn@boston.gov; Nick.Collins@masenate.gov; David.Biele@mahouse.gov; nick.zaferakis; lydia.polaski@boston.gov; "Joseph Hanley"
Subject:	Pappas Industrial Park
Date:	Thursday, June 20, 2024 10:38:14 AM

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Dear Nick and Alex,

As a longtime property owner (71 years now) on the southern side of West First Street, across from the Pappas Industrial Park on West First Street, I am very pleased to offer my strongest SUPPORT for the master-planned Reserved Channel Development by Oxford Property Group and Pappas Enterprises. PB.01

For as long as I can remember, the Pappas Industrial Park has been an active commercial job creator at this industrial section of the neighborhood. Its proposed upgrade and revitalization into a new mixed-use development, with 21st-century employment opportunities in life sciences, active retail, and new open spaces, will significantly improve and enhance this part of South Boston.

The project's size, scale, uses, and overall programming is entirely consistent with and complimentary to the planned residential growth and expansion along the opposite side of West First Street in the immediate area (between B and E Streets), which includes over 500 new units of multifamily housing at several approved and planned developments along our southern side of West Frist Street (between the intersections of B and E Street).

As proposed, the RCD project will help to restore an important live-work balance for the future of South Boston, with expanded residential on one side of West First Street and a mix of new commercial uses, with expanded employment opportunities and a complimentary portion of work force and senior housing on the other. I also appreciate its much-needed investments in coastal resiliency and support the central location of its new publicly accessible open space, for the entire neighborhood to access and enjoy.

This is a great new asset for the neighborhood and for all of us who have long owned and managed properties in this area and who believe passionately in its future. Please record me in complete Support of the RCD project.

With best wishes, Phil Balboni
Owner of 270 West Second Street

Philip S. Balboni
P. Christopher Associates LP
Managing General Partner
2 Atlantic Avenue, the Pilot House

PHILIP S. BALBONI

PB.01 **As a longtime property owner (71 years now) on the southern side of West First Street, across from the Pappas Industrial Park on West First Street, I am very pleased to offer my strongest SUPPORT for the master-planned Reserved Channel Development by Oxford Property Group and Pappas Enterprises.**

Thank you for your support.

June 20, 2024

Dear Mr. Strysky,

We, the Trustees of the Edwin Sullivan Condo Trust (ESCT), are writing to voice our concerns and share our opinions about Phase 1 of the Reserved Channel Development (RCD).

The ESCT is located at 401-407 West First Street, which is directly across the street from this proposed development. We have multigenerational individuals and families living in 45 units, many of whom have lived here since the building was constructed. We write to you today with three quality-of-life concerns:

- Opposition to the proposed height,
- Request that the park (currently proposed for the corner of West First Street and F Street), be relocated to the corner of Pappas Way and West First Street, and
- Concerns about increased traffic in the area.

Proposed Height:

As the plan currently stands, the residential buildings that front West First Street are easily 2 stories taller than our residential buildings. And, to make things even worse, the commercial buildings directly behind the residential buildings are three times the height of both the ESCT buildings and any nearby homes. This is unacceptable and we urge you to go back to the drawing board and present a new plan more in keeping with existing neighborhood heights. ESCT.01

Park Location:

Parks are meant to anchor a neighborhood, to be enjoyed and used by those living near the park. The location where it is currently proposed (F Street) is an area without residents. By relocating the park to the corner of Pappas Way and West First Street, you would maximize availability to 1st Street residents. Additionally, a park at the corner of Pappas and West First could be a tremendous help regarding in mitigating effects from floods and climate change. ESCT.02

Traffic:

Unfortunately, the traffic where we live is already at an unacceptable level – with noise, congestion, dangers for pedestrian at an all-time high. Street parking is extremely difficult. To add 200 additional residential units will only exacerbate this serious problem. ESCT.03

With these quality-of-life issues in mind, we strongly urge the RCD developers – Oxford/Pappas – to reconsider. Those of us who live here want to be good neighbors and expect the developers to also have that as a priority. We also encourage those of you receiving this letter to carefully look at this proposed development and realize the negative impact that it will have on the immediate abutters.

Thank you for your consideration,

The Trustees of the Edward Sullivan Condominium Trust (ESCT)

- Debra Boschetti (401 West 1st)
- Dan Munroe (401 West 1st)
- Robert B. Diaz (405 West 1st)
- Harsha Bishetti (407 West 1st)
- Jen Sagawa (407 West 1st)



Robert B. Diaz, Secretary for the ESCT
401-407 West 1st Street
Boston MA 02127

EDWIN SULLIVAN CONDO TRUST

ESCT.01 **As the plan currently stands, the residential buildings that front West First Street are easily 2 stories taller than our residential buildings. And, to make things even worse, the commercial buildings directly behind the residential buildings are three times the height of both the ESCT buildings and any nearby homes. This is unacceptable and we urge you to go back to the drawing board and present a new plan more in keeping with existing neighborhood heights.**

The Proponent recognizes the concern that the proposed heights exceed those of existing residential buildings along West First Street and acknowledges the importance of honoring the expectations established in earlier stages of discussion. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing condominiums, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

ESCT.02 **Parks are meant to anchor a neighborhood, to be enjoyed and used by those living near the park. The location where it is currently proposed (F Street) is an area without residents. By relocating the park to the corner of Pappas Way and West First Street, you would maximize availability to 1st Street residents. Additionally, a park at the corner of Pappas and West First could be a tremendous help regarding in mitigating effects from floods and climate change.**

Given the volume of water in a future storm event, additional pervious area would not have a meaningful impact. However, based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A.

ESCT.03 **Unfortunately, the traffic where we live is already at an unacceptable level – with noise, congestion, dangers for pedestrian at an all-time high. Street parking is extremely difficult. To add 200 additional residential units will only exacerbate this serious problem.**

Section 7.5.1.2 (starting on page 7-32) discusses proposed parking supply. Section 7.7 (starting on page 7-72) discusses the impact of the Phase 1 Project on traffic operations. Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including transportation demand management strategies.

From: Joshua Levin
Subject: Reserved Channel Development Abutter Comment
Date: Friday, June 21, 2024 1:28:38 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

My name is Josh Levin, and I'm a resident of 401 W 1st Street (Unit 201). As an abutter of the proposed Reserved Channel Development, I wish to reiterate my specific concerns about the plan as currently drafted.

First and foremost, I'm troubled by the heights of the proposed buildings. The shortest is 96 feet, while the tallest is over 190 feet. While I recognize the importance of these heights to the profitability of the project, I strongly urge that the buildings over 60 feet be located close to Summer Street. By keeping the buildings along the A and B parcels at or below 60 feet, the development abides by Article 68 Section 25, which dictates a maximum building height of 60 feet along 1st Street. That would still represent a significant increase in the height of the building stock along the south side of First Street but would foster better integration with the existing community. JL.01

Second, I'd like to advocate that the location of the proposed park be moved to the Pappas Way end of the development—that is, swapping the park with buildings A1, A2 and A3. This orientation offers two benefits vis-à-vis the plan as currently stated. First, it better distributes the area's green spaces by putting more distance between the new park and the Buckley Playground and placing a community outdoor space between East First, Broadway, L Street, and Dorchester where none now exists. More important, there's a strong argument that permeable green space would facilitate climate resiliency by better absorbing potential water overflow from the Reserved Channel. JL.02

Finally, we need meaningful improvements to the traffic infrastructure along West First Street. Traffic is already problematic in the corridor without 200 new residential units and additional retail. As best I can tell there's no plan in place to deal with the additional strain. That issue must be solved before the project moves forward. JL.03

I would like to be an advocate in the community for this development project but to earn my support, these revisions to the plan are absolutely essential. I am disheartened that few substantive changes have been proposed since the last comment period. Attempting to muscle the project through--insensitive to the burden it places on the community which is to be its home--is a recipe for failure. It undermines support for development, which is desperately needed in Boston. Perhaps more important, it undercuts support for our elected officials whose approvals should be contingent on the consent of the constituents who elect them.

I look forward to working with the development team and thank you for your understanding.

Regards,
Josh Levin

JOSHUA LEVIN

JL.01 **I'm troubled by the heights of the proposed buildings. The shortest is 96 feet, while the tallest is over 190 feet.**

The Proponent recognizes the concern that the proposed heights exceed those of existing residential buildings along West First Street and acknowledges the importance of honoring the expectations established in earlier stages of discussion. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing condominiums, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

JL.02 **I'd like to advocate that the location of the proposed park be moved to the Pappas Way end of the development—that is, swapping the park with buildings A1, A2 and A3.**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

JL.03 **We need meaningful improvements to the traffic infrastructure along West First Street. Traffic is already problematic in the corridor without 200 new residential units and additional retail.**

Sections 7.5.1.4 and 7.5.1.5 (starting on page 7-36) discuss the street configurations of the Phase 1 Project, including along West First Street. Section 7.7 (starting on page 7-72) discusses the impact of the Phase 1 Project on traffic operations. Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including transportation demand management strategies.

From:	Matthew Martinelli
To:	Nick Carter; Strysky, Alexander (EEA); MA Sen Nick Collins; MA Rep David Biele; MASSPORT Andrew Hargens; Dillon, Haley (SEN); MA Shayne Perkins; MASSPORT Tommy Butler; efreni@massport.com; mark.mcgonagle@boston.gov; james.jemison@boston.gov; lydia.polaski@boston.gov; casey.a.hines@boston.gov; nupoor.monani@boston.gov; Maura Martinelli
Subject:	Reserved Channel Master Plan Comments
Date:	Friday, June 21, 2024 10:39:52 AM
Attachments:	RC Development.pdf

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I'm writing with attached comments on the proposed plan at the Reserved Channel. As a CAC member, I have severe misgivings over the speed of which a master plan for 42 acres has sped through approval. It's been two months since the community process began and we're one week away from the state issuing approval that will pave the way for the majority of this land to be used. During that time, the developer has made no concessions to the community, and has failed to engage Massport on any long-term vision for the land between First and Summer. We need this meeting to occur within the next week before the permit is issued.

I thank you all for your attention on this project. Mater plan comments are attached,
- Matt Martinelli

June 21, 2024

To all members of the BPDA, Massport, and elected officials:

As a member of the CAC for the Oxford/Pappas development along the Reserved Channel, I'm writing to express my deep misgivings for the proposal as it stands, and my concern that the development team - despite listening to the community for more than a year - has made no changes to its plan to reflect the will of the community, the current and future infrastructure in the area, and most importantly, the necessity of coastal resilience in this area.

As a direct abutter to this project, I'm not opposed to the development of these 42 acres generally. But the current process seems rushed without any regard for the surrounding areas nor a general understanding of the issues that this neighborhood of Southie faces.

The problems/solutions/ideas for the current proposal are as follows in order of importance.

1. Location of First Street Park. The developers have acknowledged that the primary reason behind the proposed location of the park in the 42 acres is because of the location of the Fee Simple land (at corner of Pappas Way and W 1st) and the location of the Massport land (primarily the rest of the land in Phase 1). The developer would like to maximize the profits available on the land he owns outright. However, the location as it currently is proposed is about 2 blocks away from an already existing park (Buckley Park). More importantly, if the park were located at the corner of Pappas and W 1st, it would be able to serve a climate resilient role in protecting the existing neighborhood from any flooding from the Reserved Channel. In its proposed location, it no longer borders the channel and couldn't play such a permeable role. The solution to this only requires paperwork and an agreement between officials. To **swap this parcel with a similarly sized one along E St and West 1st** would allow the developers to still hold a valuable Fee simple parcel while also allowing for coastal resiliency and a park that could be used by far more of the existing neighbors on East 1st St (who currently have no nearby park). MMA.01

2. The density of the parcels on the Fee Simple land. The two proposed buildings on the land that Pappas/Oxford own outright are far higher than any existing building in the area. While the developers would like to say they're "stepping up to height," this is simply a sleight of hand they're using by only showing plans for the first 12 acres. It is not a step up to height. It is a huge leap in height for the first building (it will be nearly twice as high as the existing building across the street once you include mechanicals), and it is an atmospheric jump for the second building, which is 230 feet with mechanicals, compared to the existing heights of 35-45 along First Street now. The only thing constraining this parcel from being higher is the FAA map, which restricts it to 235 feet. This density is out of whack with the rest of the neighborhood (which can’t support it with transit or parking) needs to shrink. MMA.02

3. The mixture of office/lab to housing. There are only 200 housing units proposed for phase 1, compared to 1 million square feet of office and lab. Seeing as how this is primarily public land, MMA.03

I don't see how this current mix of uses can be allowed without adjustment. The city and state have a moral obligation to push for more housing amid the current housing crisis. When told of the current office/lab vacancy and the millions of square feet unbuilt but permitted, the developer cited they're taking the long view. But one way to help ensure commercial property citywide doesn't fall further in value is to restrict it on the supply side. Adding 1M in office/lab (and 6M in total of office/lab space over the 42 acres) will only hurt future commercial property values across the city.
A secondary reason for adding more housing and less office/lab is traffic. While any development will bring parking issues (also not solved for in this plan), it's the office and labs that bring traffic - not housing. And since the transportation options in this area are one jam-packed bus that only runs 6 days a week or a different jam-packed bus that runs 7 days a week, I can safely say that most folks working here will be driving.

4. **Future Pedestrian-Only Use of Pappas Way.** As my fellow CAC member Larry Chan and many others have voiced, this proposal should be built with a long-term goal to build F from First Street to Summer (thereby lifting the USPS hold on the Massport land), but also to then close Pappas Way to vehicular traffic. That road would be duplicative and it would better serve many purposes: MMA.04

- **Coastal Resilience.** By having all of Pappas Way as a pedestrian and bike area, it would allow for more permeable surfaces that could better protect from Reserved Channel flooding.
- **Land Use.** By closing off Pappas Way from vehicular traffic, you would make the waterfront better serve its original purpose of passive recreation. The area is a key connector for many on foot from Southie to Seaport/Fort Point/Flynn Marine Park. Making it even more pleasant and appealing would better connect these disparate neighborhoods, in a way that the Boston Common serves as a connector from Downtown to Beacon Hill to Chinatown to Back Bay.

5. **Wider First Street.** Another idea that was brought up in the SB TAP plan as well as in the meetings was the idea that First Street needs to be wider.Each side of the street should be able to fit: Sidewalks, trees, bike lane, parking lane, travel lane. This has long been a goal of the BPDA on First Street and it is ignored by the developers. A portion of the land along FIrst Street should be donated back to the city in an effort to reach this goal. While most of the southern part of East and West 1st has been developed, the northern side has not, and this offers a great opportunity to set a new standard for all of First Street, which would connect with Farragut, Day, Dorchester, and Old Colony to provide a grand multimodal necklace around Southie. MMA.05

6. **Parking & Transportation.** There has been no plan presented for parking, which is unacceptable for a project of this size. Additionally, there is no contribution to better the transportation system. Funding should at least go to make the 7 bus run on Sundays since there is otherwise no transit on Summer Street, and we all know there are no plans and no current transit on First Street. Some sort of annual transportation contribution should be set up, especially as the city considers an internal bus system that might include a route from Pappas to North Station. MMA.06

7. **Building Uses.** I would like to see one of the housing buildings set aside for seniors, and I think the ground floor of that space would be perfect for a senior community center, of which the city only has two in total. Part of my hope is that space can also be found for a pool that is open to the public (since BAC's pool has been closed as part of this development), and I urge the developers to engage with the YMCA on running some ground floor space, which would offer: pool, gym and child care services. Additionally, if the civic space is to go to a nonprofit, I know a public process must be followed, but a youth-oriented passive recreation group such as Y.E.S. could likely program (running, skating, biking) for the space in a way that would be inclusive and complimentary to the surroundings. MMA.07 MMA.08

While this may seem like a lot to ask, there are 42 acres of space. It is nearly 3 times the size of the Edison project and it is primarily on public land. I would ask that there be no 7-figure community benefit project and that instead, these wishes, which are reflected by many abutters and neighbors, be granted in order to maximize the success and public use of this development for generations to come.

Thank you for your attention to this matter.

Sincerely,
Matt Martinelli
407 East 1st St.
Boston, MA

MATTHEW MARTINELLI

MMA.01 **Location of First Street Park. The developers have acknowledged that the primary reason behind the proposed location of the park in the 42 acres is because of the location of the Fee Simple land (at corner of Pappas Way and W 1st) and the location of the Massport land (primarily the rest of the land in Phase 1). To swap this parcel with a similarly sized one along E St and West 1st would allow the developers to still hold a valuable Fee simple parcel while also allowing for coastal resiliency and a park that could be used by far more of the existing neighbors on East 1st St (who currently have no nearby park).**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

MMA.02 **The density of the parcels on the Fee Simple land. The two proposed buildings on the land that Pappas/Oxford own outright are far higher than any existing building in the area.**

Section 1.2.4 (starting on page 1-5) discusses the designs in respect to the adjacent residential neighborhood through a graduated approach to building heights and massing.

MMA.03 **The mixture of office/lab to housing. There are only 200 housing units proposed for phase 1, compared to 1 million square feet of office and lab. Seeing as how this is primarily public land, I don't see how this current mix of uses can be allowed without adjustment.**

The Master Plan Project now proposes that the buildings on Blocks A and B be primarily residential use.

MMA.04 **Future Pedestrian-Only Use of Pappas Way. As my fellow CAC member Larry Chan and many others have voiced, this proposal should be built with a long-term goal to build F from First Street to Summer (thereby lifting the USPS hold on the Massport land), but also to then close Pappas Way to vehicular traffic.**

The Proponent appreciates and shares in the vision and agrees that, over the full build-out of the Master Plan Project, both the extension of F Street to Summer Street and the potential of a pedestrian-centric transformation of Pappas Way are important considerations for the district's long-term mobility. In the full-build condition, Pappas Way is proposed to be closed on the northern and southern ends, with north-south traffic being directed to F Street between West First Street and Summer Street.

MMA.05 **Wider First Street. Another idea that was brought up in the SB TAP plan as well as in the meetings was the idea that First Street needs to be wider. Each side of the street should be able to fit: Sidewalks, trees, bike lane, parking lane, travel lane.**

Sections 7.5.1.4 and 7.5.1.5 (starting on page 7-36) discuss the street configurations of the Phase 1 Project, including along West First Street. Section 1.2.4 (starting on page 1-5) discusses the massing designs and street width in respect to the adjacent residential neighborhood through a graduated approach to building heights and massing.

MMA.06 **Parking & Transportation. There has been no plan presented for parking, which is unacceptable for a project of this size. Additionally, there is no contribution to better the transportation system. Funding should at least go to make the 7 bus run on Sundays since there is otherwise no transit on Summer Street, and we all know there are no plans and no current transit on First Street.**

Sections 7.5.1.2 (starting on page 7-32) and 7.6.1.3 (page 7-57) discuss the Phase 1 Project and Master Plan Project parking program, respectively. Section 7.9 (starting on page 7-95) discusses proposed mitigation measures, including transit mitigation in Section 7.9.3 (page 7-101).

MMA.07 **Building Uses. I would like to see one of the housing buildings set aside for seniors, and I think the ground floor of that space would be perfect for a senior community center, of which the city only has two in total. Part of my hope is that space can also be found for a pool that is open to the public (since BAC's pool has been closed as part of this development), and I urge the developers to engage with the YMCA on running some ground floor space, which would offer: pool, gym and child care services.**

The Proponent will work with the City, Massport, and community to determine appropriate residential types.

MMA.08 **I'm troubled by the heights of the proposed buildings. The shortest is 96 feet, while the tallest is over 190 feet.**

The Proponent recognizes the concern that the proposed heights exceed those of existing residential buildings along West First Street and acknowledges the importance of honoring the expectations established in earlier stages of discussion. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge

condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing condominiums, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

From:	Kate Gutierrez
To:	Nick Carter; Mark McGowan
Cc:	Nupoor Monani; Lydia Polaski; Edward Flynn; Charles Levin; Erin Corcoran; Mark.McGonagle@Boston.gov; aimee.chamber@boston.gov; Strysky, Alexander (EEA); kate.harson@mass.gov; Biele, David (HOU); Perkins, Shayne (HOU); Kate Gutierrez
Subject:	Re: Reserved Channel BPDA Page (Meeting Videos Missing?)/Extending Comment Period Deadline?
Date:	Sunday, June 23, 2024 4:52:49 PM
Attachments:	June 21 2024 Public Comment_Kate Gutierez South Boston Resident.pdf

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Mark (McGowan) and Nick,

Hope you've had a great weekend! It's busy season at my full-time job – more than ever I am often not able to keep up with "volunteer work" until the weekends. I understand that the public comment period closed on Friday and the portal to submit comments has been removed from the BPDA's web page at this time.

Here are my comments, pasted below and attached, if you will still accept them at this time. Thank you for your consideration.

Very best regards,
Kate Gutierrez
547 East First Street
Mobile 617.595.7894

June 21, 2024 Public Comment from Kate Gutierrez, South Boston resident and homeowner since 2002

As a resident of First Street who has attended more than 10 meetings, workshops and a site walk, from summer 2021 through May 2024, on Oxford/Pappas' plans for the future of this parcel (most recently coined "Reserved Channel Development") I respectfully submit my comments on Phase 1 proposal as follows:

- The proposed building heights are excessive and wildly out of line with current zoning. The developers have made clear, and we do understand that you are not technically required to follow any existing zoning. However, it had been presented early and often over the past three years that any new buildings proposed by Ox/Papp directly across the street from existing condos/current residents on West First would be designed at similar heights and massing as the existing condos. This proposal does not reflect or honor that discussion. KG.01

- The location of the proposed park should be shifted east, swapped with the proposed KG.02

A1 and A2 structures, so that the park moves to the neighborhood-critical intersection of West First, East First and Pappas Way. This would put the park closer to and adjacent to and make it an extension of the Reserved Channel basin and a much more meaningful new open space in the center of all South Boston. The current proposal has a park sited in a less inspired location, slotted between excessively high buildings at F Street. Moving this open space next to Pappas Way would begin to advance the "community waterfront" and "basin walk" concepts that were presented early and often in previous meetings and workshops hosted by the developers. It would also provide a natural buffer from any future rising seas and surges/flooding from the Reserved Channel.

- I applaud the plans for generous setbacks, wide sidewalks and attractive landscaping proposed by the developers. Furthermore, I fully endorse the brilliant idea by CAC Member Larry Chan to leverage the existing generous width of First Street, as part of the development of this project, to create balance and improved quality of life on both the north and south sides of West First Street. As this project builds its sidewalks and landscaping on the north side of First Street, it can simultaneously widen the sidewalks and landscaping on the south side of the street to match. This would make the West First Street "boulevard" more attractive overall and would help reduce the heat island effect the neighborhood currently suffers from. Making uniform improvements on both sides of the street would not only offer a benefit to the West First Street residents who will bear and live through the greatest construction impacts, it would by leaps and bounds improve pedestrian safety and access along the corridor for all! Importantly, this would also set a precedent for all future development projects along the West Street corridor.

KG.03

Thank you for your consideration, Kate Gutierrez, 547 East First Street, Boston, MA 02127

From: Nick Carter <nick.carter@boston.gov>
Sent: Tuesday, June 4, 2024 11:39 AM
To: Kate Gutierrez <kategutierrez@hotmail.com>
Cc: Mark.McGonagle@Boston.gov <mark.mcgonagle@boston.gov>; Nupoor Monani <nupoor.monani@boston.gov>; Lydia Polaski <lydia.polaski@boston.gov>; Edward Flynn <ed.flynn@boston.gov>; Charles Levin <charles.levin@boston.gov>; Mark McGowan <MMcGowan@oxfordproperties.com>
Subject: Re: Reserved Channel BPDA Page (Meeting Videos Missing?)/Extending Comment Period Deadline?

Hi Kate,

The issue with the videos has been resolved and all videos are on the site and accessible. We will continue to hold the 7th as the end of the comment period, but if you need the weekend to finish your comments, please let me know to expect a late comment letter that I can include in

the general comment package.

On Sun, Jun 2, 2024 at 5:03 PM Kate Gutierrez <kategutierrez@hotmail.com> wrote:

> Dear Nick, Mark and Nupoor,
>
> Hope you all are doing well!
>
> I am following up on these questions/issues that were brought up several times during the May 22 6-8 PM hybrid zoom/in-person public meeting on the Reserved Channel project.
>
> During the May 22 meeting Nick had noted that the videos of the May 8 and May 15 meetings were not properly posted yet, due to some glitch, but you assured us they would be soon, on the BPDA site.
>
> At that May 22 meeting you also offered to extend the comment period by one week to June 7 – which would give those of us who had not been able to attend all four Wednesday-night-in-May consecutive meetings – a chance to view the videos and catch up before submitting our comments.
>
> It was asked by CAC member Ann Sanders and others that you consider an even longer extension, given how much information had been shared in a very short period of time. I understand others have since made the same request, will you be extending?
>
> Today, June 2, I still cannot find the May 8, 15 or May 22 meeting videos on the BPDA pages for this project: https://www.bostonplans.org/projects/development-projects/reserved-channel
>
> I could be missing them, but I have looked everywhere? I do see the slide deck presentations posted, but I do not find the recordings of the meetings.
>
> Please advise. If the meeting videos have not been posted yet, it seems that the comment period needs to be extended further.
>
> Thank you again, all best,
> Kate Gutierrez
> Mobile 617.595.7894

--
Best,

Nick Carter

Nick Carter



Senior Project Manager
(He, him, his)
nick.carter@boston.gov

Boston Planning & Development Agency (BPDA)
One City Hall Square | Boston, MA 02201
bostonplans.org

KATE GUTIERREZ

KG.01 **The proposed building heights are excessive and wildly out of line with current zoning. The developers have made clear, and we do understand that you are not technically required to follow any existing zoning. However, it had been presented early and often over the past three years that any new buildings proposed by Ox/Papp directly across the street from existing condos/current residents on West First would be designed at similar heights and massing as the existing condos. This proposal does not reflect or honor that discussion.**

The Proponent recognizes the concern that the proposed heights exceed those of existing residential buildings along West First Street and acknowledges the importance of honoring the expectations established in earlier stages of discussion. Feedback from abutters, the CAC, and City staff has consistently emphasized the need for a sensitive edge condition along West First Street, and this input has directly shaped the current Master Plan Project.

In response, the Master Plan Project now places the lowest heights and most limited massing proposed anywhere in the district along West First Street, with increased setbacks, wider sidewalks, and landscape buffers introduced to preserve a residential scale. While the resulting buildings are taller than the existing condominiums, the program has been shifted away further away from the neighborhood and into the interior blocks, creating a deliberate transition in height and intensity toward the center of the Master Plan Site and the waterfront.

KG.02 **The location of the proposed park should be shifted east, swapped with the proposed A1 and A2 structures, so that the park moves to the neighborhood-critical intersection of West First, East First and Pappas Way. This would put the park closer to and adjacent to and make it an extension of the Reserved Channel basin and a much more meaningful new open space in the center of all South Boston. The current proposal has a park sited in a less inspired location, slotted between excessively high buildings at F Street. Moving this open space next to Pappas Way would begin to advance the "community waterfront" and "basin walk" concepts that were presented early and often in previous meetings and workshops hosted by the developers. It would also provide a natural buffer from any future rising seas and surges/flooding from the Reserved Channel.**

Based on comments from the community, in the full-build condition, the Master Plan Project proposes to put an open space in place of the section of Pappas Way within Block A. A portion of Pappas Way, from its intersection with West/East First Street through the length of Block A's frontage, is proposed to be improved as an interim measure as part of the Block A projects. Provided the long-term objective to decommission Pappas Way along this length for its improvement as a greater public open space, the interim improvement has been proposed to not preclude or challenge this goal. The proposed interim improvement consists of a coordinated adjustment to the street alignment to

increase and prioritize pedestrian safety, temporary streetscape activations to enhance wayfinding, with the complement of increased spatial definition though flexible seating and planting elements. These details can be understood in more detail within the Design Guidelines provided as Appendix A.

The Reserved Channel Basin Loop Harborwalk Project will develop a concept design to complete the Harborwalk loop around the Reserved Channel in South Boston. The project objectives are to ensure that community interests and desires are prioritized in the design process for expanding this area of the Harborwalk, and that future amenities and improvements to public spaces along this waterfront respond to local needs. Funding for the planning of this important project was secured by Senator Collins and Representative Biele as part of the fiscal year 2025 Fair Share Supplemental Budget.

KG.03 **I applaud the plans for generous setbacks, wide sidewalks and attractive landscaping proposed by the developers. Furthermore, I fully endorse the brilliant idea by CAC Member Larry Chan to leverage the existing generous width of First Street, as part of the development of this project, to create balance and improved quality of life on both the north and south sides of West First Street.**

Section 1.2.5 (starting on page 1-21) outlines the changes made to align the streets as a pedestrian-friendly, residential-scale corridor with wider sidewalks.

Appendix A

Phase 1 Design Guidelines

RESERVED CHANNEL DEVELOPMENT

OXFORD

PAPPAS ENTERPRISES, INC.

Phase 1 Design Guidelines
May 12, 2026

SOM **SCAPE**

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- F Street
- Road 1 (Interim Improvements)
- Road A, B, C (Interim Improvements)

3. Building Design Guidelines

Overview

- Height Control
- Massing Expression and Articulation
- Building Height and Mechanical Enclosures
- Access and Pedestrian Prioritization
- Building Frontages
- Design Expression

Block A Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

Block B Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

Block C Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

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1. PLANNING ORIENTATION

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Intent of Design Guidelines

These Design Guidelines have been developed to **ensure design excellence** in the public spaces, landscape areas, and buildings of the Reserved Channel Development project area. The site — which has evolved considerably and served the region for decades as a working waterfront and center of industrial activity — is poised to become an **integral part of the South Boston community fabric** engaging long-time residents, workers, and visitors in new and productive ways.

As such, these Guidelines provide a **framework** for redevelopment that respects and responds to the area's industrial heritage while supporting a **vibrant, accessible, and resilient mixed-use waterfront district**, while ensuring seamless integration with the scale, character, and patterns of the surrounding residential and commercial neighborhoods.

These guidelines are intended to serve as **the standard for the project's initial phase, while also establishing the quality benchmark for all subsequent developments** in the master plan, ensuring that the character, form, and quality of new development and public spaces contribute positively to the evolving identity of the district and strengthen connections to the surrounding community and the Reserved Channel waterfront.

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Background - Urban Context

The Reserved Channel Development (RCD) **Project Site** is located at the northern edge of South Boston, bounded by the Reserved Channel waterfront to the east, the well-established South Boston neighborhood to the south, the **expansive industrial** and **commercial facilities** of the Raymond L. Flynn Marine Park to the northeast, and the Seaport area to the north.

The approximately **42-acre Reserved Channel Development area** occupies a strategic position between South Boston's established neighborhood fabric, the working waterfront, and the Seaport, reflecting the site's long evolution as part of the city's industrial and maritime landscape.

Project Site

- **Size:** 42 Acres
- **Location:**

  300 West First Street, 647B Summer Street, Ward6, South Boston, MA

- **Existing Conditions:**
  - Large industrial buildings
  - Open-air surface parking lots
  - Reserved Channel edge
  - Open Space with walking paths and historical signage



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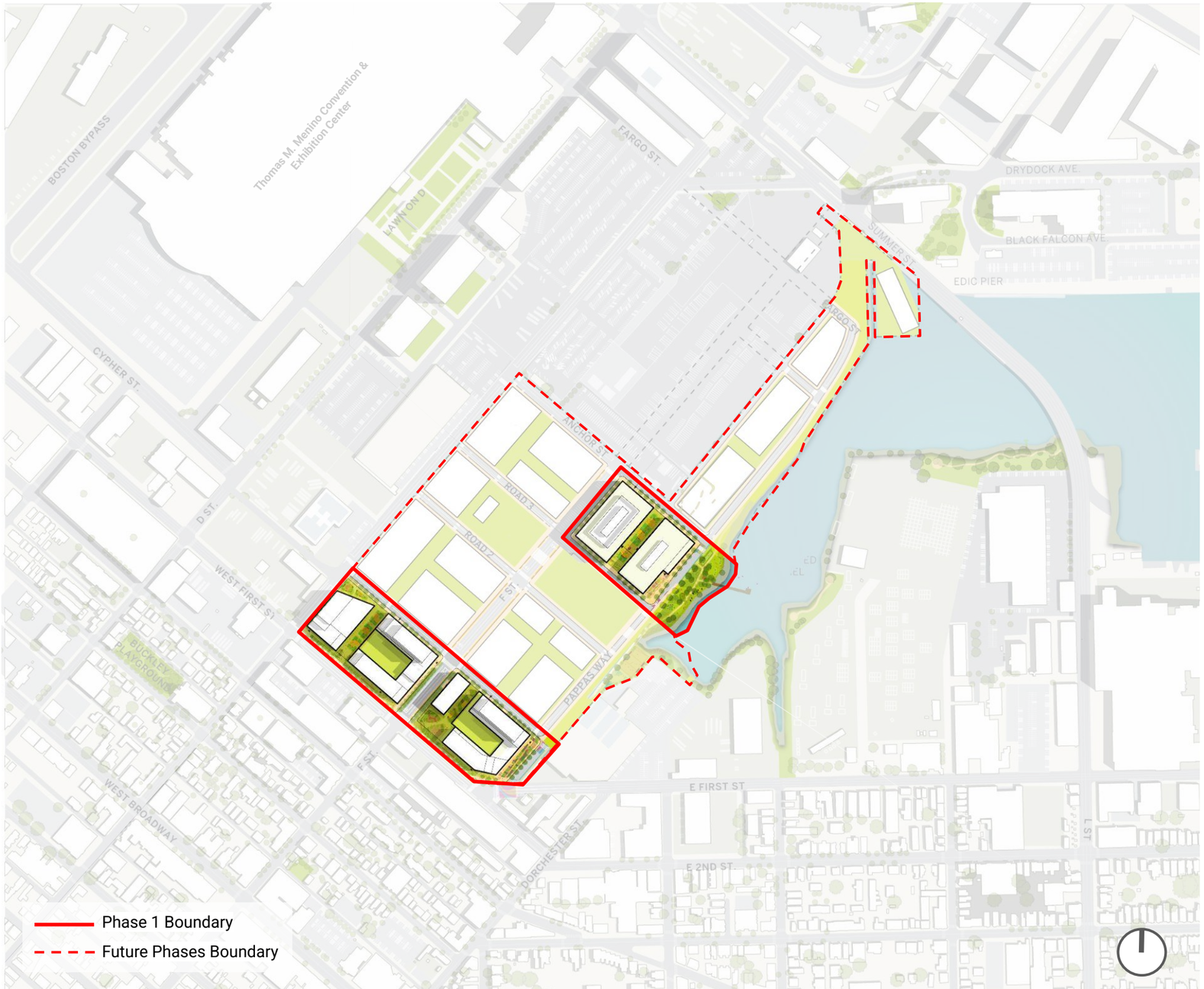
Background - Overall Framework

The vision to transform the majority industrial site is shaped by a set of powerful urban design drivers that respond to the site's **maritime legacy, strategic waterfront location, and role within South Boston and the broader city context.** These drivers inform both the Phase 1 Projects - the subject of these Design Guideline - and the long-term buildout of the 42-acre district. These planning principles provide the foundation for a flexible framework and include:

- **Resiliency:** Enhancement of an Exceptional Waterfront
- **Mobility:** Extension of South Boston's Street Network into a New, Walkable District
- **Open Space:** Creation of a Network of Upland Parks, and Waterfront Destinations
- Implementation with **Phasing and Long-Term Adaptability** in Mind
- A Balanced **Mixed-Use** District
- Strong, **Cohesive Urban Design**

Site Composition

- **Phase 1: 12.86 Acres**
  a. Mix of Massport ground lease and fee simple ownership
  b. Three development blocks
- **Future Phases: 29.14 Acres**
  a. Mix of Massport ground lease and fee simple ownership
  b. Eight future development blocks



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Background - Phase 1

Phase 1 includes **three development blocks ranging in size from 2.2 to 2.8 acres**, **eight buildings** (six residential and two commercial) ranging in scale from 81,000 to 451,000 sf, and **2.76-acres of new public open space**. The Phase reimagines West First Street right of way through an expanded public realm, while interior site access is granted through a new F Street, and several temporary access roads (Road 1 and Roads A, B, and C). Interim waterfront enhancements along Pappas Way promote early activation of the waterfront.

Project Site

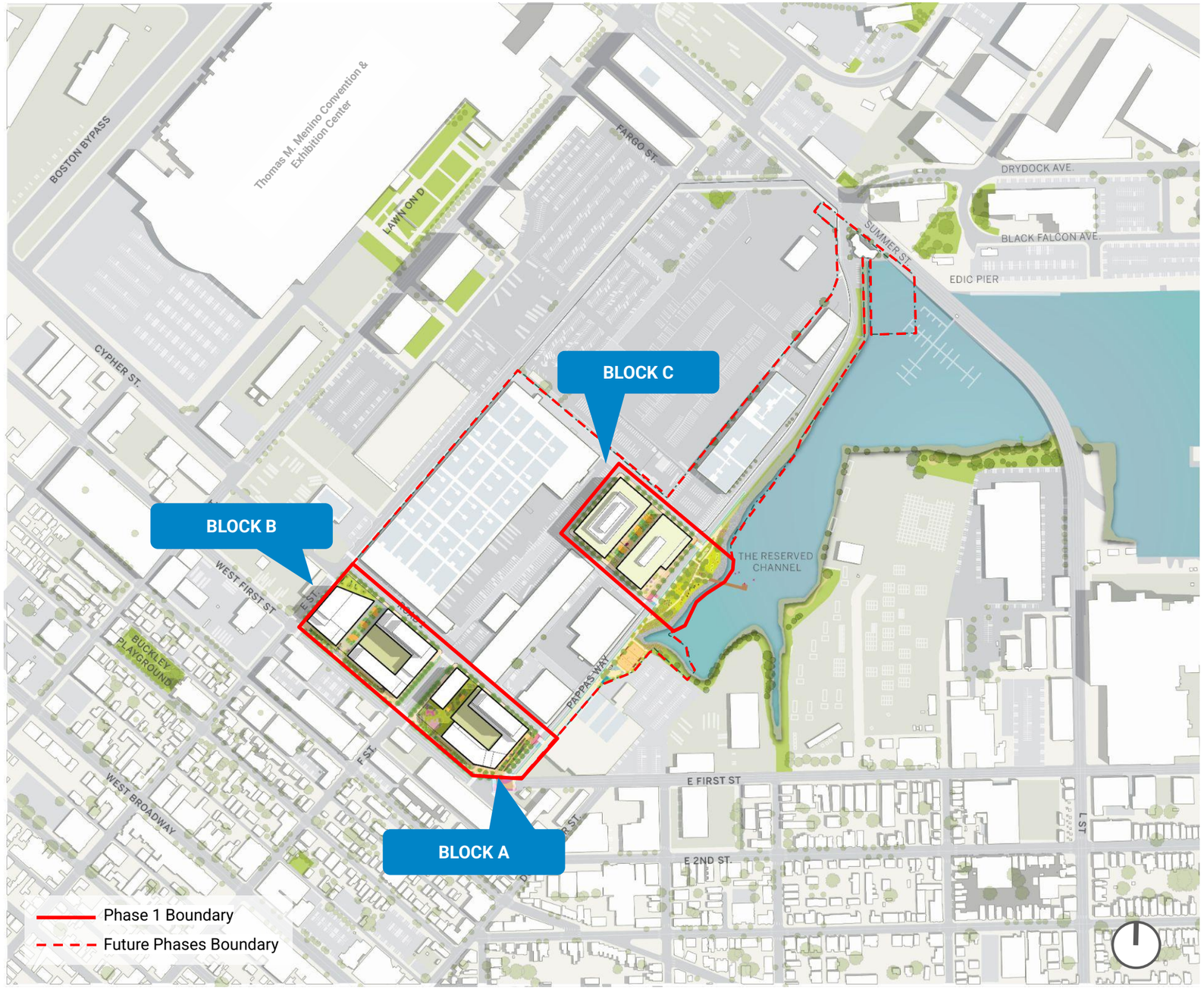
- **Phase 1:**

  12.86-acre within existing 42-acre business park

  a. 10.89-acre Massport ground lease
  b. 1.97-acre fee simple ownership

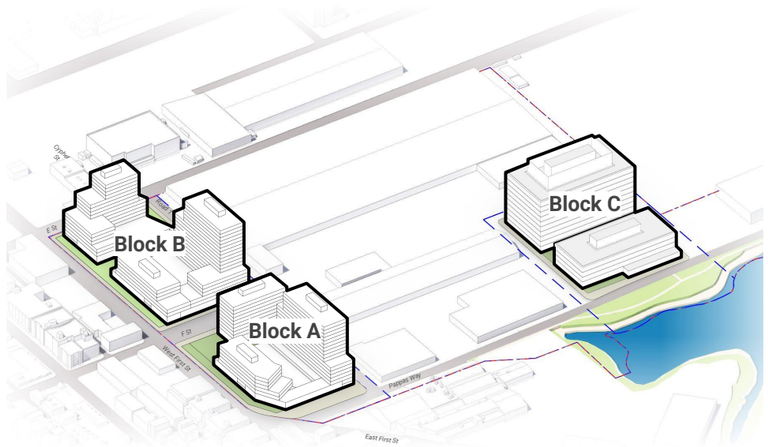
  Three Development Blocks (Eight Buildings)

  a. Block A: 2.3 acres (three residential buildings)
     Block B: 2.9 acres (three residential buildings)
     Block C: 2.4 acres (two commercial buildings)
  b. Open Space: 2.76-acre
  c. New Street: F Street
  d. Temporary Roads: Road 1, Roads A, B, and C



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Block Plan Parameters

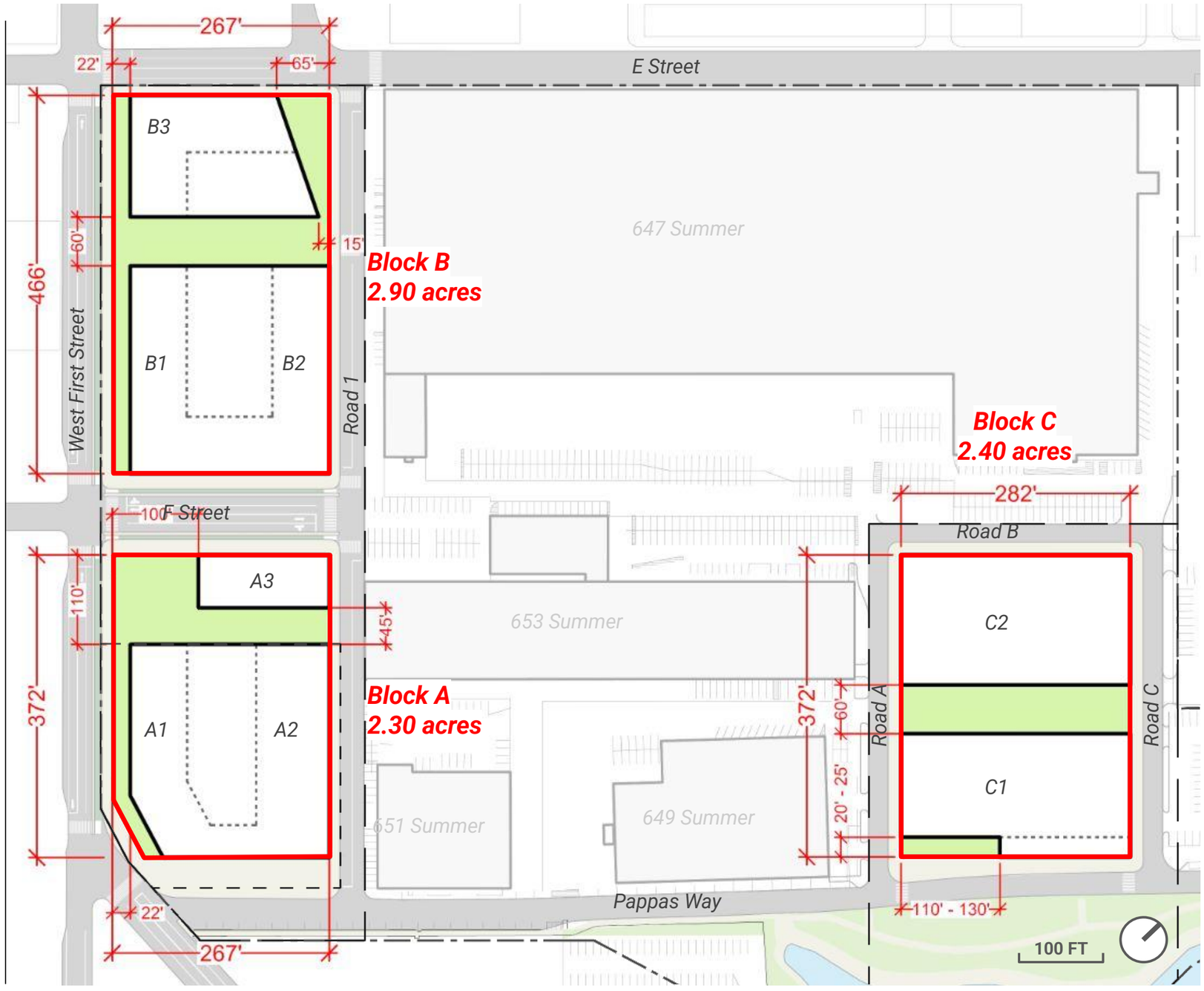


Overview

The Phase 1 Design Guidelines establish **key urban and architectural design parameters** to guide the future design of each building, the proposed open spaces, and the public realm of the streets and sidewalks ensuring that the entire development comes together in a clear, cogent, and coordinated manner.

Depicted here are the dimensioned planning parameters that reflect the **Oxford and Pappas Enterprises' (OxP)** close coordination with **Massport**, the **City of Boston**, and the **South Boston Community**.

As detailed across the following pages, the Design Guidelines endeavor to **first establish a topical overview of approach and subsequently identify** how that strategy is implemented at the scale of each individual open space or building.



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2. PUBLIC REALM DESIGN GUIDELINES

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2. PUBLIC REALM DESIGN GUIDELINES

Overview

- Approach
- Character Zones & Programming
- Resiliency Strategy

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Approach

Phase 1 Public Realm Approach

Phase 1 establishes the foundational public realm framework for the Reserved Channel development, introducing a connected network of streetscapes, open spaces, and landscape corridors that organize the site and link the neighborhood to the waterfront. Tree-lined streets, block landscape corridors, new permanent and interim open spaces work together to create a legible and walkable district that prioritizes pedestrian comfort, active transportation, and access to the water.

The Phase 1 public realm also advances the project's resilience and community goals. Approximately 200 new trees, green stormwater infrastructure, and layered planting strategies support canopy growth, stormwater management, and urban heat mitigation. New civic spaces, including neighborhood open spaces and the waterfront improvements along the Reserved Channel, provide flexible areas for recreation, gathering, and everyday neighborhood life while establishing the identity of the emerging district.



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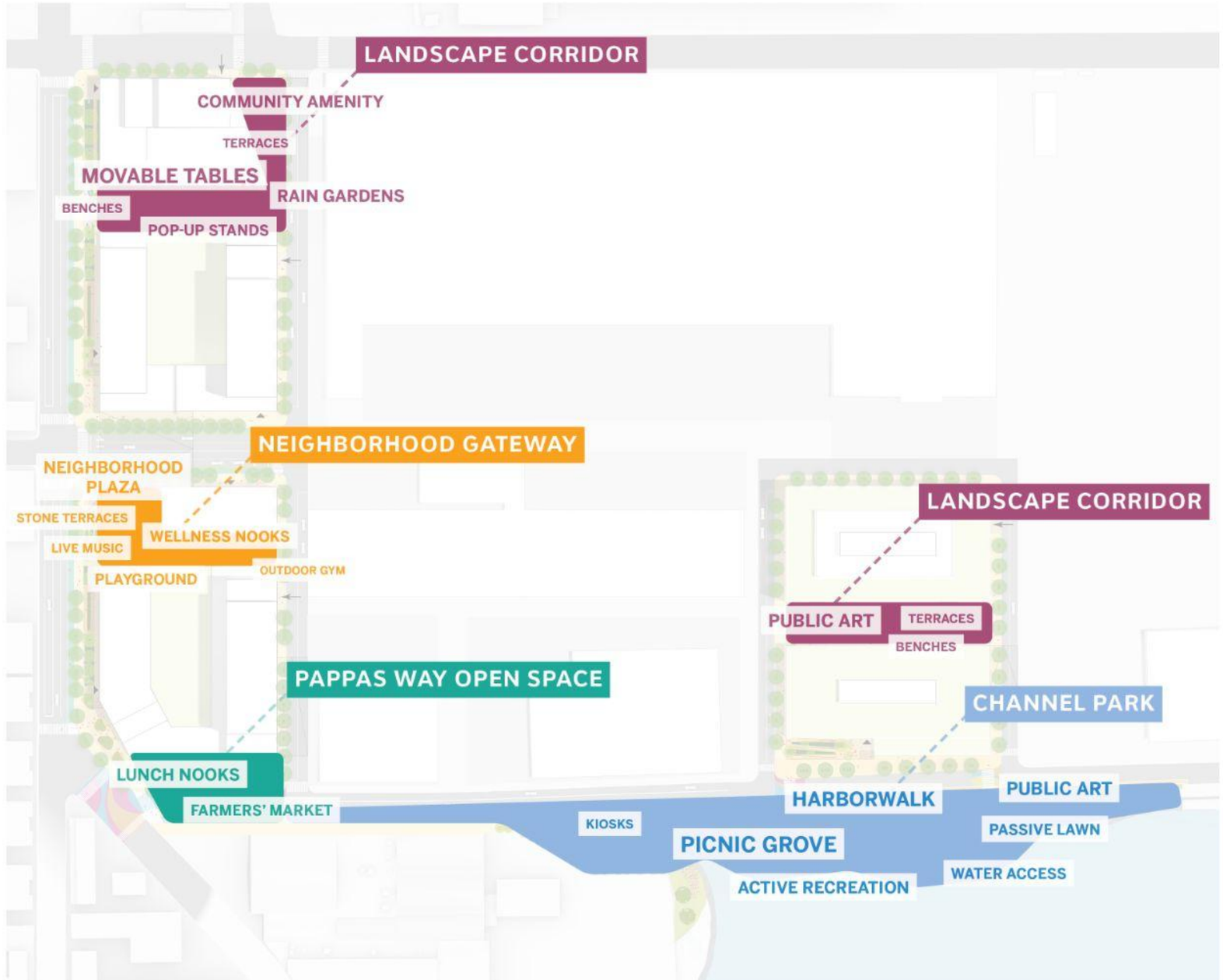
Character Zones and Programming

Phase 1 Character Zones + Programming

Phase 1 organizes the public realm into a series of distinct landscape character zones that structure the experience of the site and establish the identity of the emerging district. With foundations in a sitewide resiliency response, the open spaces work together to define new public points of entry to the site, introducing the tree-lined landscape environments that will support continuous and resilient pedestrian environments and interconnect streets, open spaces, and building frontages.

The Phase 1 open spaces are designed to support a range of flexible community uses that activate the public realm throughout the day and across seasons. Neighborhood-oriented spaces at the Neighborhood Gateway accommodate everyday recreation and gathering, while landscape corridors intervene to break down the scale of blocks and introduce opportunities for more informal social spaces and temporary programming such as pop-up vendors, food trucks, and small community events.

Along the project's eastern edge, two interim open space interventions begin to establish connections along the length of the site. At the waterfront, Channel Park introduces opportunities for recreational uses, while at Pappas Way, an expanded public realm promotes improved access and variable programming.



Resiliency Strategy - Green Infrastructure

Strategy

1. Green infrastructure elements shall be designed in accordance with the City of Boston's guidance in the *Stormwater Tree System Design Guide* and the Boston Water and Sewer Commission's guidance in the *Boston Green Infrastructure Planning and Design Handbook*.
2. Streetscapes and open spaces should incorporate green stormwater infrastructure to capture, slow, and treat runoff prior to discharge to the municipal system and Boston Harbor.
3. Bioretention areas (rain gardens) should be integrated where space allows, using engineered soils and native plantings to filter runoff and improve water quality
4. Stormwater planters may be used along sidewalks, plazas, and street edges where larger bioretention areas are constrained by utilities or limited right-of-way.
5. Bioretention systems and planters should include appropriate soil media, overflow structures, and underdrains as needed, consistent with Boston Water and Sewer Commission guidance.
6. Stormwater tree systems should be prioritized within streetscapes to intercept rainfall, capture runoff, and provide shade that mitigates urban heat island effects
7. Tree planting areas should provide adequate soil volume and continuous rooting space, using structural soil, suspended pavement, or shared soil trenches where feasible.
8. Tree placement should consider utilities, building frontages, and overhead constraints while maximizing canopy coverage and pedestrian comfort.
9. Permeable paving may be incorporated in plazas, sidewalks, and low-traffic areas to reduce runoff and support infiltration where site conditions allow.



Bioretention (Rain Gardens)



Stormwater Tree Systems



Stormwater Planters



Permeable Pavements

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Resiliency Strategy - Tree Canopy

Strategy

The Site, today characterized by widespread impervious surfaces that make it uniquely susceptible to the urban heat island effect and an increasing number of high heat days, is positioned for a transformation through implementation of the Phase 1 projects.

It is estimated that Phase 1 will introduce approximately 200 new trees across streets, open spaces, and landscape corridors with a goal to provide shade, improve microclimate, and mitigate urban heat island effects, supporting the goals of Boston's Urban Forest Plan and Heat Resilience Plan.

Through the prioritization of native or regionally adapted species suited to Boston's climate, approximately 25% canopy coverage of the site can be achieved within the first five years of planting across streetscapes and open spaces. Executed in coordination with the project's Green Infrastructure strategy, the new urban tree canopy will be positioned to support stormwater management, ecological health, and urban habitat for the long term.



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Resiliency Strategy - Open Space Planting

Design Guidelines

1. Open space landscapes shall utilize diverse native and regionally adapted plant communities that support habitat, seasonal variation, and ecological performance.
2. Tree canopy and layered vegetation should create cooling microclimates, helping mitigate urban heat island effects and improve comfort for year-round public use.
3. Planting design should emphasize layered, naturalistic compositions that support biodiversity and create immersive landscape experiences.
4. Plant palettes should balance ecological function, seasonal character, and long-term resilience while remaining adaptable to future site conditions and maintenance needs.


Quercus palustris


Sassafras albidum


Cercis canadensis

GROUNDCOVERS


Rhus aromatica


Aronia melanocarpa


Itea virginica


Eragrostis spectabilis


Deschampsia flexuosa


Tiarella cordifolia


Lobelia cardinalis


Aquilegia canadensis


Penstemon hirsutus

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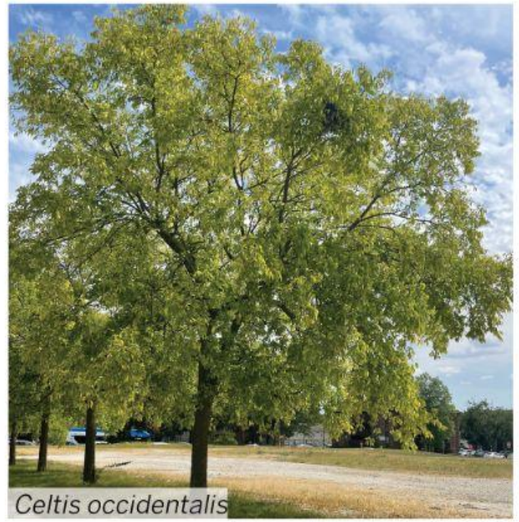
Resiliency Strategy - Streetscape Planting

Design Guidelines

1. Streetscape planting shall prioritize durable canopy trees suited to urban conditions, including constrained soils, roadway salt exposure, and variable moisture.
2. Tree species should be native or regionally adapted and contribute to the district's canopy strategy while providing shade that mitigates urban heat island effects and improves pedestrian comfort.
3. Understory planting should use simple, resilient shrubs and groundcovers that tolerate urban stress while supporting seasonal interest and ecological value.
4. Plant palettes should support stormwater performance, soil health, and long-term ecological resilience, while maintaining sufficient species diversity to reduce vulnerability to pests and disease.


Acer rubrum


Gleditsia triacanthos


Celtis occidentalis

GROUNDCOVERS


Rhus aromatica


Aronia melanocarpa


Itea virginica


Eragrostis spectabilis


Deschampsia flexuosa

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2. PUBLIC REALM DESIGN GUIDELINES

Open Spaces

- Landscaped Corridors
- West First Gateway
- Pappas Way
- Waterfront Improvements

Permanent Improvements

Interim Improvements

Improvements fulfilling an interim use case, anticipated to be superseded, expanded or displaced by future project phases

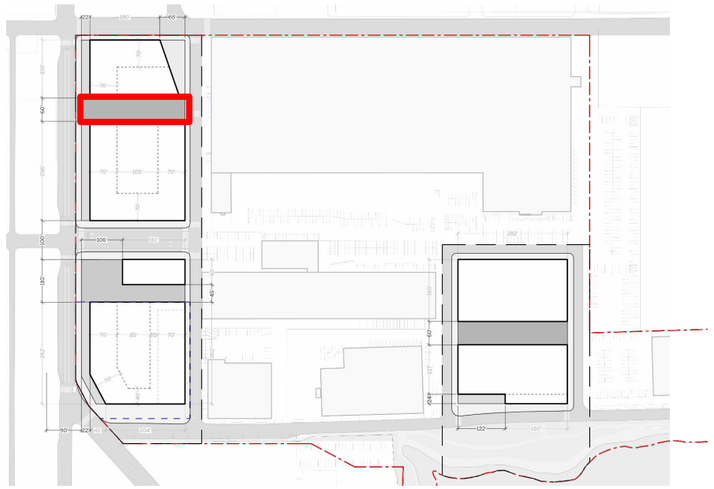
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Landscaped Corridors - Block B



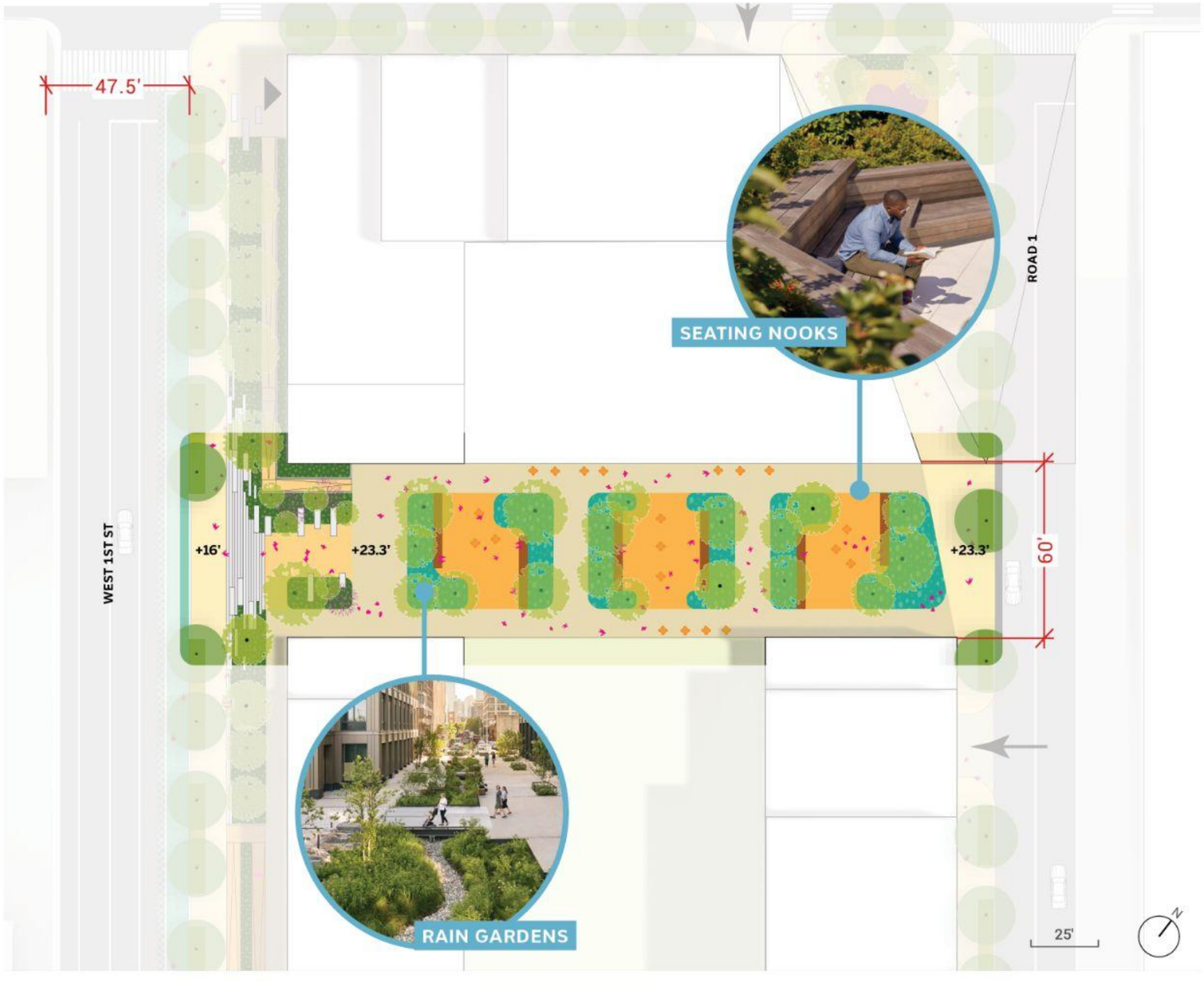
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Landscaped Corridors - Block B



Design Guidelines

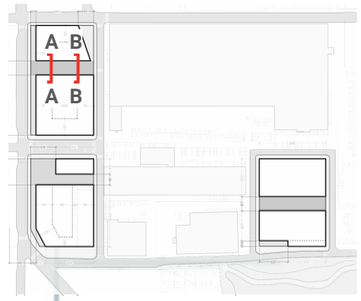
1. The Block B landscape corridor shall provide a pedestrian-oriented open space connection through the center of Block B, linking surrounding streets, building frontages, and adjacent open spaces.
2. The corridor shall support everyday activities including circulation, informal gathering, and outdoor seating associated with adjacent ground-floor uses.
3. Active building frontages shall engage directly with the corridor through entrances, lobby spill-out areas, and outdoor seating where appropriate.
4. Walkways along building frontages shall be a minimum of 10 feet wide and may expand in key locations to accommodate spill-out activity from active ground-floor uses such as café seating.
5. Tree canopy and planting shall be incorporated generously to provide shade, support pedestrian comfort and microclimate, and reinforce the landscape character of the corridor.

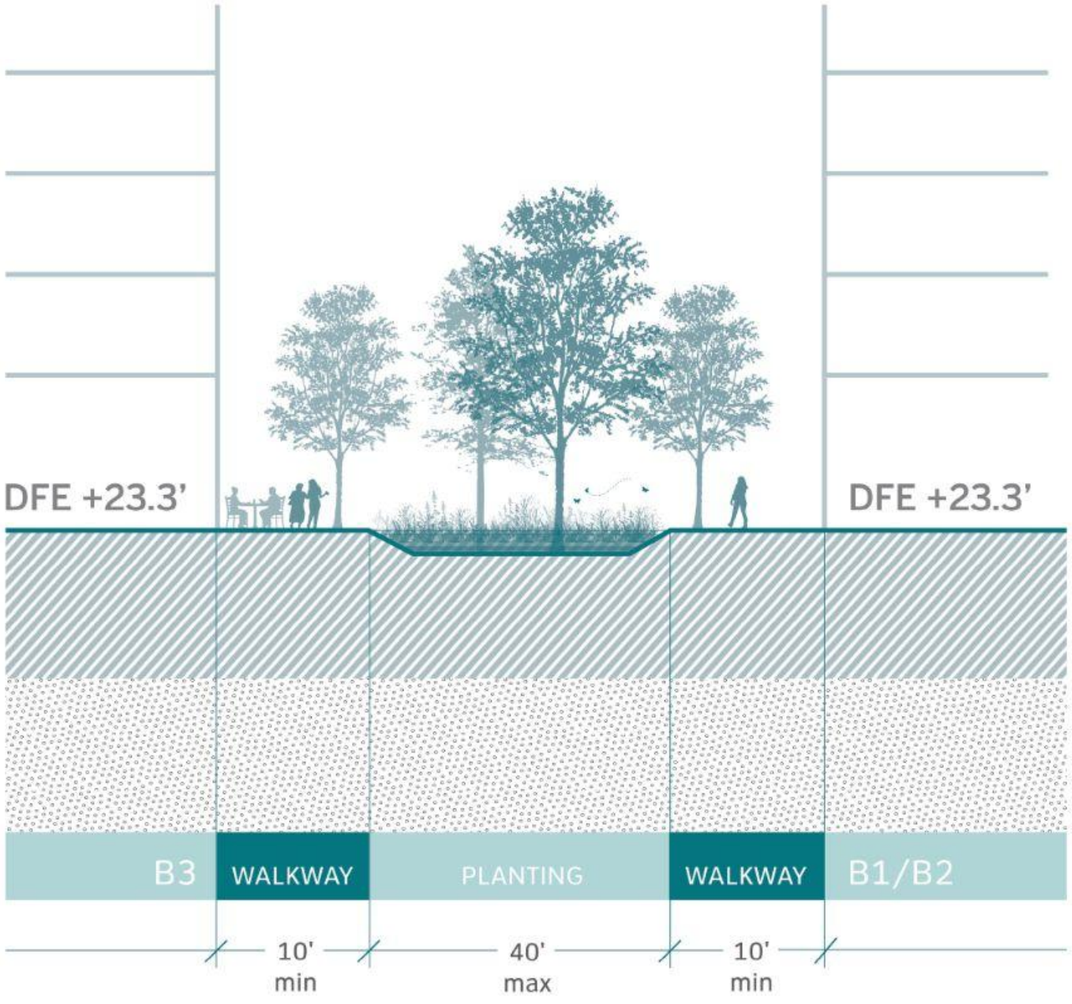


** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

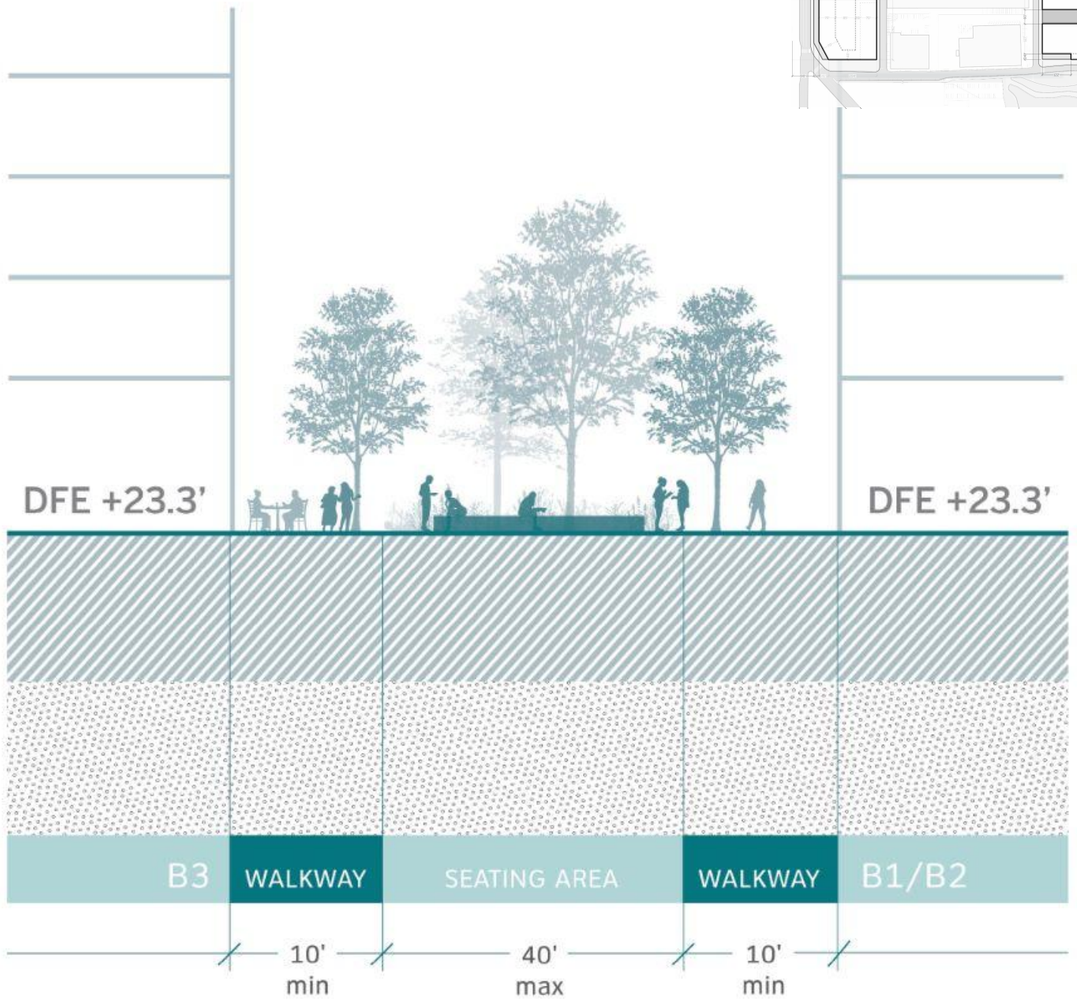
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Landscaped Corridors - Block B





SECTION A



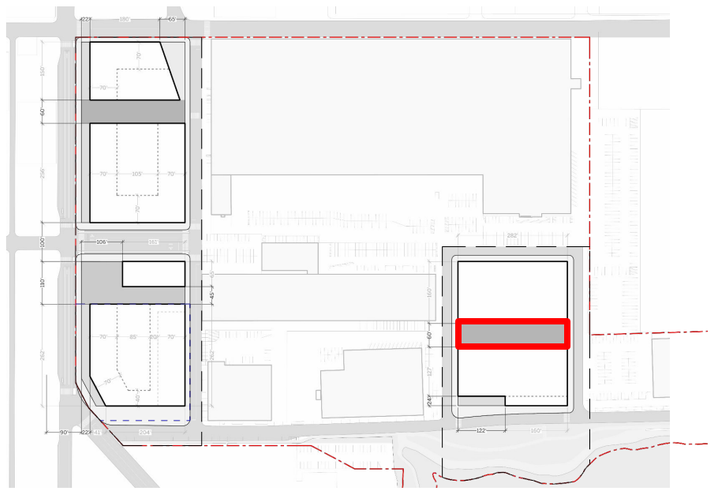
SECTION B

0' 3' 10'

** DFE: Design Flood Elevation*
** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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Landscaped Corridors - Block C



Design Guidelines

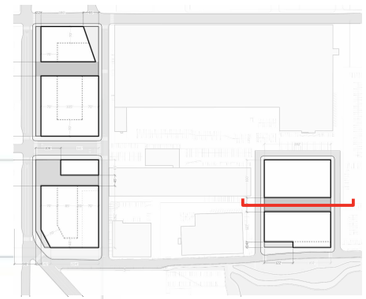
1. The Block C landscape corridor shall provide a pedestrian-oriented open space connection through the center of Block C, linking Road A and Road C and adjacent building frontages.
2. The corridor shall support everyday activities including circulation, informal gathering, and outdoor seating associated with adjacent ground-floor uses.
3. Active building frontages shall engage directly with the corridor through entrances, lobby spill-out areas, and outdoor seating where appropriate.
4. Walkways along building frontages shall be a minimum of 10 feet wide and may expand in key locations to accommodate spill-out activity from active ground-floor uses such as café seating.
5. Tree canopy and planting shall be incorporated generously to provide shade, support pedestrian comfort and microclimate, and reinforce the landscape character of the corridor.

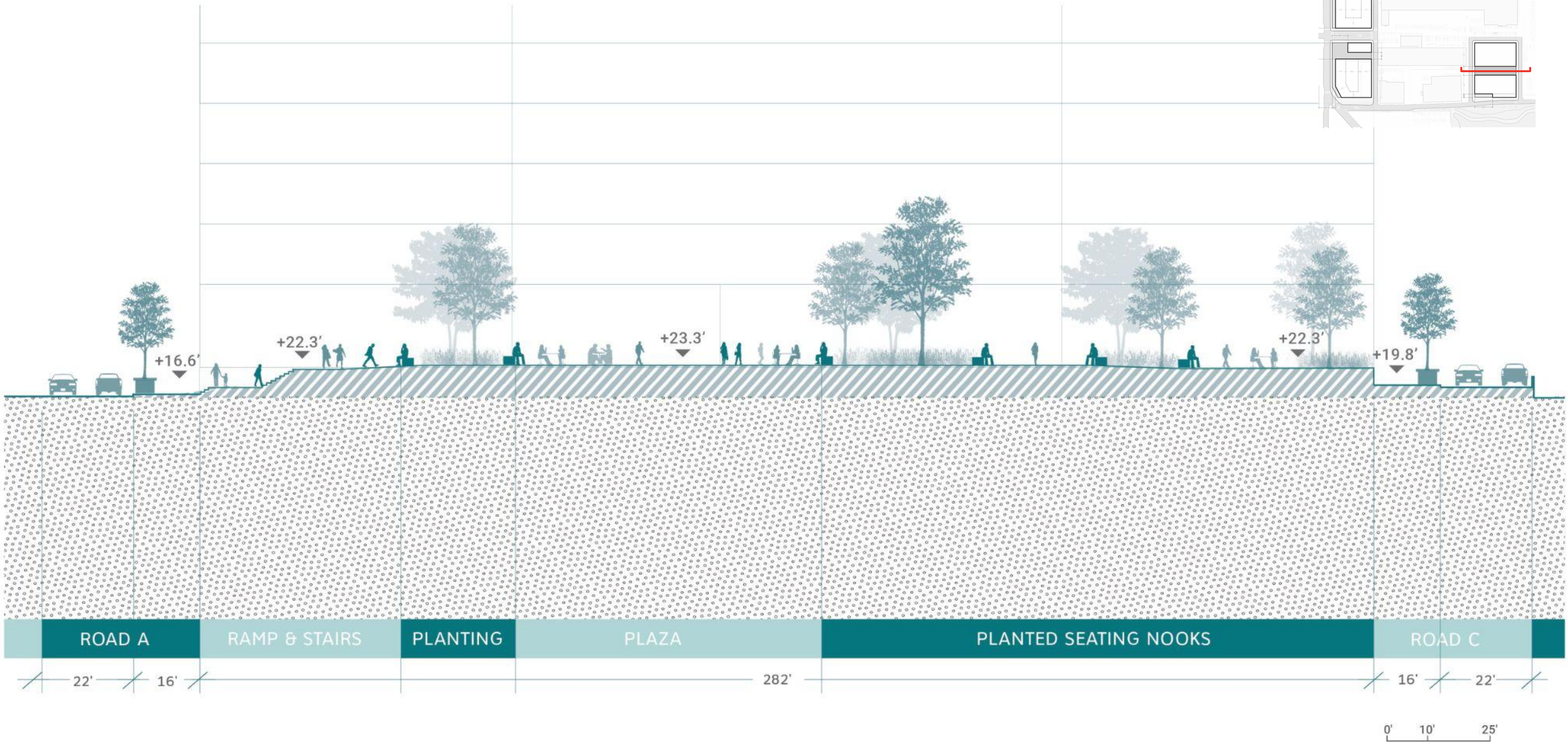


** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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Landscaped Corridors - Block C





** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

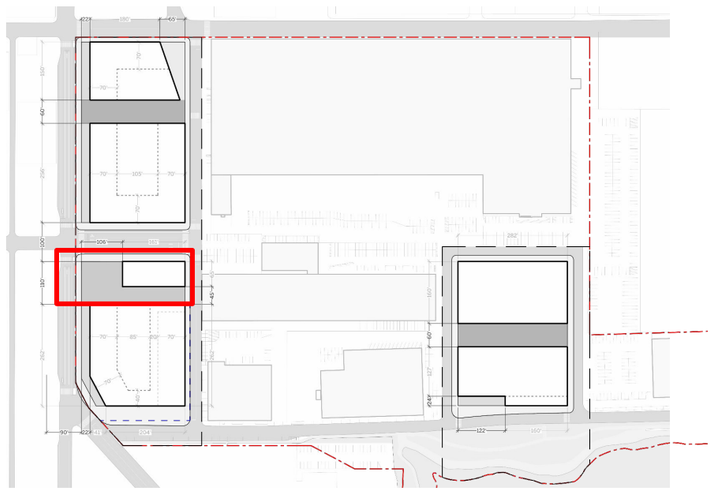
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West First Gateway



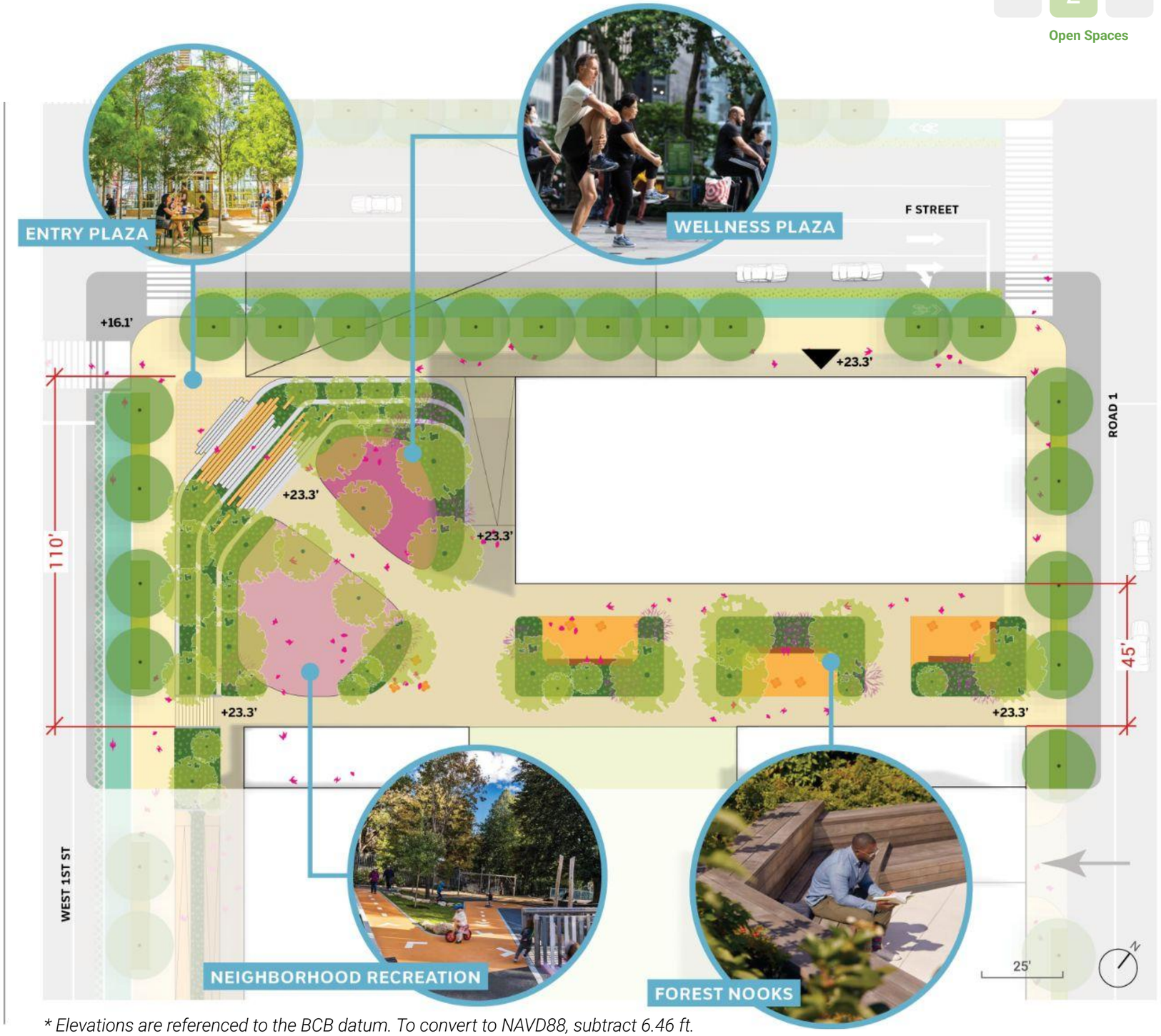
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West First Gateway



Design Guidelines

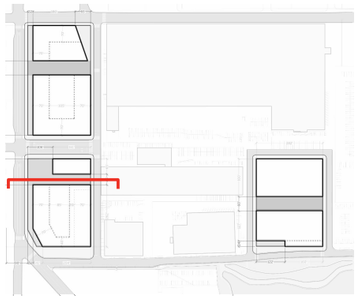
1. An open entry plaza shall be located at the corner of West 1st Street and F Street, creating a clear and inviting gateway into the site.
2. The West First Gateway shall function as a welcoming neighborhood park and entry space for the South Boston community, serving existing and future residents, patrons and employees.
3. The park shall incorporate active, multigenerational neighborhood amenities that support a range of community uses and informal gatherings.
4. These amenities may include spaces for wellness and quiet activity, such as yoga, tai chi, or contemplation, as well as active neighborhood uses such as play environments or flexible recreation areas.
5. Planting and tree canopy shall be incorporated generously to support pedestrian comfort and microclimates while reinforcing the landscape character of the park.

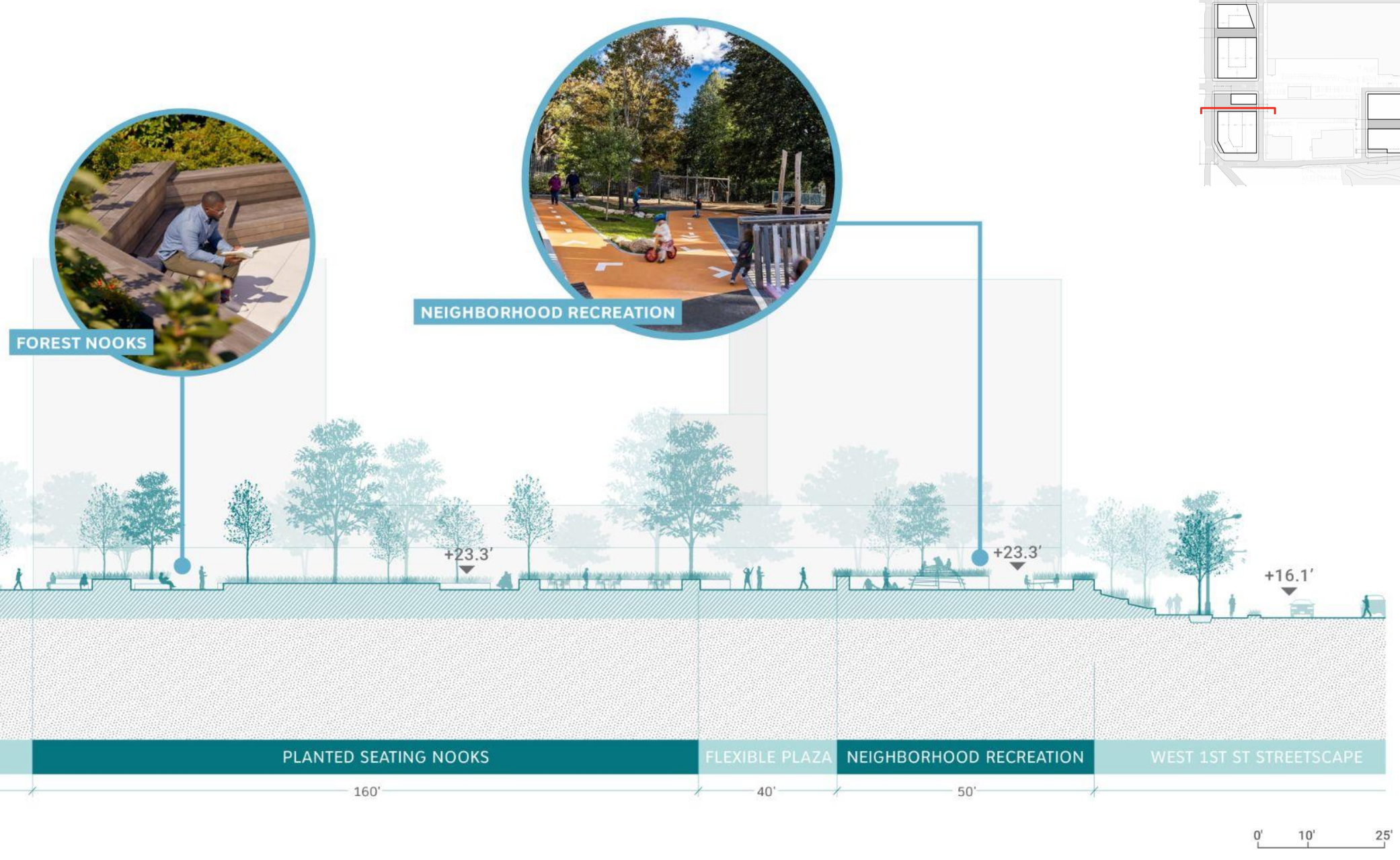


** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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West First Gateway

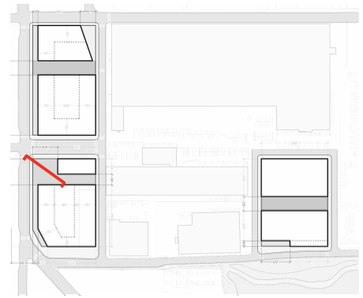


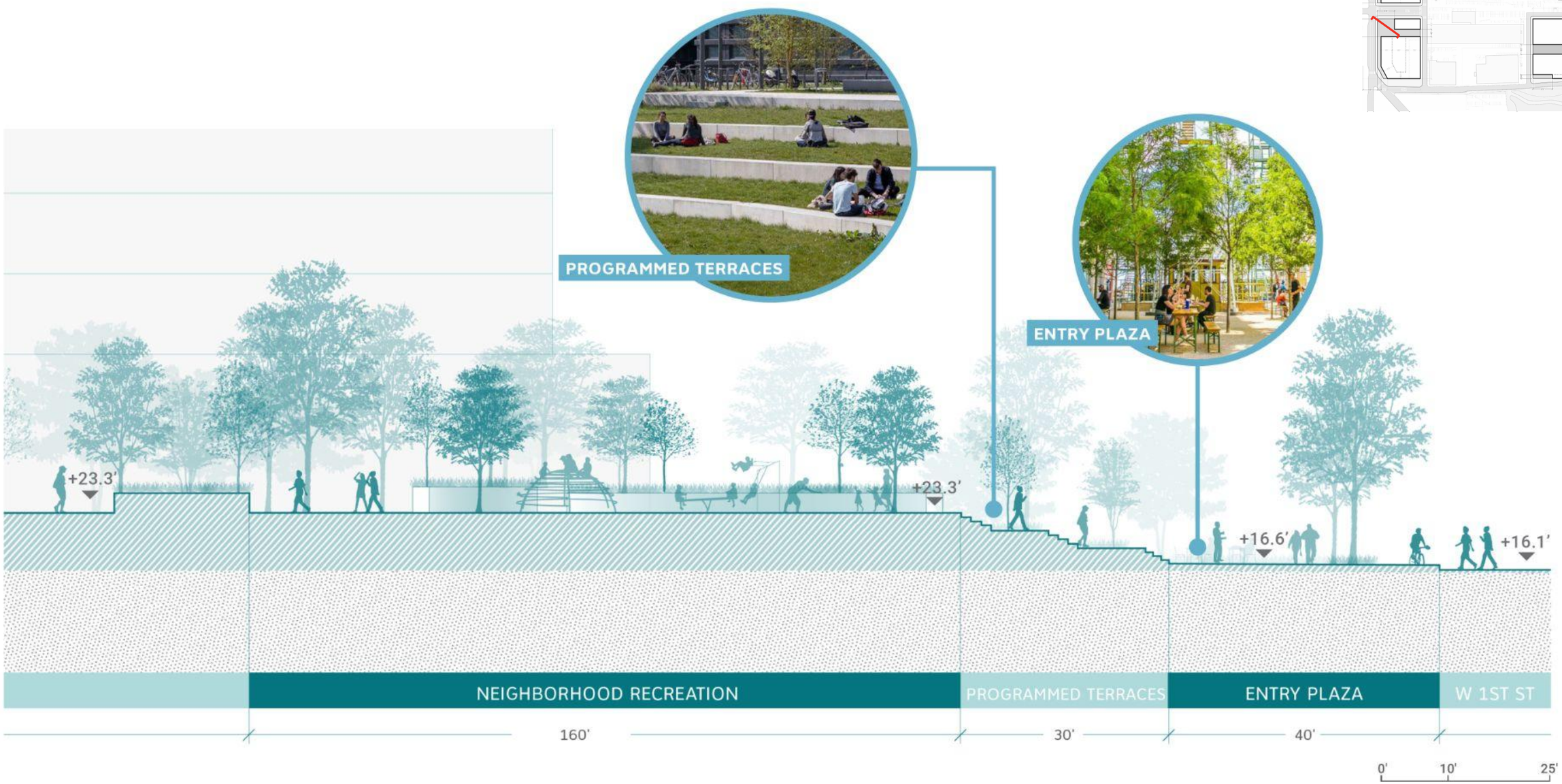


** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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West First Gateway





** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

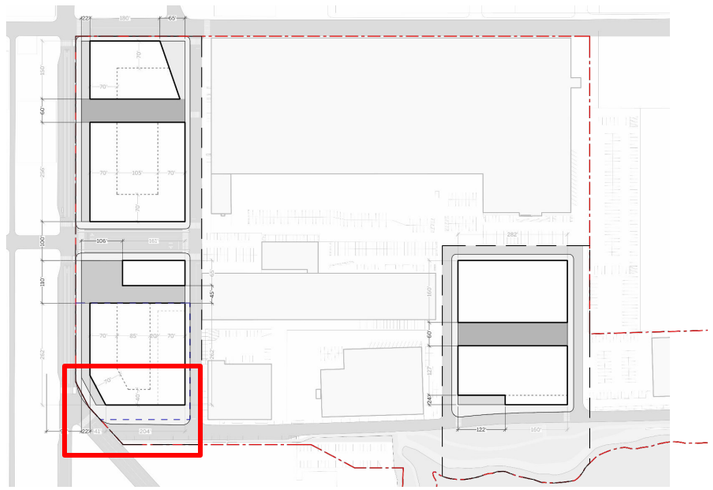
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Pappas Way *(Interim Improvement)*



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Pappas Way *(Interim Improvement)*



Design Guidelines

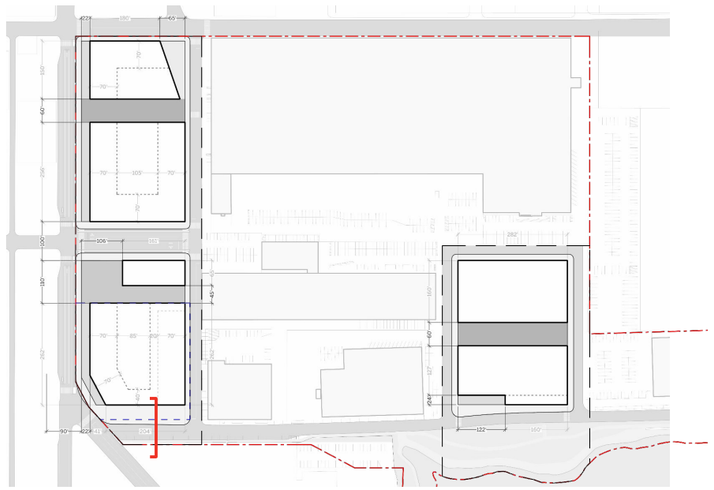
1. As an interim improvement, The Pappas Way open space shall be planned to not preclude or challenge the long-term objective to decommission Pappas Way between Road 1 and West First Street for its improvement as a greater public open space.
2. Adjustment to street alignment will be planned in coordination with Massport and the City of Boston with a goal to increase and prioritize pedestrian safety, access, and visibility throughout the intersection by way of clear pedestrian routes and traffic-calming streetscape treatments.
3. Temporary streetscape activations, including paving or crosswalk art, may be incorporated to enhance wayfinding and signal the transitioning identity of the district to promote accessibility to the waterfront. Opportunities to collaborate with local artists or community groups in the design and implementation of these installations should be explored.
4. A shared-use path shall be incorporated along Pappas Way, extending the continuity of the existing network along the Reserved Channel.
5. Planting, seating, and interim planter boxes shall provide shade, comfort, and spatial definition while remaining flexible for the future raised street condition.



** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

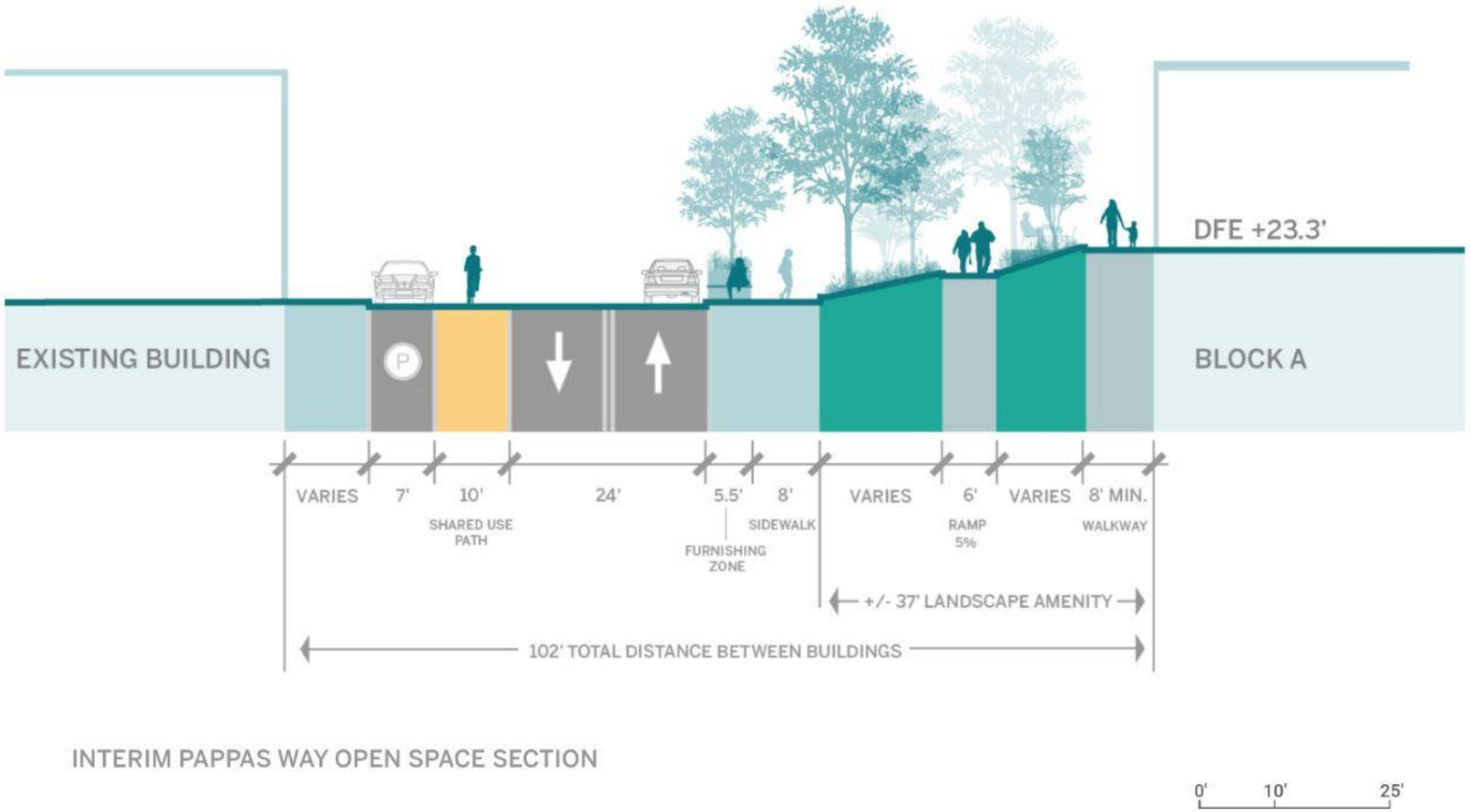
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Pappas Way *(Interim Improvement)*



Design Guidelines Continued

6. The Pappas Way open space shall accommodates the grade difference between the existing street elevation and the future resilient development floor elevation (DFE) through ramps, stairs, and planted slopes.
7. The landscape edge should functions as a topographic transition zone, integrating accessible routes while softening elevation changes through planting and landscape terraces.
8. Planting areas and landscape slopes shall support stormwater management, canopy growth, and microclimate comfort as part of the district's green infrastructure strategy.
9. The interim design should foster allows the public realm to function effectively public utility of the space in the interim condition while maintaining flexibility to adapt to future street elevation adjustments associated with long-term coastal resilience planning.



INTERIM PAPPAS WAY OPEN SPACE SECTION

** DFE: Design Flood Elevation*

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

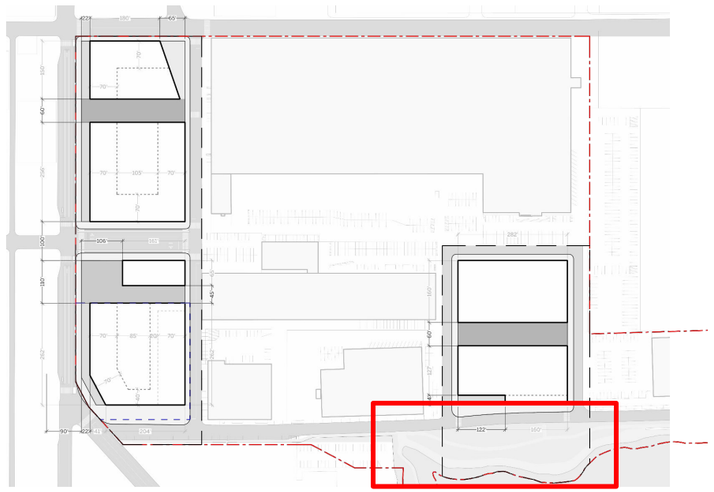
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Waterfront Improvements *(Interim Improvement)*



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Waterfront Improvements *(Interim Improvement)*



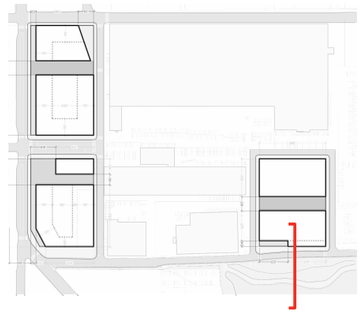
Design Guidelines

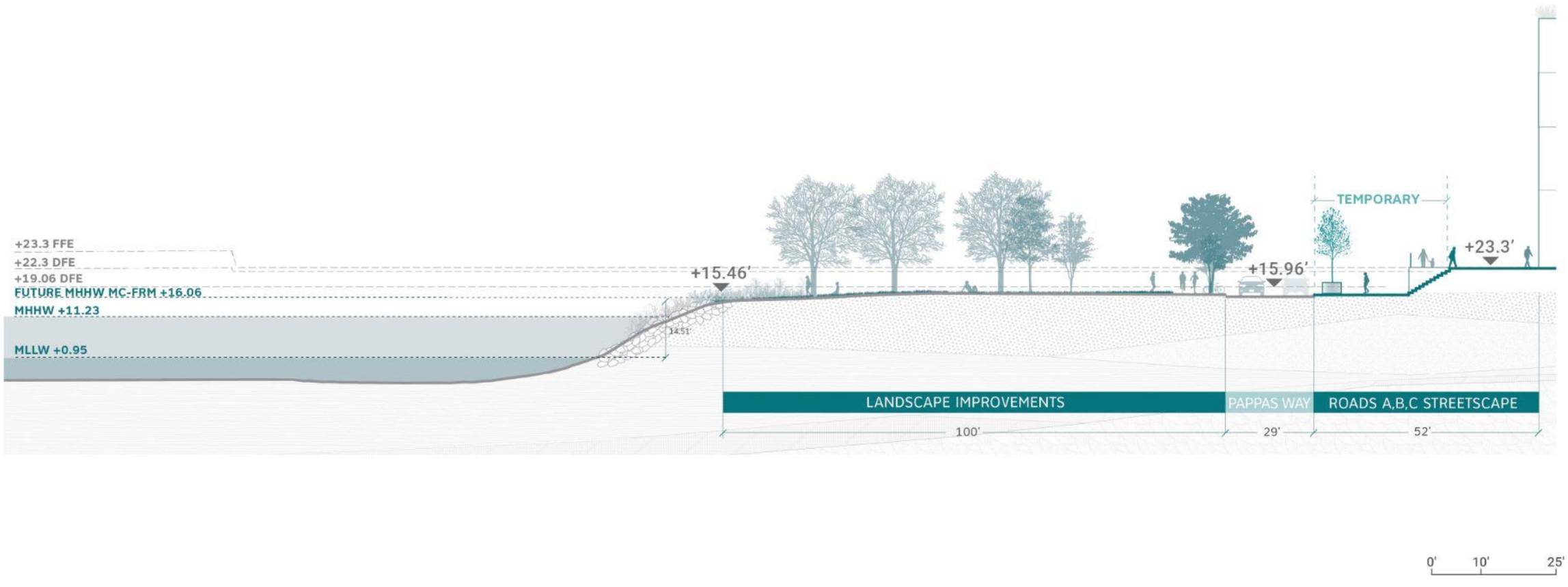
1. As an interim improvement, waterfront improvements shall introduce near-term open space amenities that activate the Reserved Channel while accommodating existing site elevations prior to future resilience upgrades.
2. The improvements should be planned in coordination with the 'Basin Loop' project to the extent practicable to leverage opportunities for potential interim enhancement of the waterfront. Among them, an existing surface parking lot could be improved into a 'gateway plaza' to expand access to, and breadth of, potential programming and activation of the waterfront. Water access potentials shall be simultaneously explored.
3. Planning shall be coordinated to expand shared-use path provisions with connections to the existing shared-use path network at Pappas Way
4. The open space shall support a range of recreational opportunities, including passive gathering areas and zones for active recreation serving neighborhood users.
5. A programmable lawn shall provide flexible space for informal recreation, gatherings, and seasonal programming.
6. Interim landscape strategies shall prioritize light-touch, adaptable improvements that can evolve with future waterfront elevation changes.



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Waterfront Improvements *(Interim Improvement)*





** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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2. PUBLIC REALM DESIGN GUIDELINES

Streetscapes

- West First Street
- F Street
- Road 1
- Road A, B, C

Permanent Improvements

Interim Improvements

Improvements fulfilling an interim use case, anticipated to be superseded, expanded or displaced by future project phases

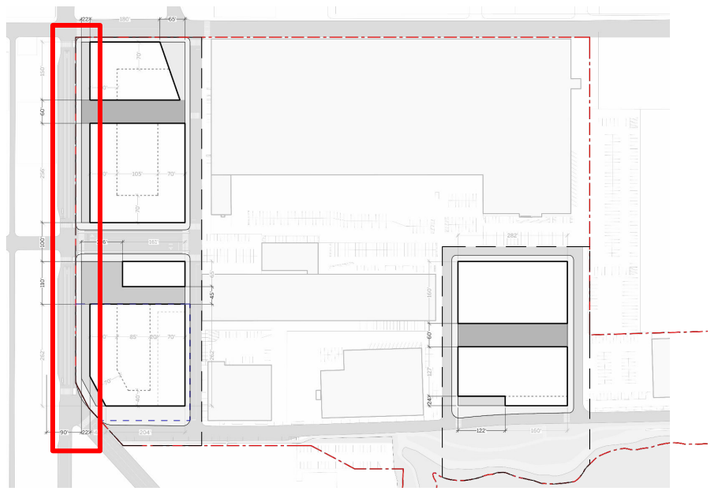
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West First Street



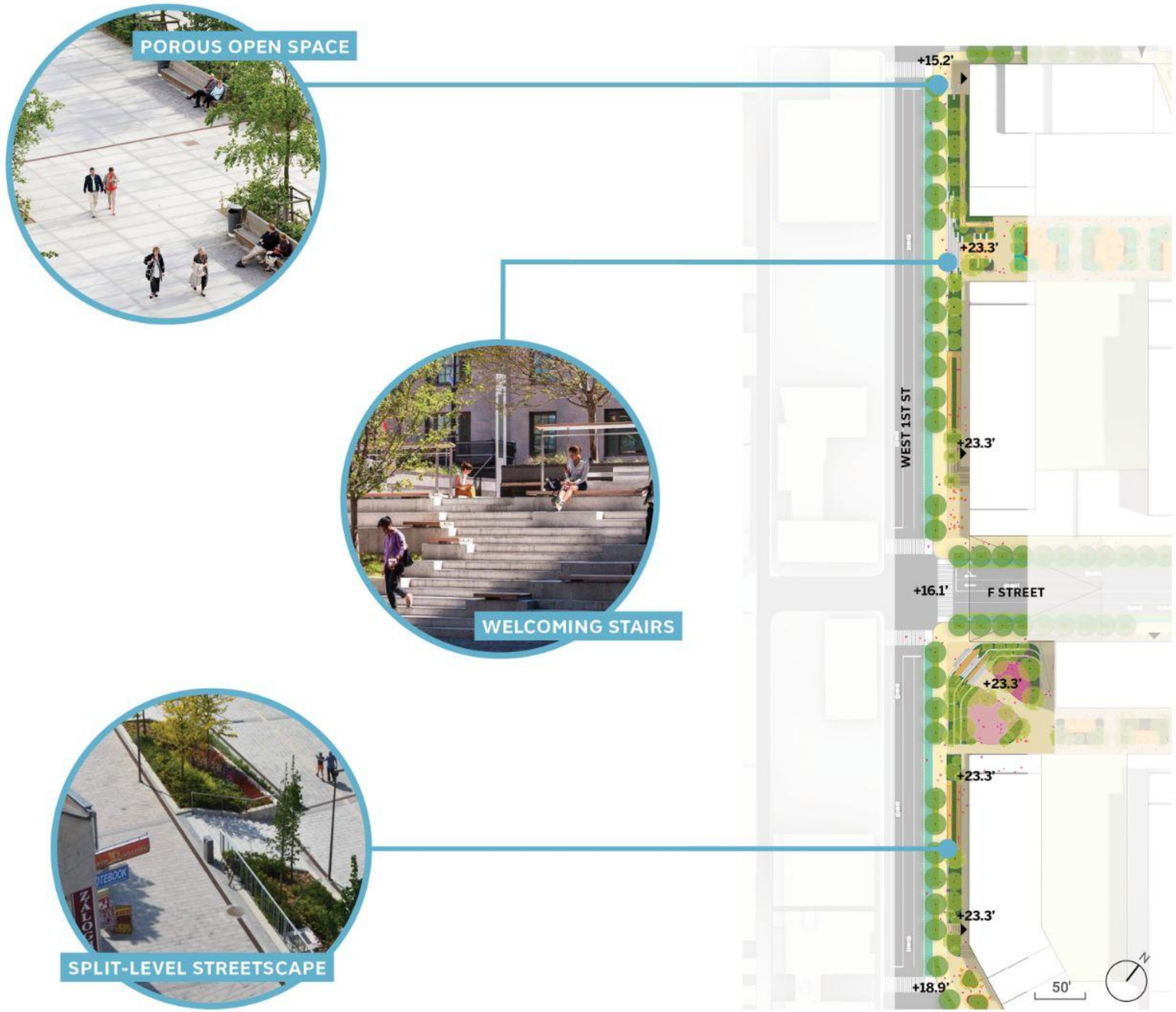
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West First Street



Design Guidelines

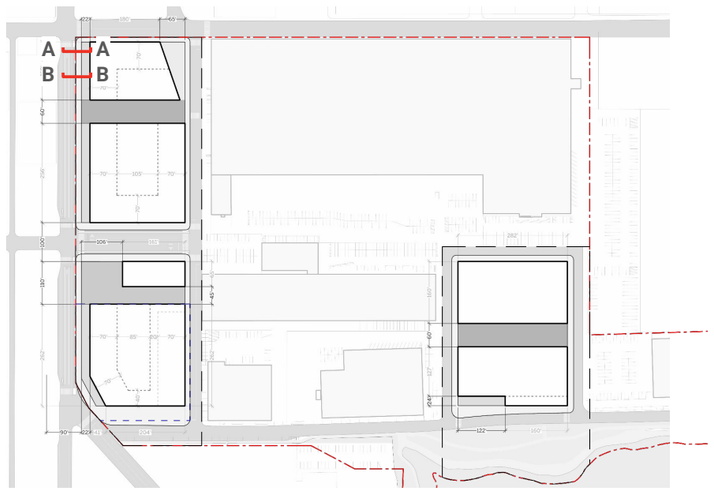
1. The design of the West 1st streetscape shall support a balanced, multi-modal corridor that safely accommodates the mobility of pedestrians, cyclists, and drivers.
2. A two-way protected bicycle facility shall be incorporated along the project's West 1st Street frontage
3. Consistent spacing of street trees shall seek to establish a continuous canopy and reinforce the streetscape rhythm, with strategic breaks at building entrances and stair or ramp locations to maintain visibility and highlight access points.
4. Grade transitions between the street and elevated building entrances shall be integrated into the streetscape through coordinated landscape, ramp, and stair elements, creating an accessible and active pedestrian environment, planned in coordination with future buildings
5. Planting, paving, and furnishing zones shall be coordinated to create a cohesive streetscape that supports pedestrian comfort and establishes an evolved identity for West 1st Street.



** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

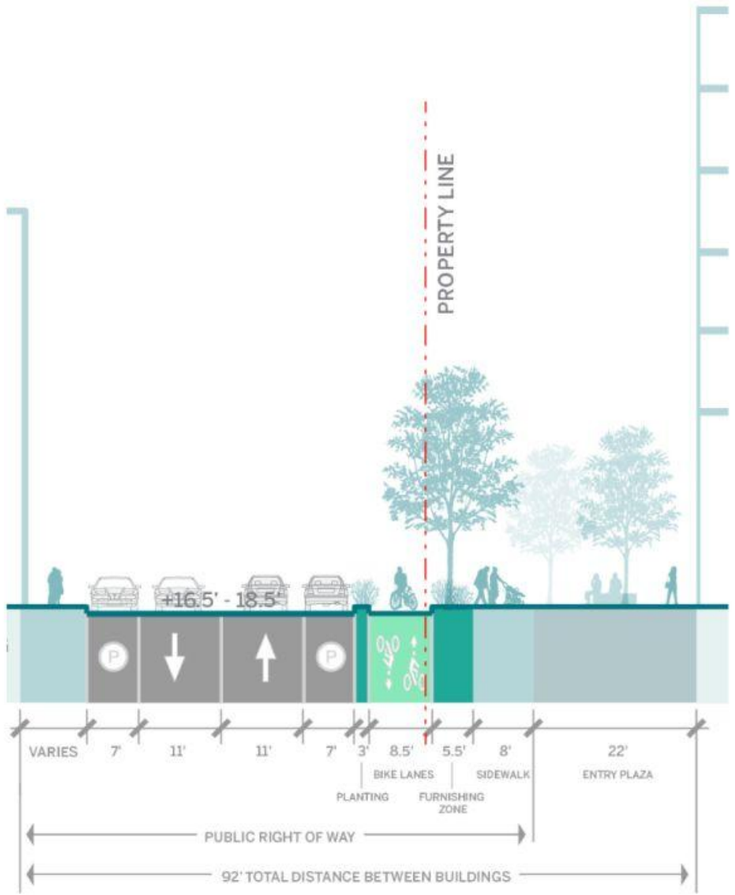
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West First Street

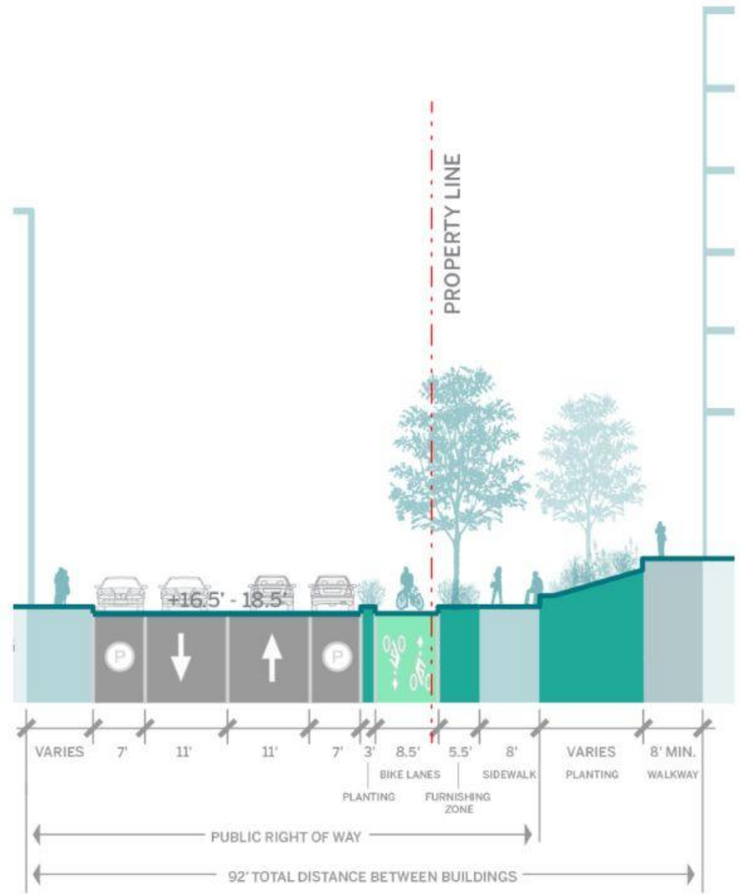


Design Guidelines Continued

6. At key corners, retail lobbies may meet the existing (lower) street level to provide welcoming entries and strengthen connections to the surrounding neighborhood.
7. Planted buffers between street level and upper-level walkways shall provide seasonal interest, support pedestrian comfort and microclimate, and enhance ecological resilience along the streetscape.
8. All planting areas shall be designed with a maximum slope of 3:1 to support healthy planting and long-term landscape performance.



WEST 1ST STREET SECTION A



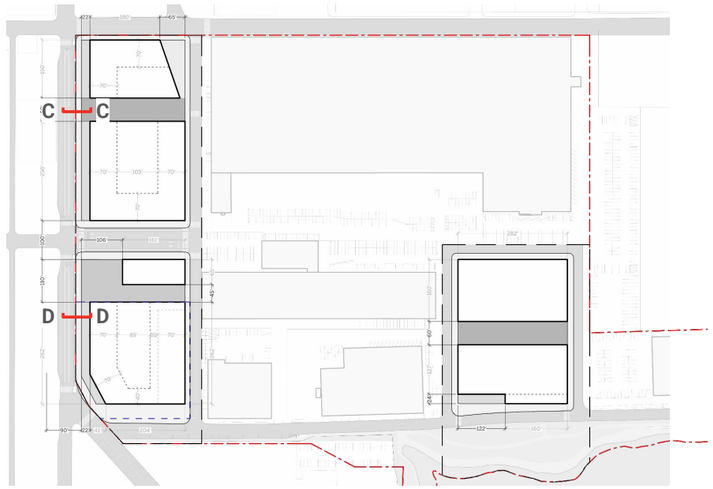
WEST 1ST STREET SECTION B

0' 10'

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

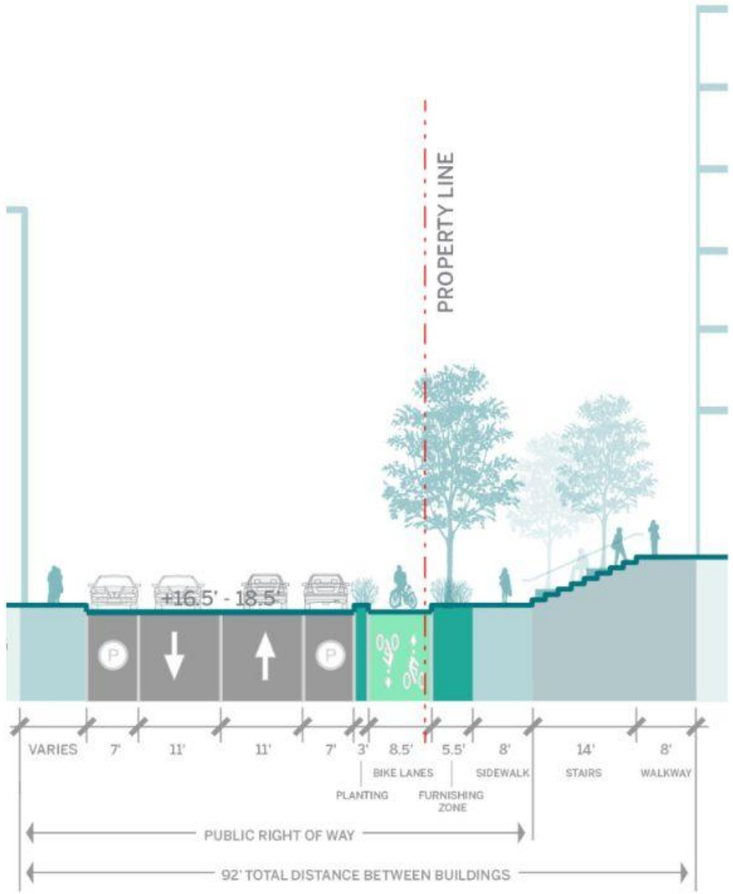
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West First Street

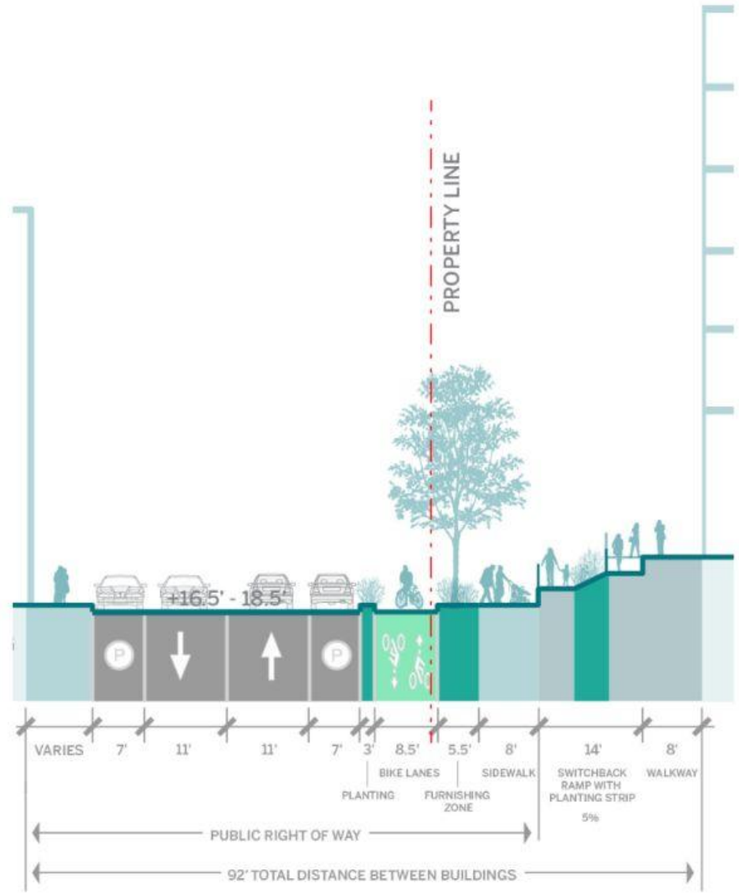


Design Guidelines Continued

9. Stairs shall be utilized strategically in conjunction with ramps to provide direct access and connections to landscape corridors and residential lobby entries.
10. Stair treads and risers shall be sized to balance access needs and comfortable pedestrian movement wherever possible.
11. Where required, railings shall be designed to meet accessibility requirements while minimizing visual impact within the landscape experience.
12. Switchback ramps may be utilized in constrained locations to provide universally accessible routes to upper-level building frontages and landscape amenities where more gradual landscape-integrated ramps are not feasible.
13. Ramps shall be designed at slopes of less than 5% wherever possible, such that handrails and landings are not required by ADA code. If necessary, ramps at grades up to 8.33% may be used strategically to reduce travel distance.
14. Railings shall be designed to meet accessibility requirements while minimizing visual impact within the landscape experience.
15. Generous planting shall be incorporated around ramp alignments wherever possible to create a comfortable, immersive landscape experience and support pedestrian comfort and microclimate.



WEST 1ST STREET SECTION C



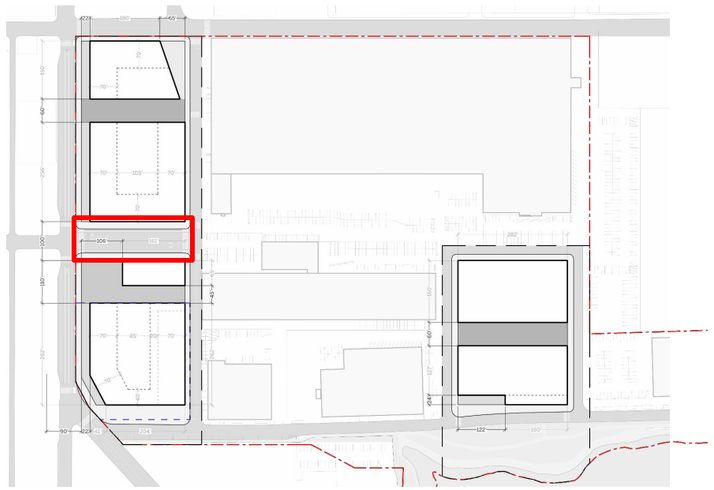
WEST 1ST STREET SECTION D

0' 10'

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

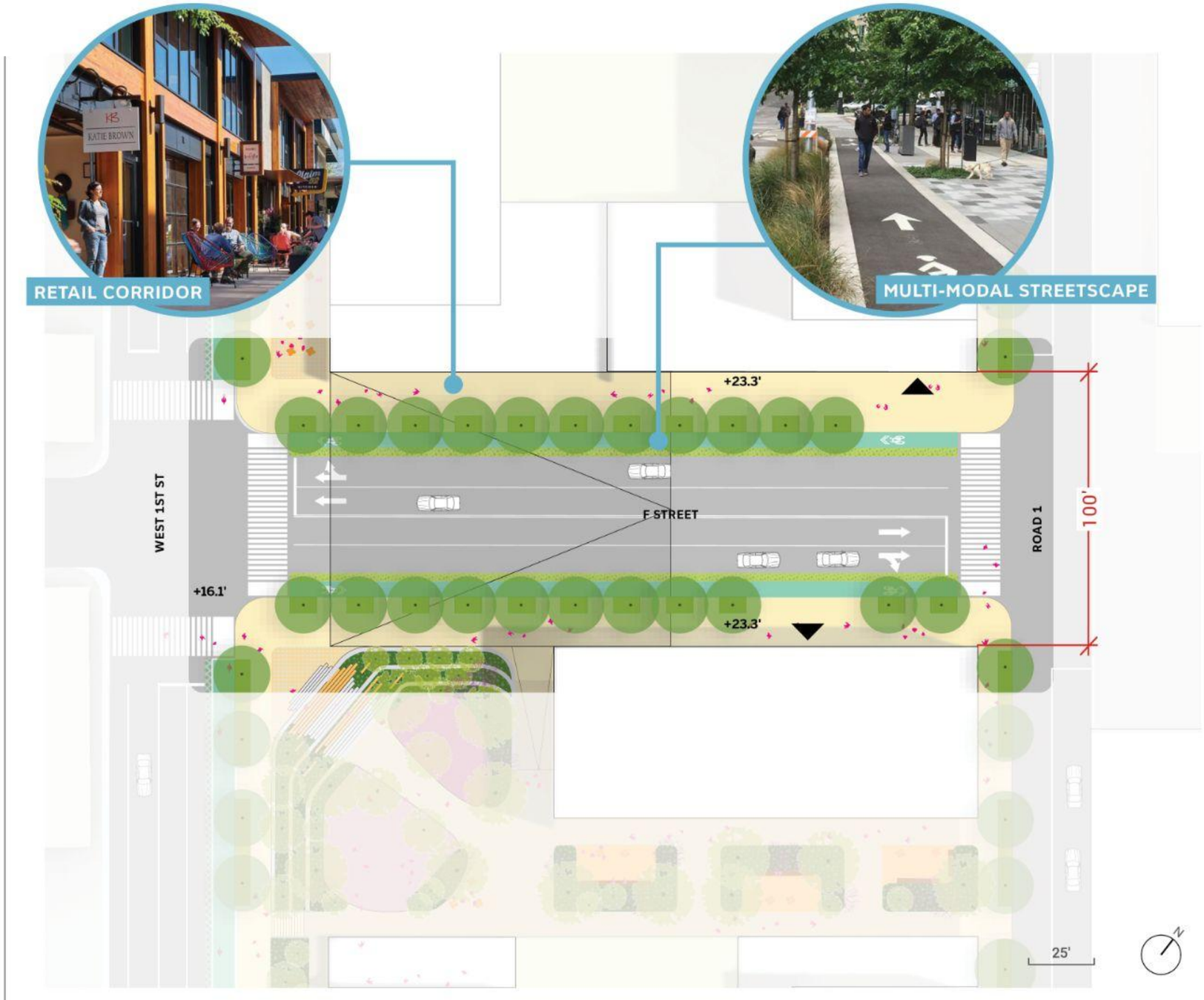
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F Street



Design Guidelines

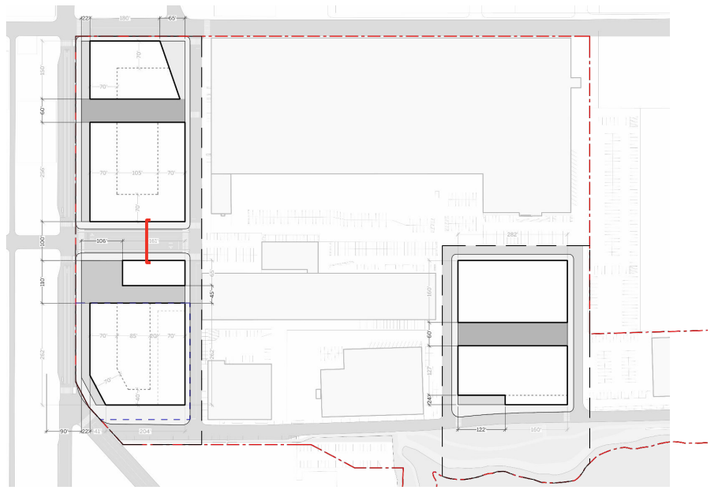
1. F Street will deliver the transportation ‘backbone’ of the greater project in the north south direction. As a principal corridor serving both Phase 1 and future phase development, F Street shall feature separated bicycle lanes within a multimodal streetscape design that safely accommodates pedestrians, cyclists, transit users, and vehicles.
2. Landscaping and furnishings along the street will be arranged to reinforce the streetscape rhythm while maintaining visibility to building storefronts and entrances.
3. Sidewalks with a minimum width of 13 feet shall be maintained to provide adequate spill-out space for ground-floor retail and pedestrian activity.
4. The street and public realm along this segment of F Street shall gradually ramp upward from the West 1st Street elevation to meet the target Design Flood Elevation (DFE), integrating resilience measures within the streetscape design and establishing the precedent for its continued north bound trajectory.

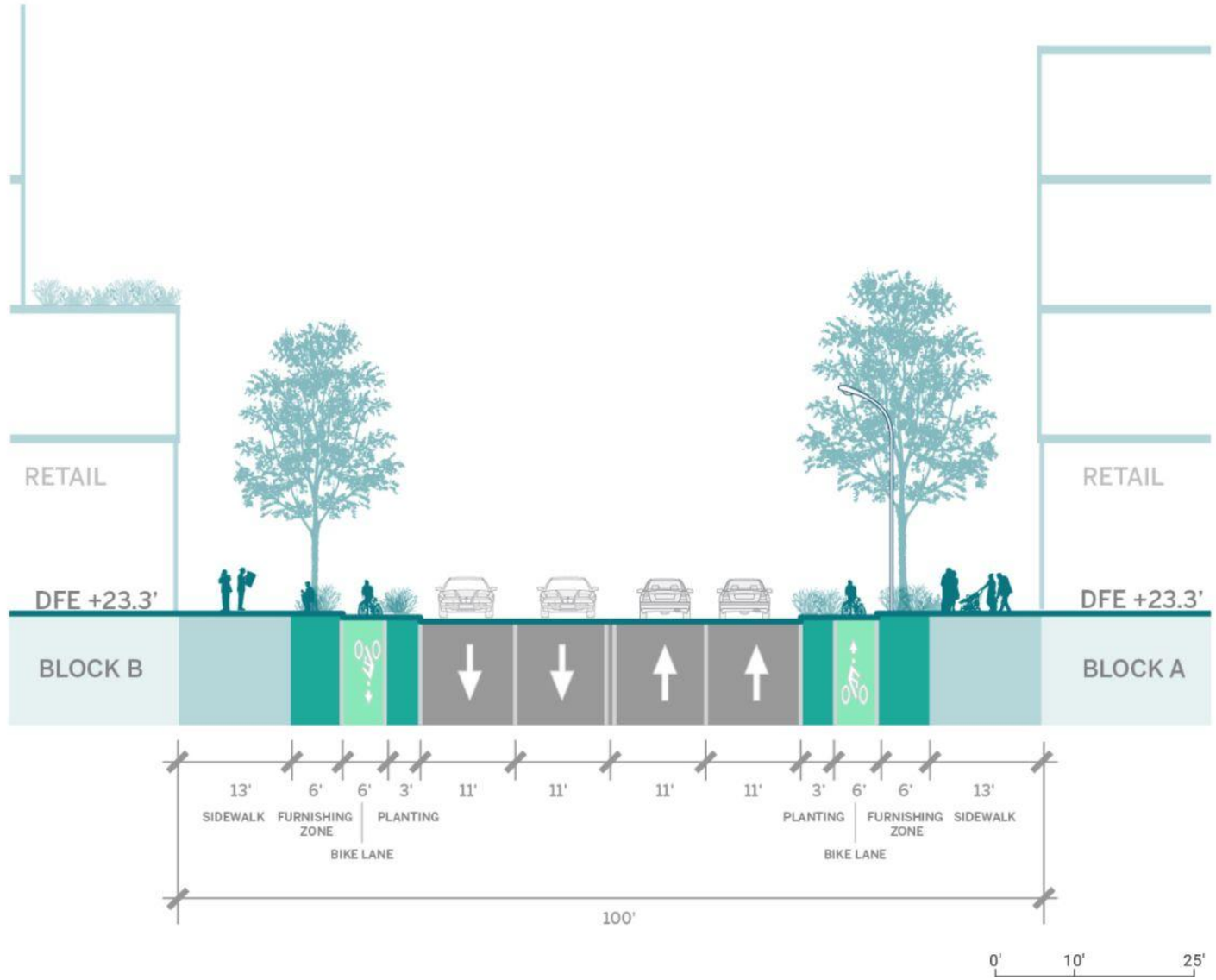


** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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F Street





Design Guidelines Continued

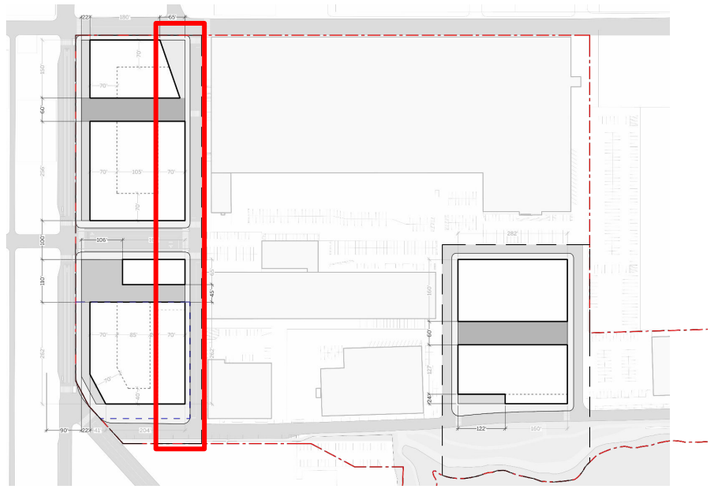
5. Bike lanes shall be located at an intermediate elevation between the adjacent sidewalk clear path and roadway, creating a safe and clearly defined multimodal streetscape.
6. A furnishing zone of at least 6 feet shall be provided between the sidewalk clear path and bike lane, accommodating street trees, lighting, and furnishings that support retail activation and pedestrian comfort and microclimate.
7. The furnishing zone shall include regularly spaced street trees that reinforce the rhythm of the streetscape.
8. Street tree species shall be selected and maintained to prioritize clear sightlines to ground-floor retail and storefront activity.

** DFE: Design Flood Elevation*

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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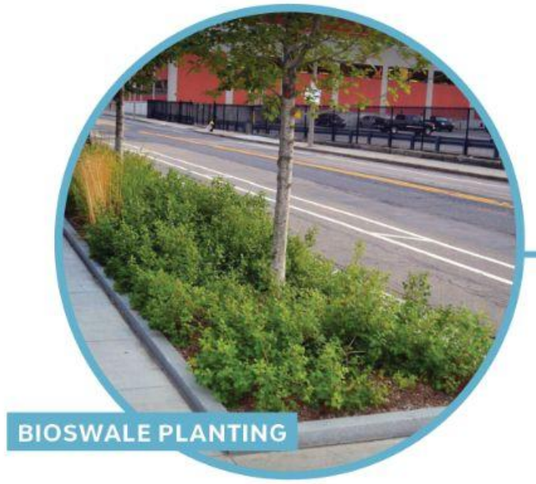
Road 1 *(Interim Improvement)*



Design Guidelines

1. Parallel to West First Street, the Road 1 streetscape design will balance the functional needs of the blocks to manage vehicular access and servicing to the site.
2. As an interim improvement, Road 1 will manage the transition between the higher Phase 1 development elevations and the lower existing elevations to the north and east.
3. An expanded public realm at Road 1's western terminus with E Street will manage east and west pedestrian circulation to separate these users from the routine turning movements of freight vehicles at E Street and Cypher Street.
4. Planting and street trees shall be aligned with the rhythm and spacing of trees on adjacent streets to reinforce a cohesive district streetscape.
5. Bioswale planting and other landscape stormwater strategies shall be incorporated where feasible to support ecological resilience and enhance the landscape character of the streetscape.



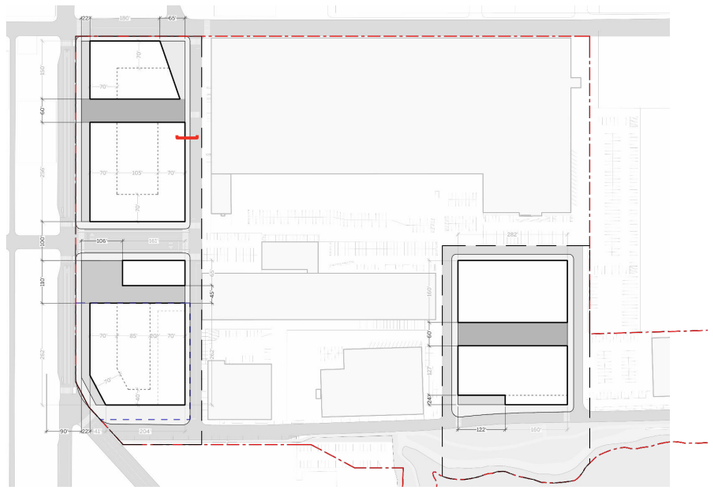




** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

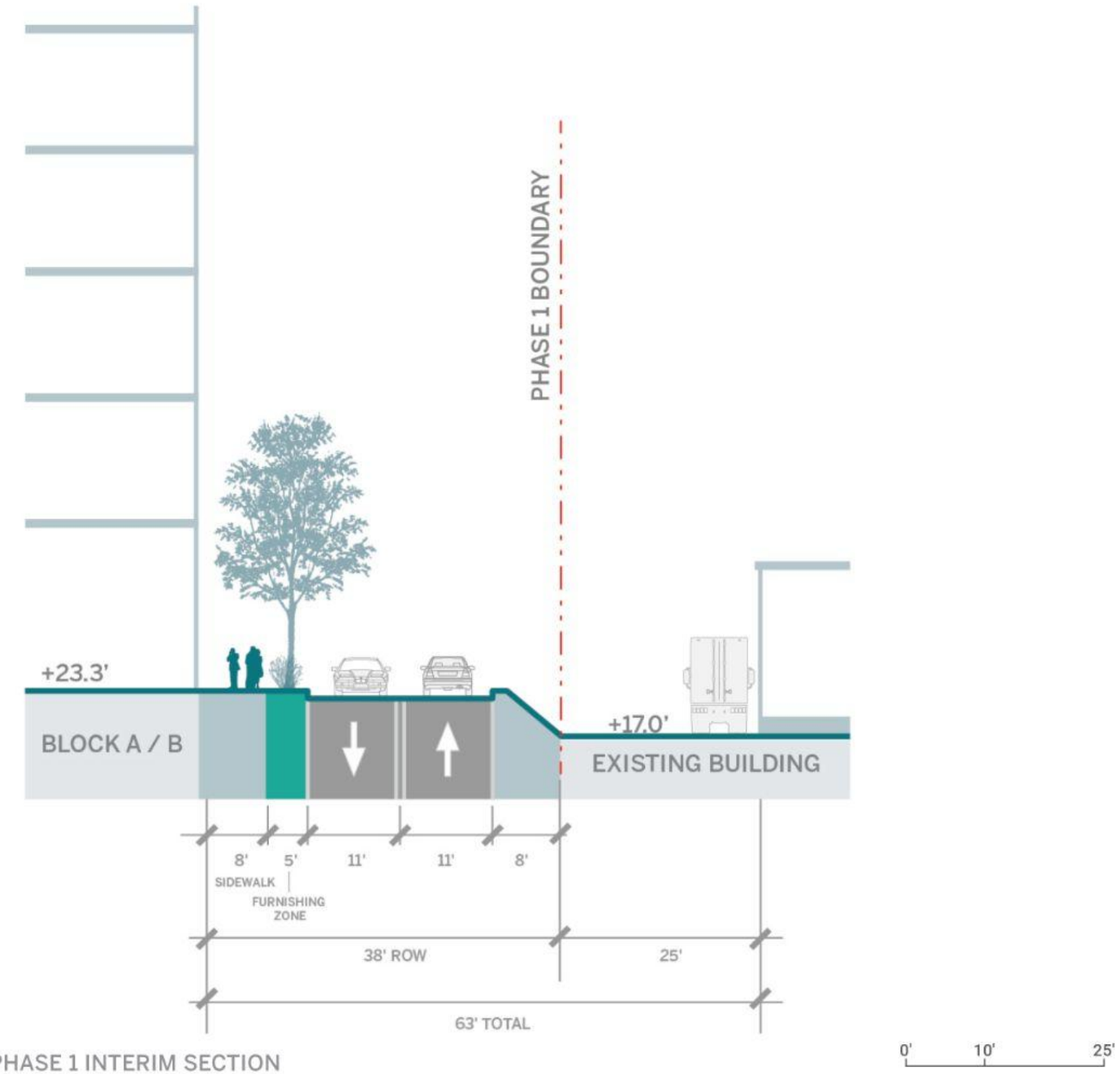
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Road 1 *(Interim Improvement)*



Design Guidelines

6. The edge of Road 1 adjacent to Blocks A and B, shall establish the long-term streetscape condition, with a generous sidewalk and planting zone supporting direct pedestrian connections to planned open spaces.
7. Street trees shall be incorporated within the planting zone to reinforce the streetscape rhythm and support pedestrian comfort.
8. Landscape elements shall prioritize visibility and safe pedestrian movement along the corridor with special attention paid to building entrances and access points.
9. The eastern edge of Road 1 shall accommodate an interim condition addressing the elevation difference between the Phase 1 development and adjacent existing buildings.
10. An interim battered wall or landscaped slope transition shall resolve the grade difference between Phase 1 and future development projects while maintaining a safe and legible streetscape edge. The battered wall or landscaped slope is not intended for pedestrian access.

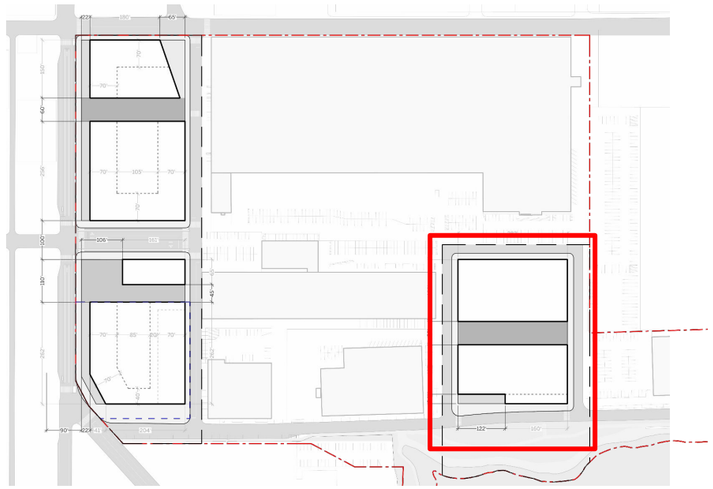


ROAD 1 PHASE 1 INTERIM SECTION

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

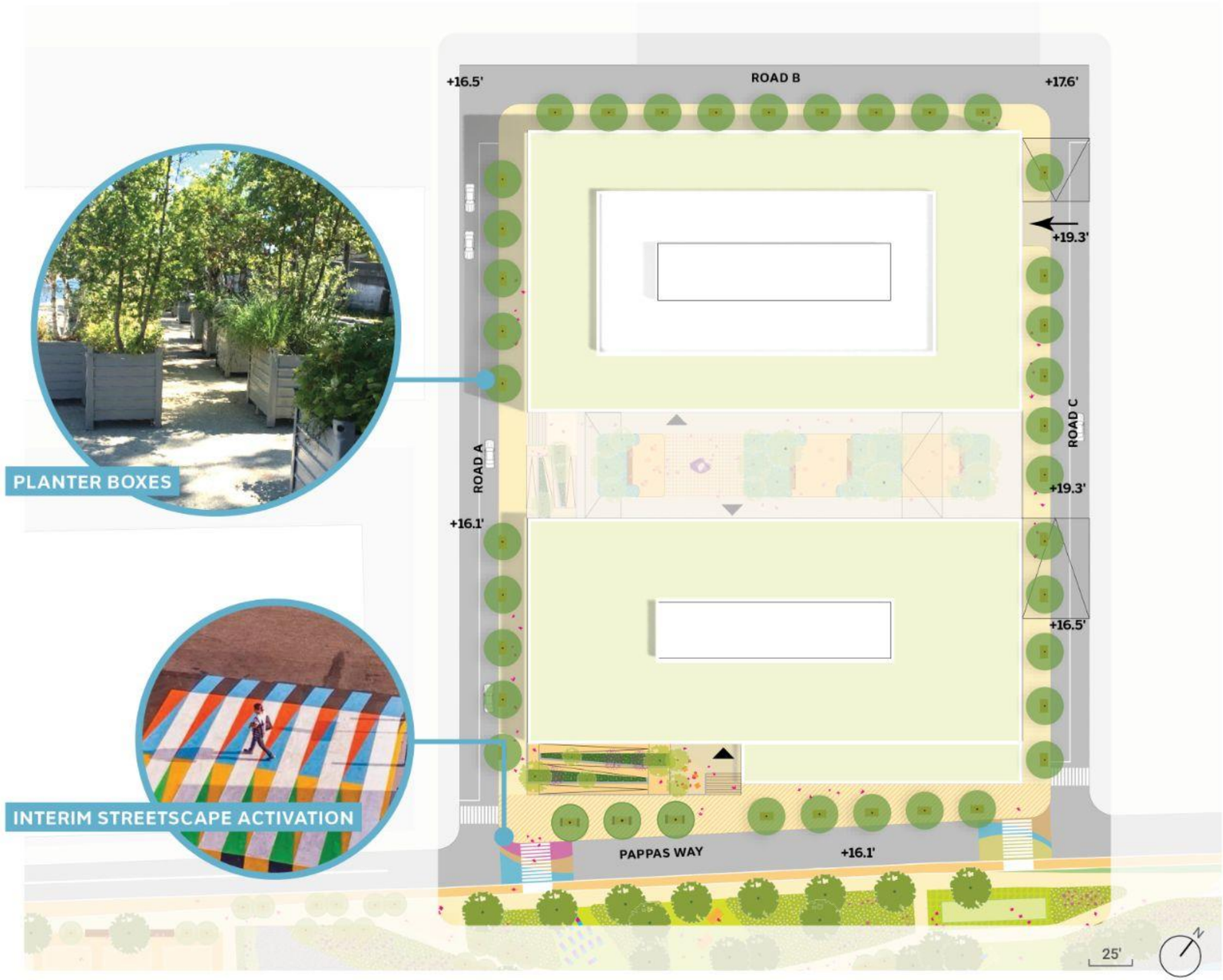
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Road A, B, C *(Interim Improvement)*



Design Guidelines

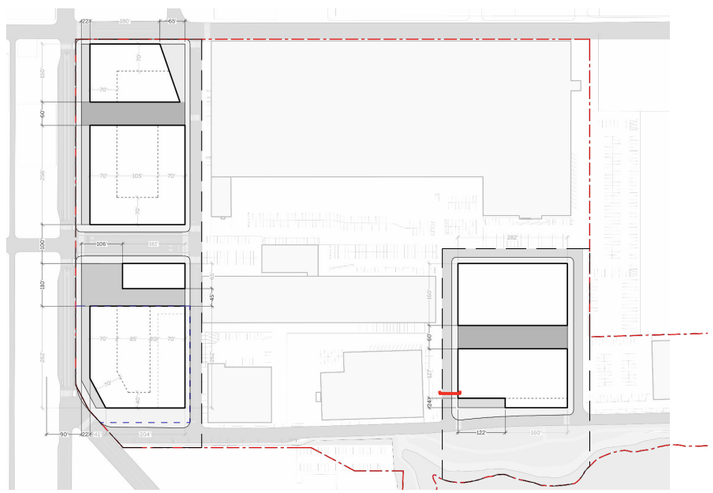
1. To maintain operations of existing campus users, roads A, B, and C shall function as interim streetscape conditions at the existing site elevation until future phases raise the streets and public realm to meet the target DFE.
2. Street trees shall be introduced using movable planter systems that provide shade, planting, and pedestrian comfort while allowing flexibility for future street reconstruction.
3. Planter systems shall function as a temporary nursery for future street trees, allowing trees to establish and mature before being integrated into permanent planting zones when the streets are reconstructed.



** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

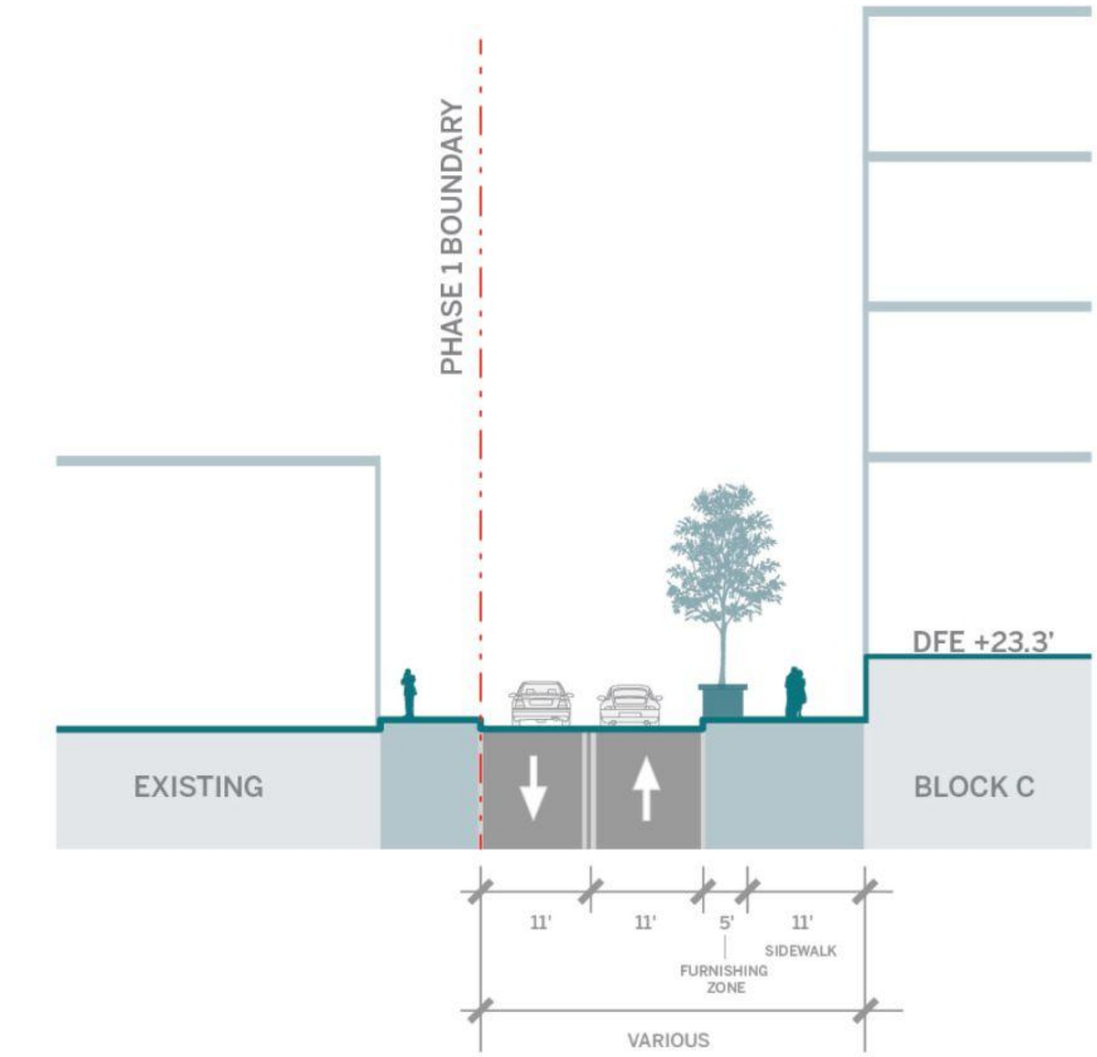
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Road A, B, C *(Interim Improvement)*



Design Guidelines

1. Sidewalks shall maintain a clear pedestrian path along building frontages through the interim street condition, with connections to the planned landscape corridor.
2. Planter-based tree systems shall provide shade and landscape buffering between pedestrians and the roadway.
3. The interim streetscape shall be designed to allow straightforward transition to the future raised street and public realm elevation.
4. Planters, paving, and site furnishings shall be configured to be removable or adaptable as the streets are reconstructed to meet the future DFE elevation.



TEMPORARY ROAD A, B, C SECTION

0' 10' 25'

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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3. BUILDING DESIGN GUIDELINES

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3. BUILDING DESIGN GUIDELINES

Overview of Phase 1

- Height Controls
- Massing Expression and Articulation
- Building Height and Mechanical Enclosures
- Access and Pedestrian Priorization
- Building Frontages
- Design Expression

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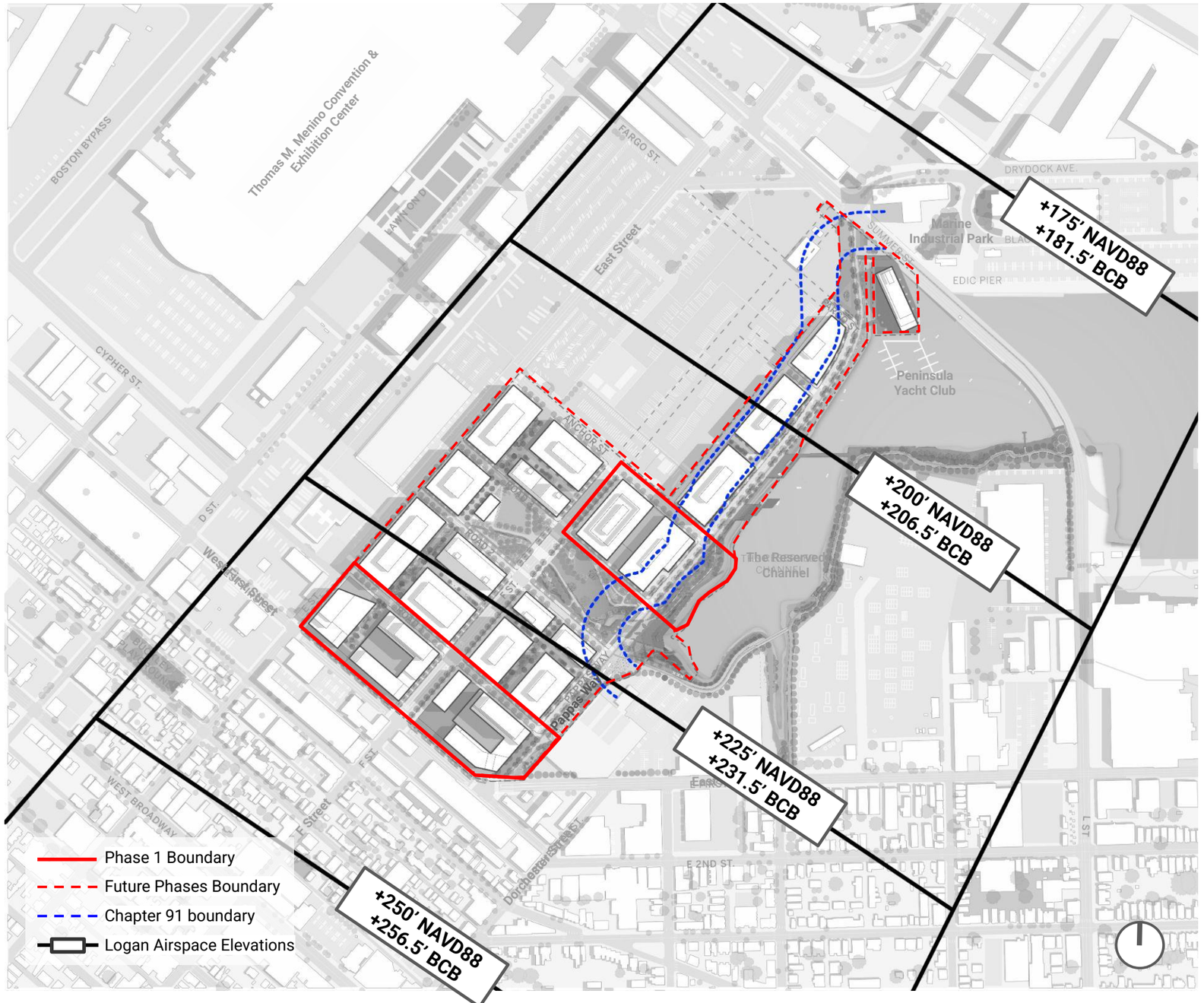
Height Controls

Overview

- The redevelopment project proposes to **reorient the prevailing light industrial and waterfront manufacturing land use patterns** of the existing site to a future mixed-use campus aligned to deliver on a coordinated set of planning principles. Considerations of height include the **regulatory bounds of area zoning controls, Chapter 91's Public Waterfront Act, and the Federal Aviation Administration (FAA)**, as well as the neighboring community and other project stakeholders.

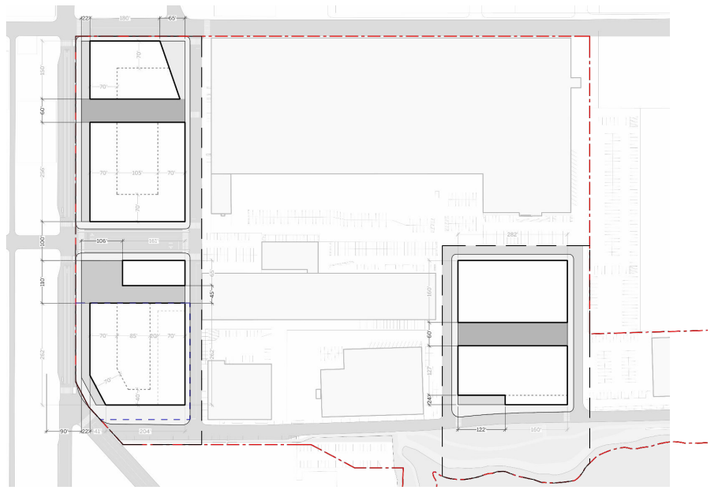
- Provided the above considerations, the **maximum potential height limit** from among these is that of the **FAA** which concerns Boston Logan's airspace and is represented at right.

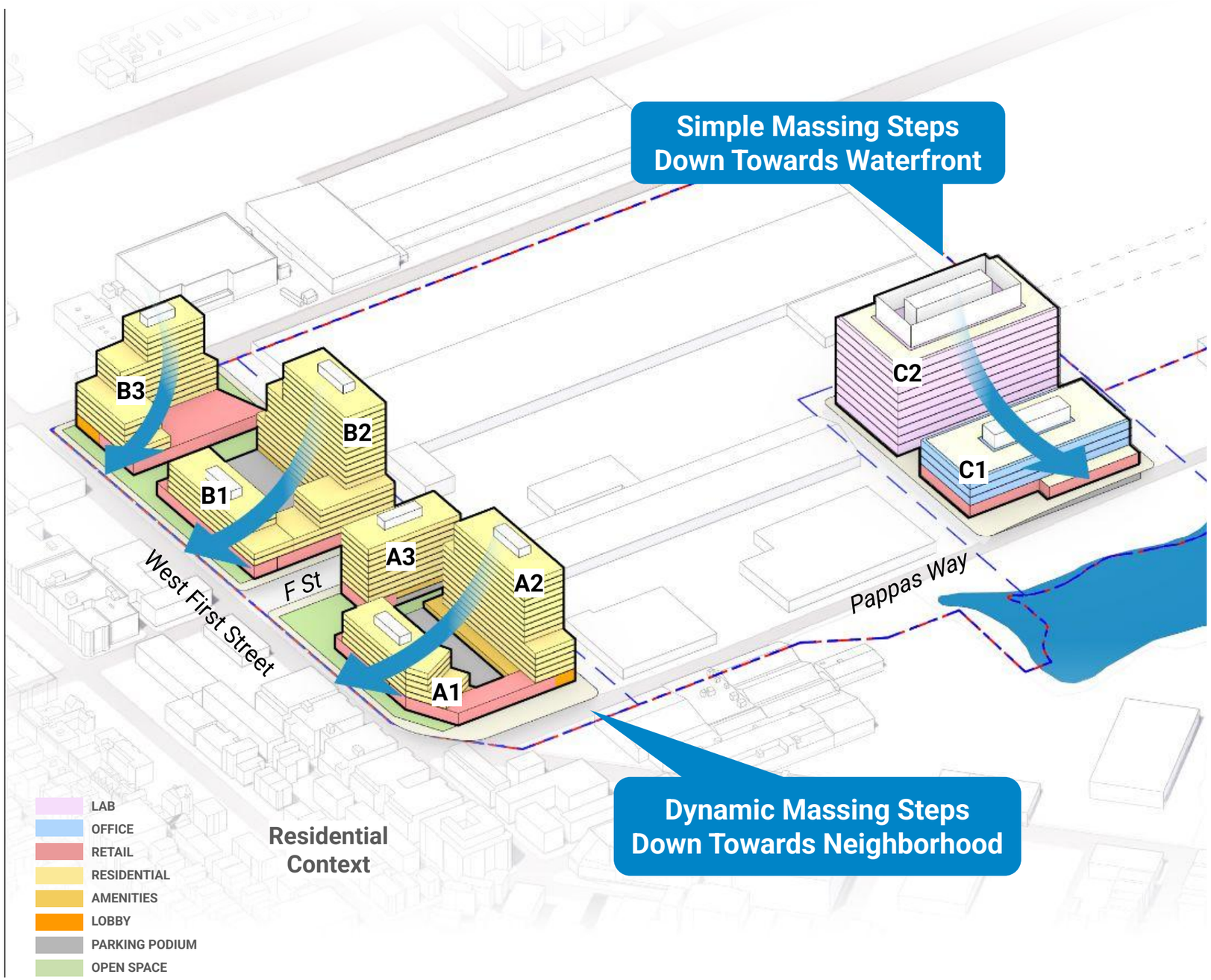
- **Defining Height:** Elevations described on the following pages are **referenced to the Boston City Base (BCB) datum. To convert to NAVD88, subtract 6.46 ft.** Annotated building heights on the pages that follow are measured from building DFE to the top of last occupiable floor. To convert between building heights and building elevation, add 23.3' or 24.3'.



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Massing Expression and Articulation





Overview

- **Block A / Block B**

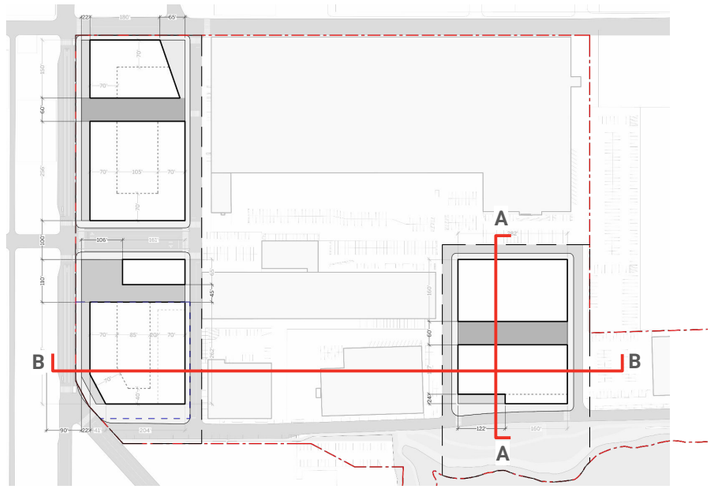
  Block A and B respond to the scale of the adjacent South Boston neighborhood, with **heights generally stepping down toward West First Street** and the surrounding residential context. Greater height and density are concentrated farther from the neighborhood edge, while **open spaces support residential livability and the public realm**.

- **Block C**

  Block C is shaped by its relationship to the Reserved Channel waterfront and Chapter 91 regulations, with **massing organized to preserve openness toward the water** and strengthen connections between buildings, public open space, and the waterfront edge.

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Building Height and Mechanical Enclosures



Design Guidelines

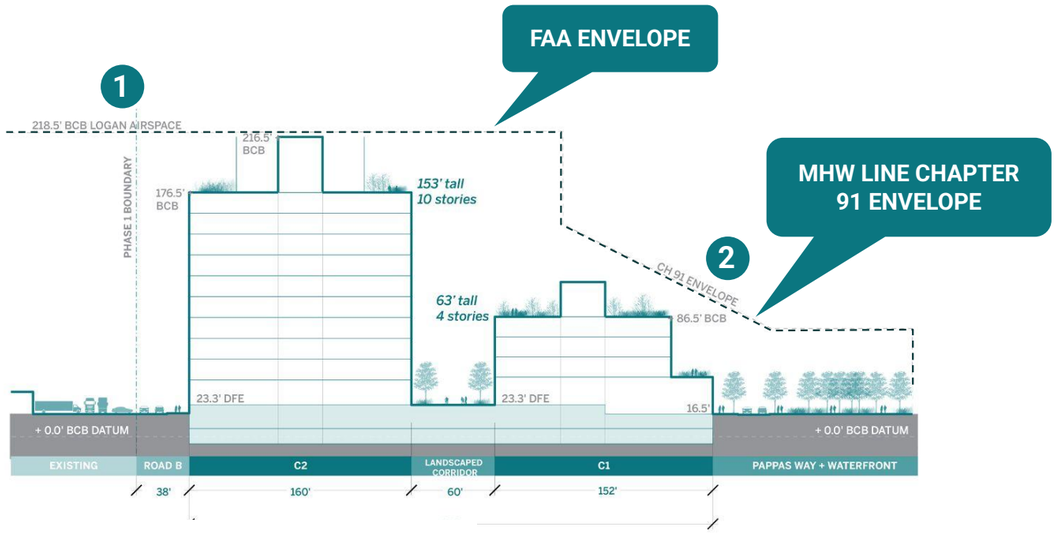
1. In order to comply with Logan airspace requirements, all portions of any building, including mechanical. Overruns, rooftop appurtenances, antennas, guardrails, etc **must be below the FAA envelope**.

2. Rooftop **mechanical enclosures** shall not exceed 40' in height for buildings supporting major life-sciences uses, nor 30' for commercial office buildings, nor 25' for residential buildings.

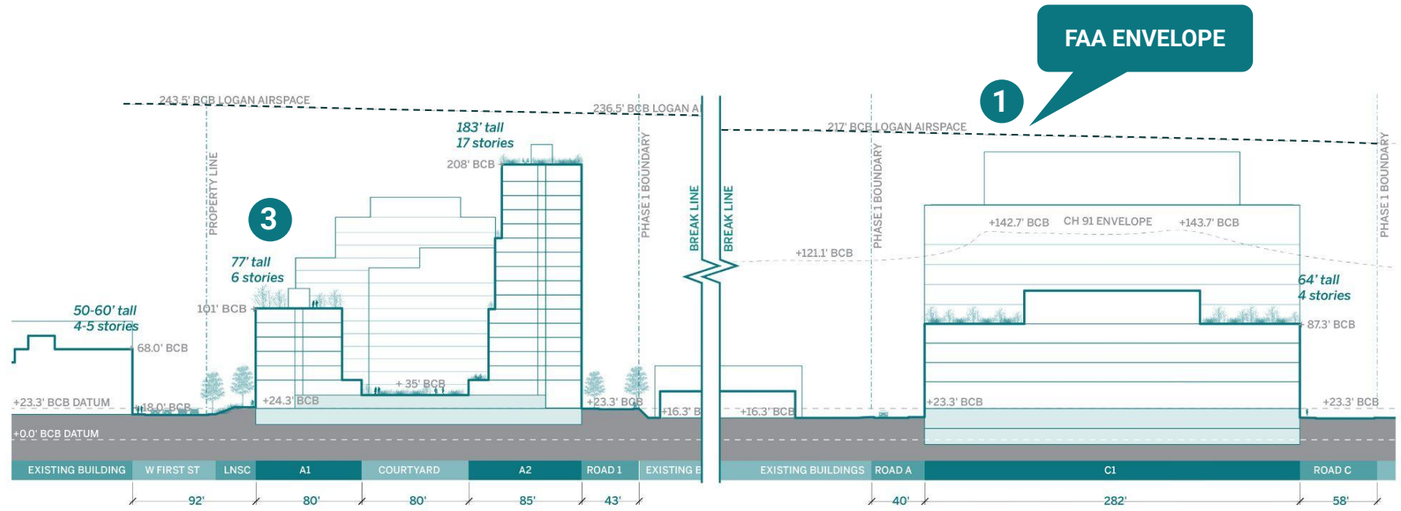
3. Rooftop planning should prioritize intentional **setbacks**, compatible with the overall building architecture.

4. Rooftop mechanical equipment should be aggregated within **enclosed volumes** where feasible, and be **screened with specific attention to views** of the same from the public way.

5. Within the Chapter 91 zone, block C building heights should be **terraced and stepped back to ensure compliance with waterfront height regulations**.



SECTION A

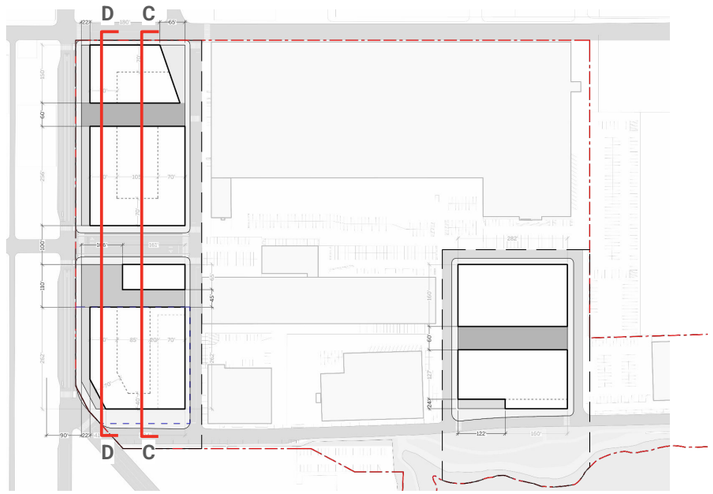


SECTION B

** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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Building Height and Mechanical Enclosures



Design Guidelines

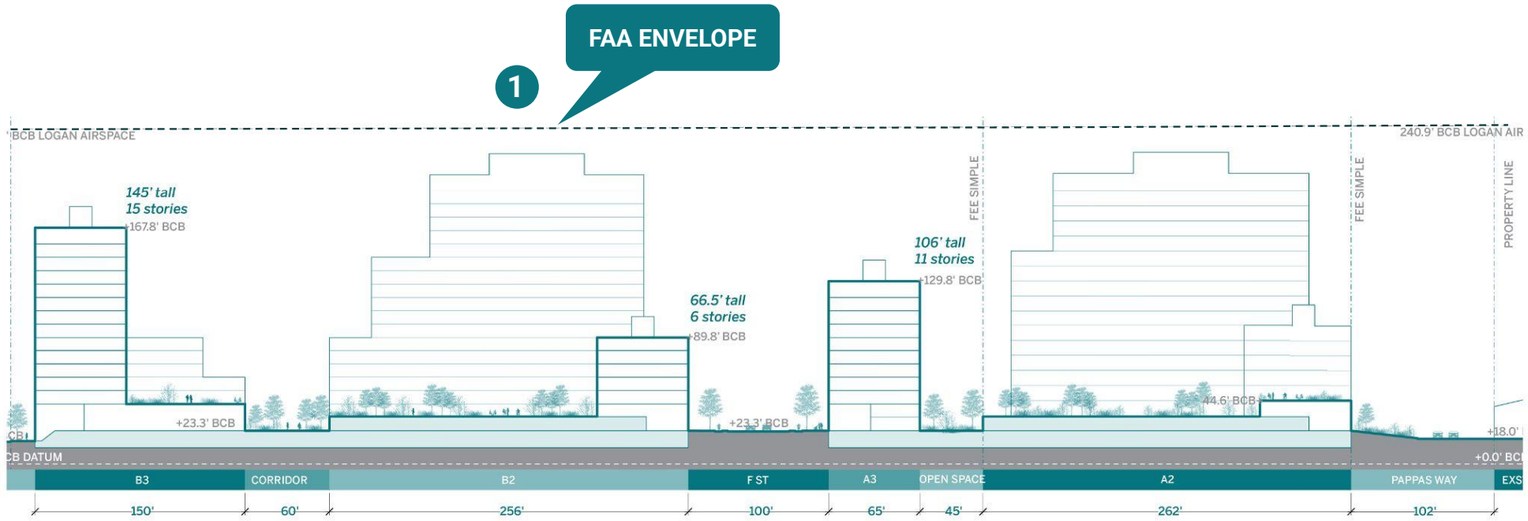
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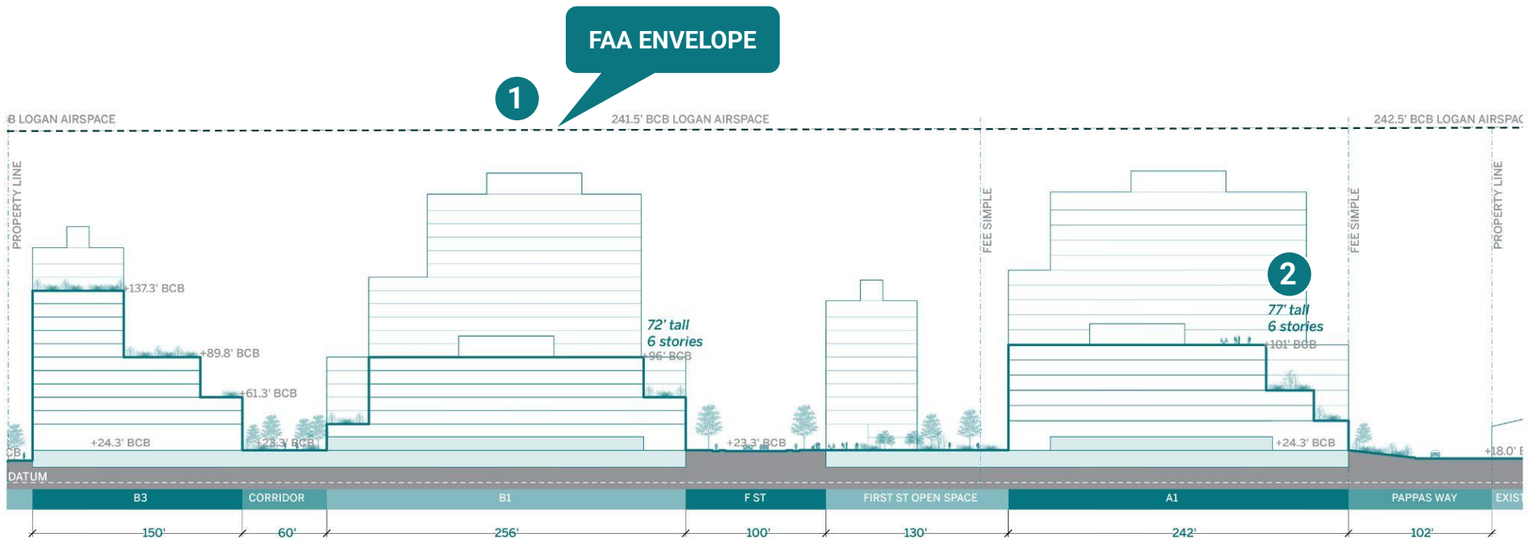
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SECTION C



SECTION D

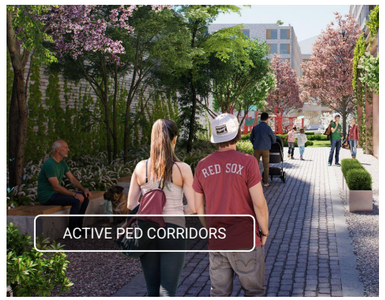
** Elevations are referenced to the BCB datum. To convert to NAVD88, subtract 6.46 ft.*

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Access and Pedestrian Prioritization









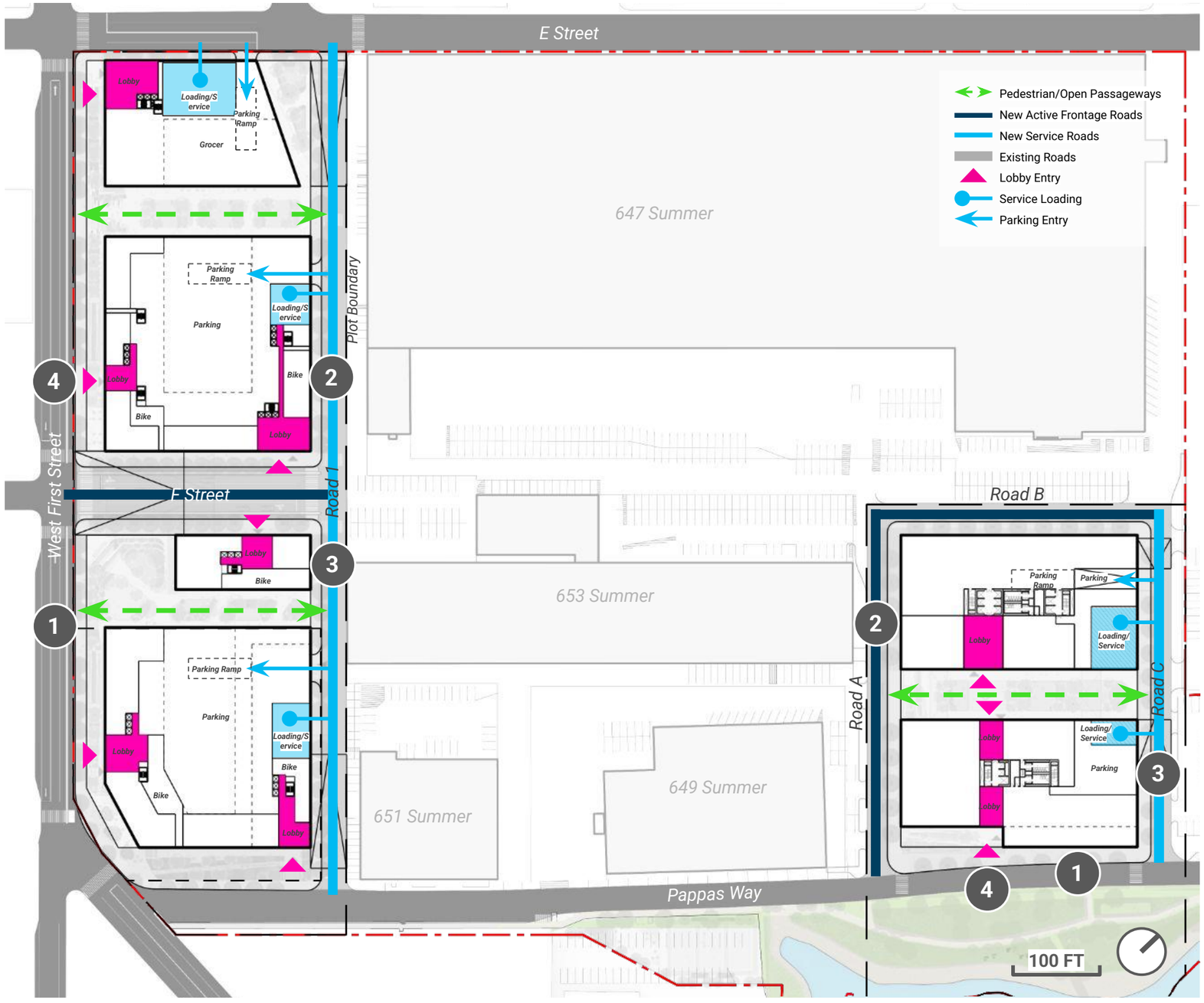
Design Guidelines

1. **Pedestrian access should be prioritized** along primary streets and key active corridors with primary **building entrances** located on **highly visible** and **walkable frontages.**

2. To limit curb cuts along primary streets, **vehicular access** should be **consolidated** along secondary streets where feasible to minimize conflicts with pedestrian activity.

3. **Loading and service entrances** should be located on **secondary streets** and screened from primary public frontages to maintain an active and pedestrian-oriented streetscape.

4. **F Street, West First Street,** and **Pappas Way** should function as **primary pedestrian-facing frontages** for entrances and active uses, while Road 1 should accommodate loading, service, and parking access.



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Building Frontages









Design Guidelines

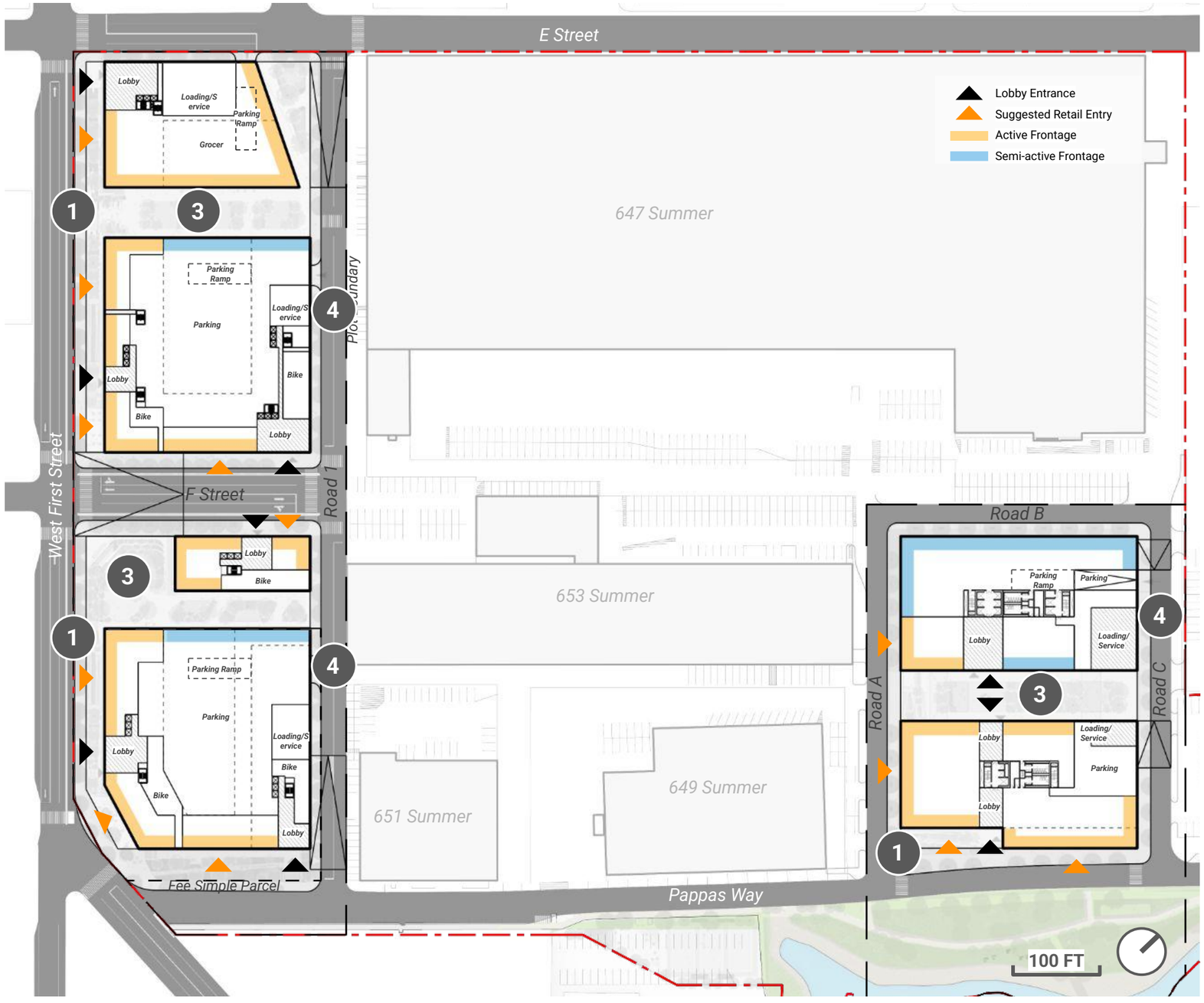
1. **Ground floors** along primary frontages should incorporate **active uses** with welcoming and transparent facades to promote street activity and visual engagement.

2. Frontages along **secondary streets and pedestrian passageways** should maintain **visual connections** through semi-active uses and visibility of key elements.

3. **Spill-out areas, outdoor seating, and covered frontage areas are encouraged** to support pedestrian activity and animate the public realm.

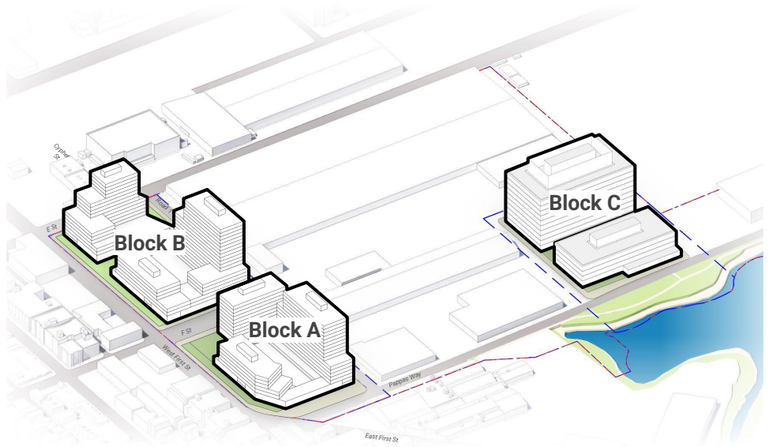
4. Primary and secondary entrances should be provided to support **walkability** and be located to achieve a fine-grained retail environment.

5. Signage and shading elements should be i**ntegrated with the building facade,** scaled to the pedestrian environment, and designed to maintain a **clear, cohesive, and well-ordered streetscape.**



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Design Expression - Existing Condition



Block A & B Existing Condition

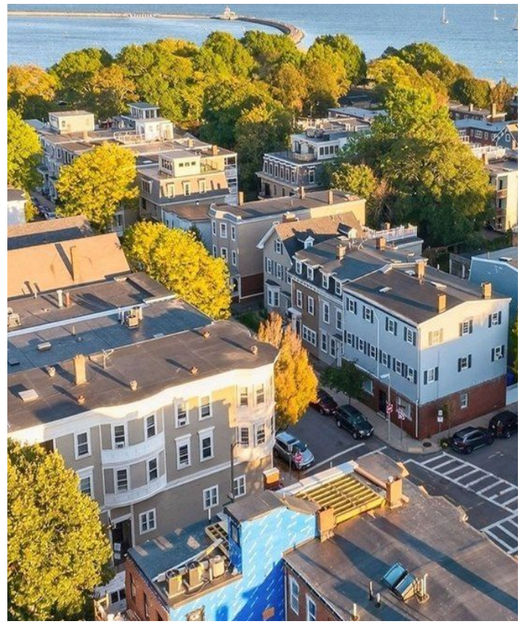
1. A predominantly **low-to mid-rise residential** context defines West First Street and the adjacent South Boston neighborhood.

2. The surrounding fabric is **compact, human-scaled**, and characterized by regular facades, modest setbacks, residential entries, and neighborhood-serving ground-floor uses.

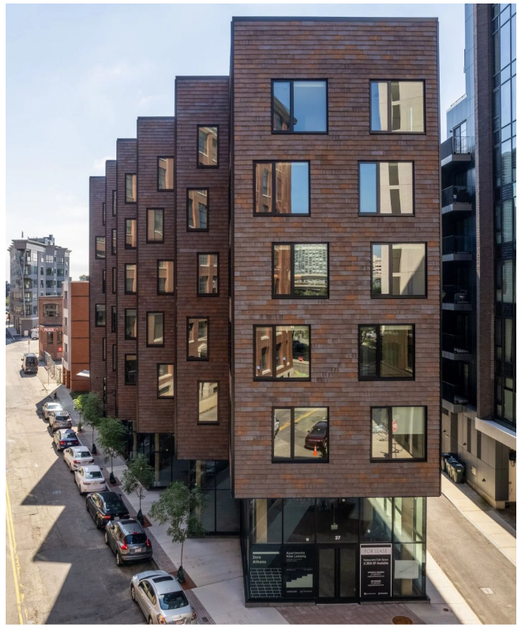
Block C Existing Condition

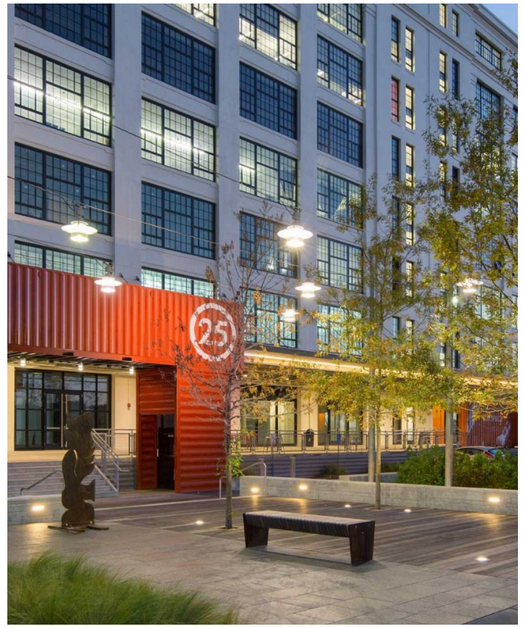
1. A lower-scale industrial waterfront context defines the harbor edge through **warehouses, light industrial buildings, and working infrastructure**.

2. The surrounding fabric is **pragmatic and utilitarian**, with simple forms, durable materials, and an emerging transition **toward commercial and research uses**.













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Design Expression - Future Materiality



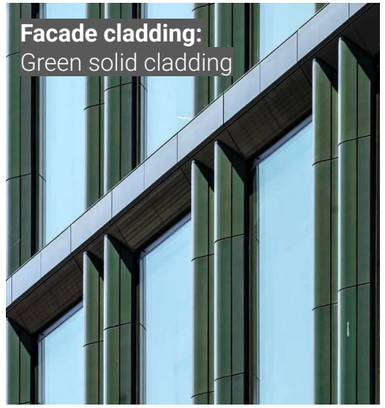
Architectural Character
South Boston's masonry streetscape and the Port and Reserved Channel's industrial heritage guide a facade strategy emphasizing material robustness, structural expression, and rhythm.

Materiality

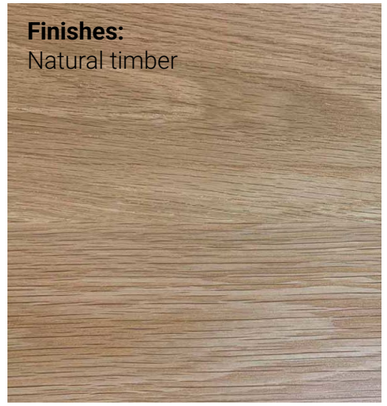
1. Material selection should **draw from local building traditions** and reinforce **continuity** with the surrounding urban context.
2. Facade openings should be organized to **maximize daylight and views** while contributing to an inviting and well-let streetscape.
3. Materials should express their integrity and **prioritize durability** and **long-term performance** appropriate for waterfront and urban conditions.
4. Facade material articulation should contribute to a **human-scaled, pedestrian-friendly environment and enhance the public realm experience.**
5. Material expression should prioritize **solid facade systems** with punched or recessed openings that contribute to depth, shadow, and durability.

Window frames:
Anthracite grey

Railing:
Black steel rods

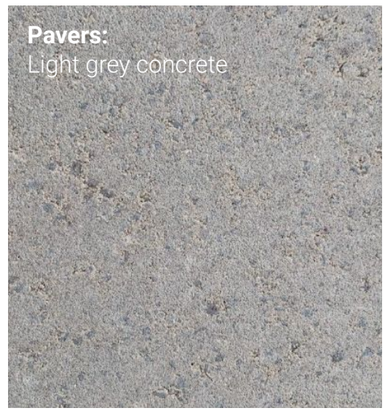


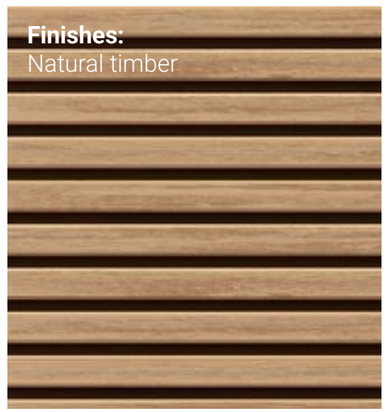
Balconies / Mullions:
Champagne Brushed Aluminum















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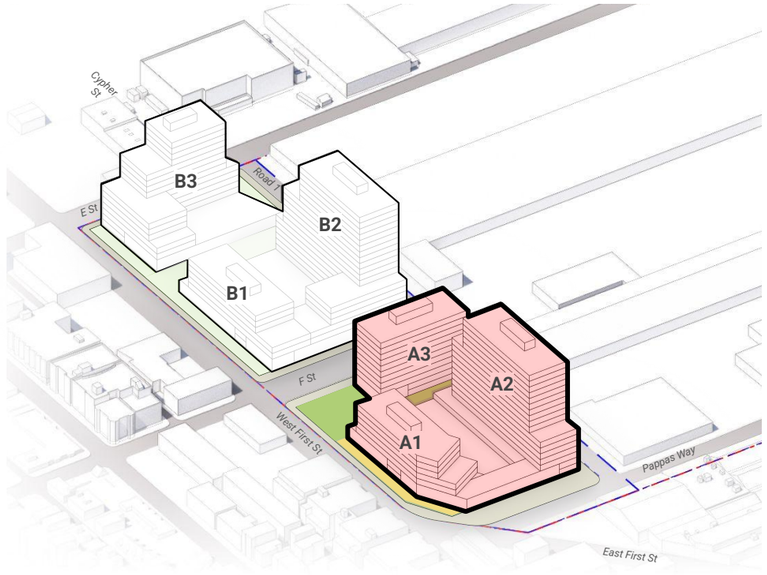
3. BUILDING DESIGN GUIDELINES

Block A Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

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Setback and Street Relationship



Design Guidelines

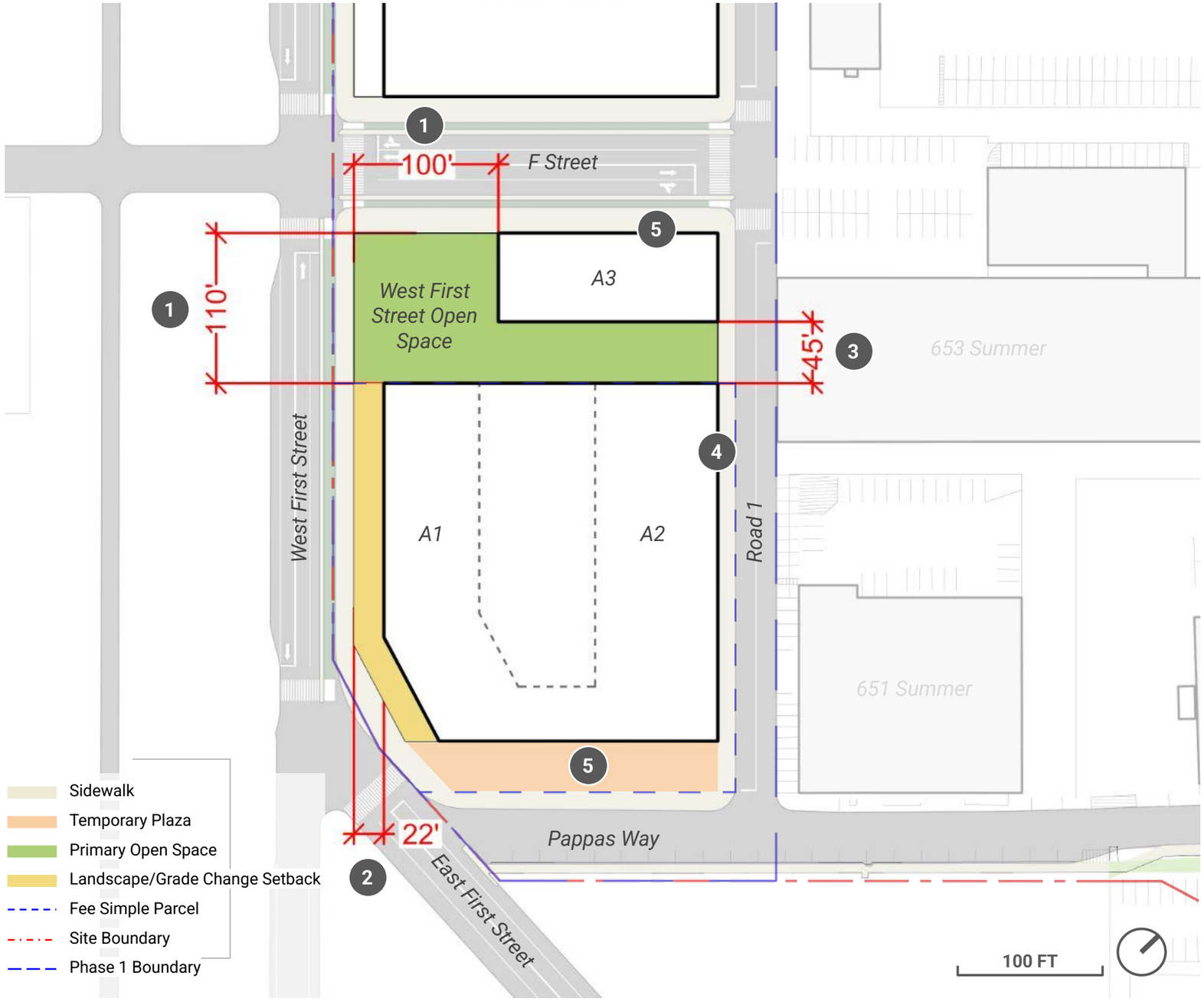
1. A **min 110' setback** shall be established **from F Street** and a **min 100' setback from West First Street** to define the West First Street open space.

2. In order to reserve an adequate zone for landscape plantings and grade changes required **to elevate the site for resilience**, buildings along West First Street should be **setback a min. of 22**'.

3. In order to establish a connective landscaped corridor and ensure **mid-block permeability**, a **min 45' passage should be maintained** between Building A1/A2 and Building A3.

4. Along **Road 1, street wall continuity shall be maintained** except for the required 45' wide landscaped corridor.

5. **Street wall** continuity of building A3 shall be prioritized **along F Street.**



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Massing

Design Guidelines

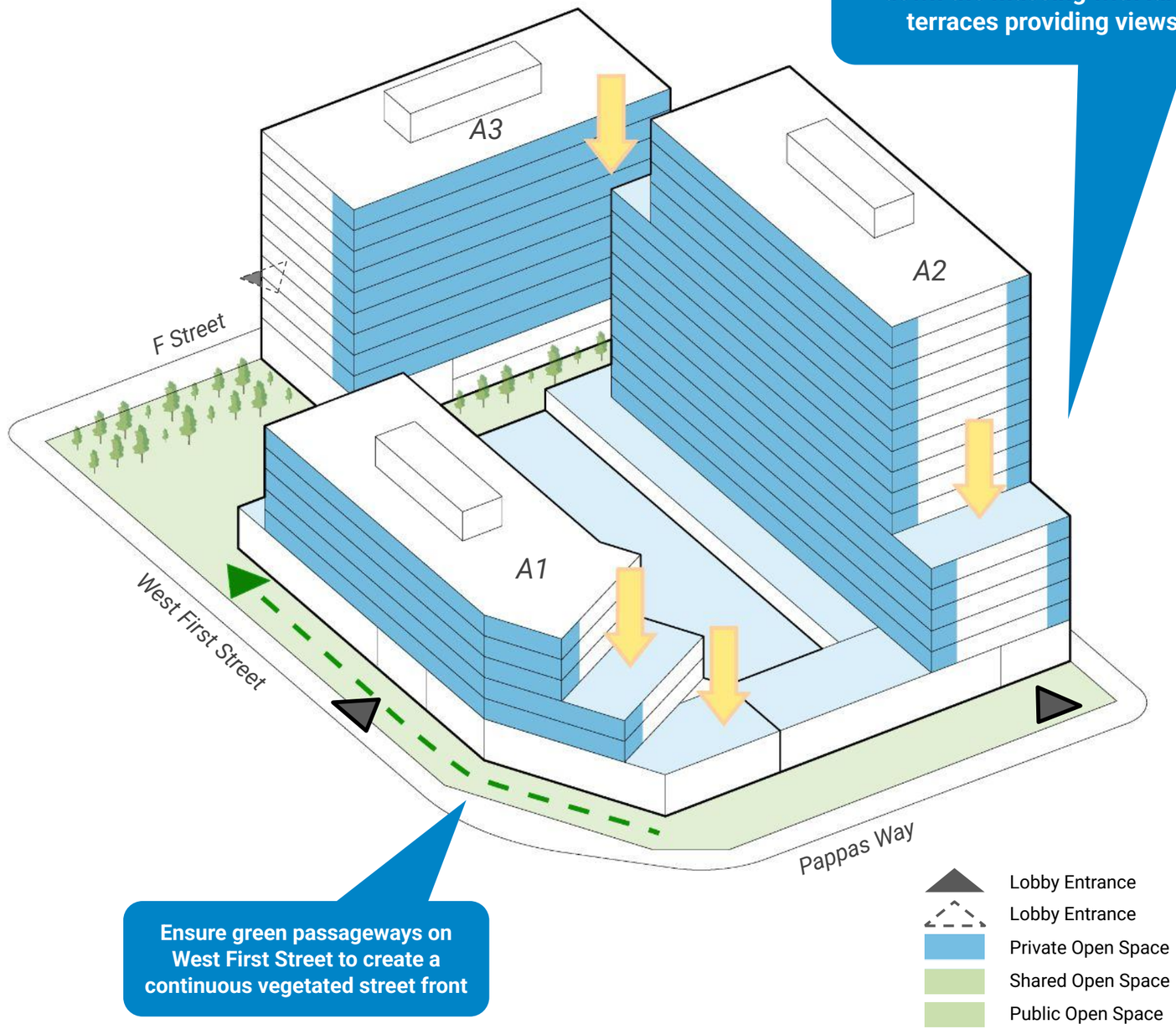
1. Relative building heights across the block should reflect their proximity to the area abutters. Building **A2 should be the tallest** on the block; Building **A3 should be middle height**, and Building **A1 should be the lowest** on the block.

2. **Stepped terraces are strongly encouraged** to reduce the massing of the building, to provide shared outdoor amenity spaces, and to provide elevated views toward the waterfront and open spaces.

3. **Private outdoor spaces are encouraged**, particularly on the sides of buildings **facing public open space(s)**.

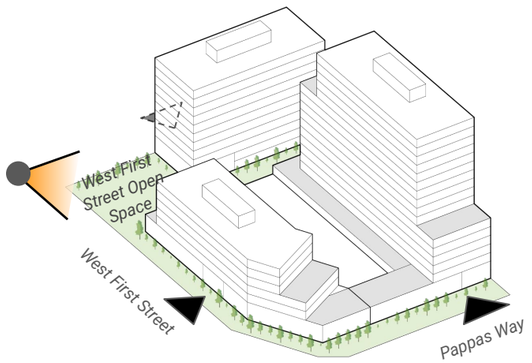
4. **Primary residential entrances** shall be planned along primary streets of **F**, **West First**, and **Pappas Way**.

5. **Service access** shall be provided **along Road 1**, including parking access and loading bay(s).



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Massing



Design Guidelines Continued

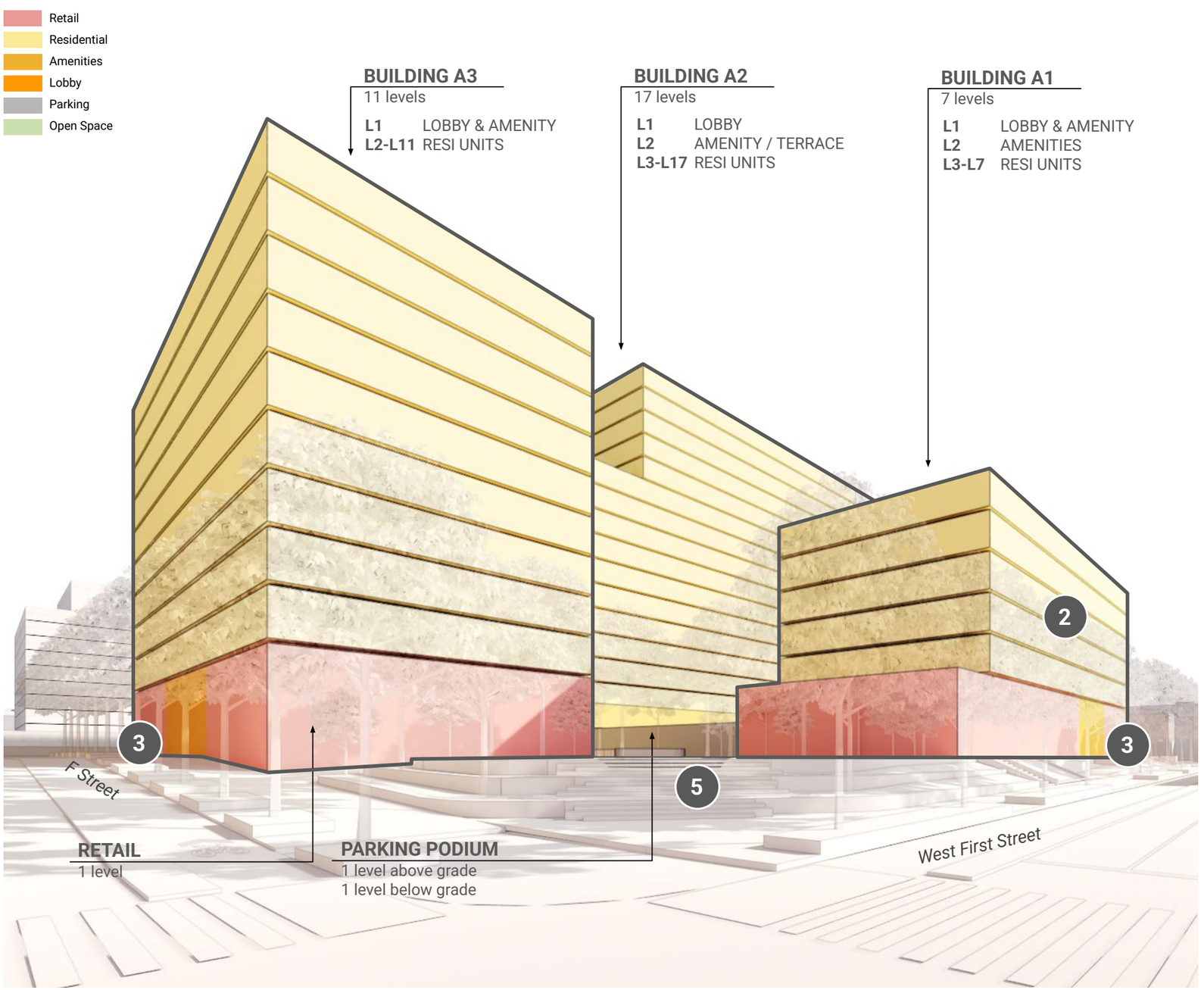
1. Building **A1** shall not exceed a **max building height of 77'**, Building **A2 shall not exceed 182'** and Building **A3 shall not exceed 107'** to roof of last habitable floor.

2. **Private outdoor open space, such as balconies, is encouraged** on the West First Street frontage to animate the primary street.

3. Primary **building entrance** for A1 should be provided along **West First Street**, A2 primary entrance should be along **Pappas Way**, A3 primary entrance should be along **F Street**.

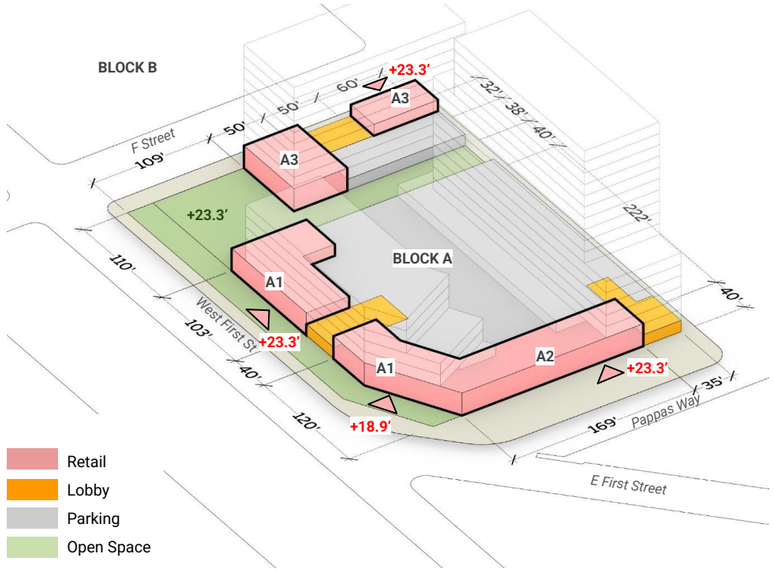
4. **Width of residential bar buildings** should be between **65'-75'.**

5. **Ground floor** should be **activated** with active retail, community space(s), and residential lobby entrance(s), and be planned in consideration of the surrounding public realm.



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Ground Floor Activation



Design Guidelines

1. Ground floor retail should **support the neighborhood** and complement the upper story uses to promote an active, walkable public realm.

2. Ground-floor restaurant and neighborhood service uses should orient entrances and activity toward **primary streets and adjacent open spaces to maintain continuity** and support an active public realm.

3. Exterior storefront and interior space planning should take advantage of **opportunities to connect and relate to the exterior public realm**.

Building	Potential Retail Typology
A1	Full Service Restaurant/Fast Casual
A2	Neighborhood Services
A3	Neighborhood Services





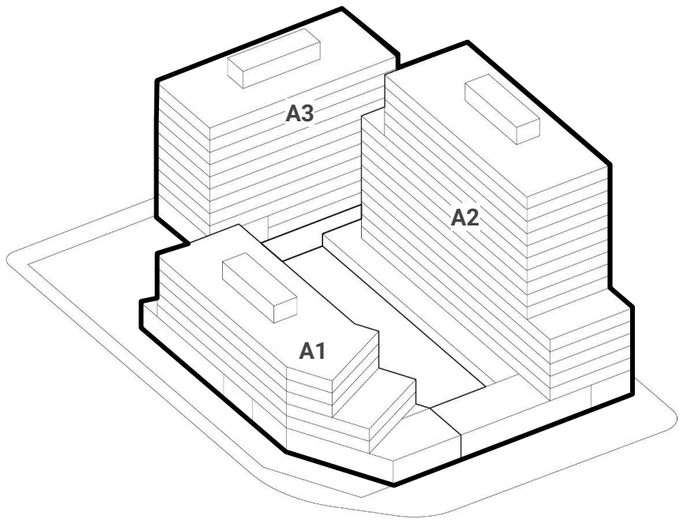






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Facade Look and Feel



Design Guidelines

1. Material selection should **reinforce the residential character of the block**, maintaining compatibility with the surrounding neighborhood context while transitioning to the future commercial uses anticipated to occupy adjacent blocks.

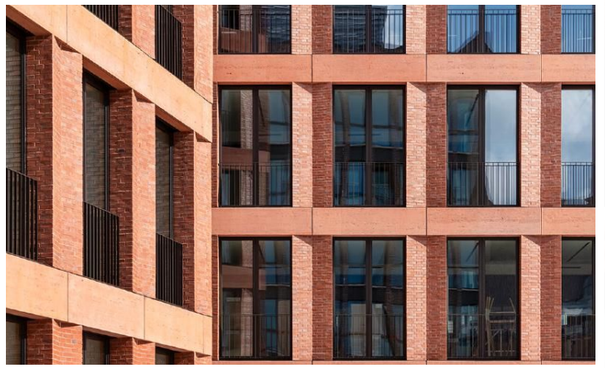
2. Facade compositions should **balance solid wall surfaces with generous openings** to support a welcoming and pedestrian-oriented streetscape while ensuring well-insulated high performance buildings.

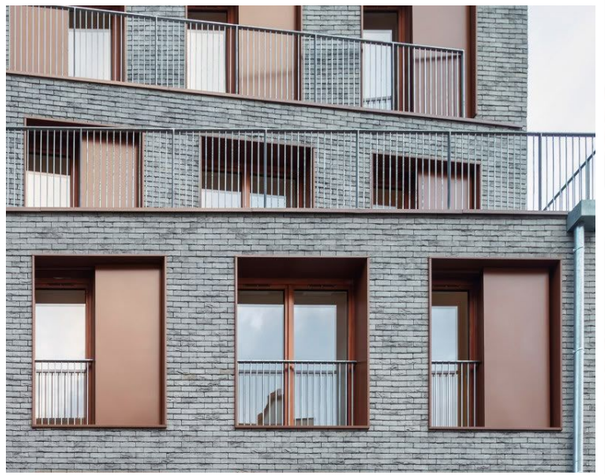
3. **Subtle variation in color** and surface treatment is encouraged to provide visual interest while maintaining consistency across the block.

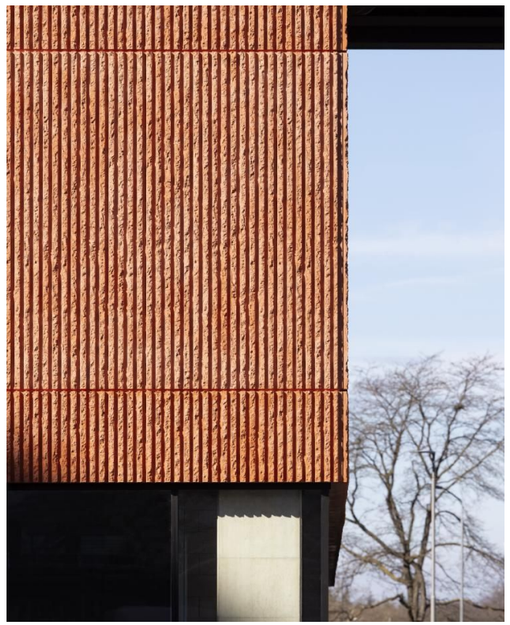
4. Facade detailing should incorporate **clear lines, expressed frames, reveals, and aligned joints** to create layered articulation, adding **depth**, **shadow**, and **dimensional richness** along streets and open-space frontages.













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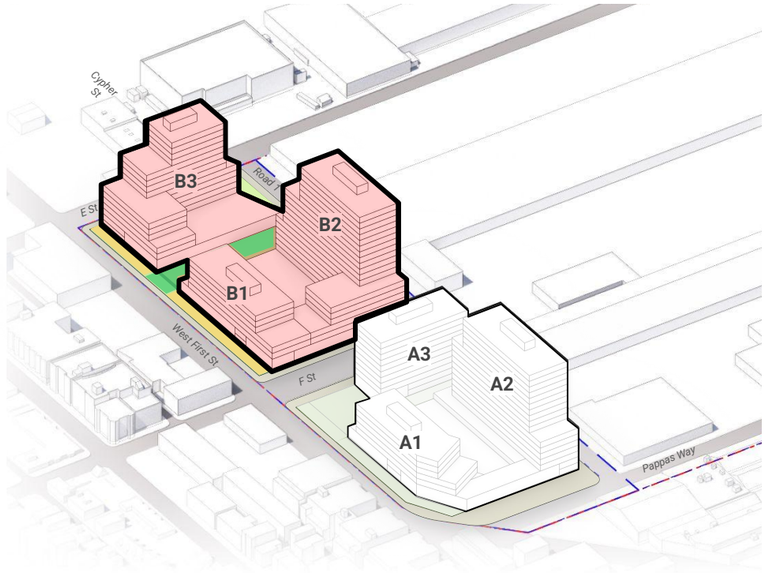
3. BUILDING DESIGN GUIDELINES

Block B Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

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Setback and Street Relationship



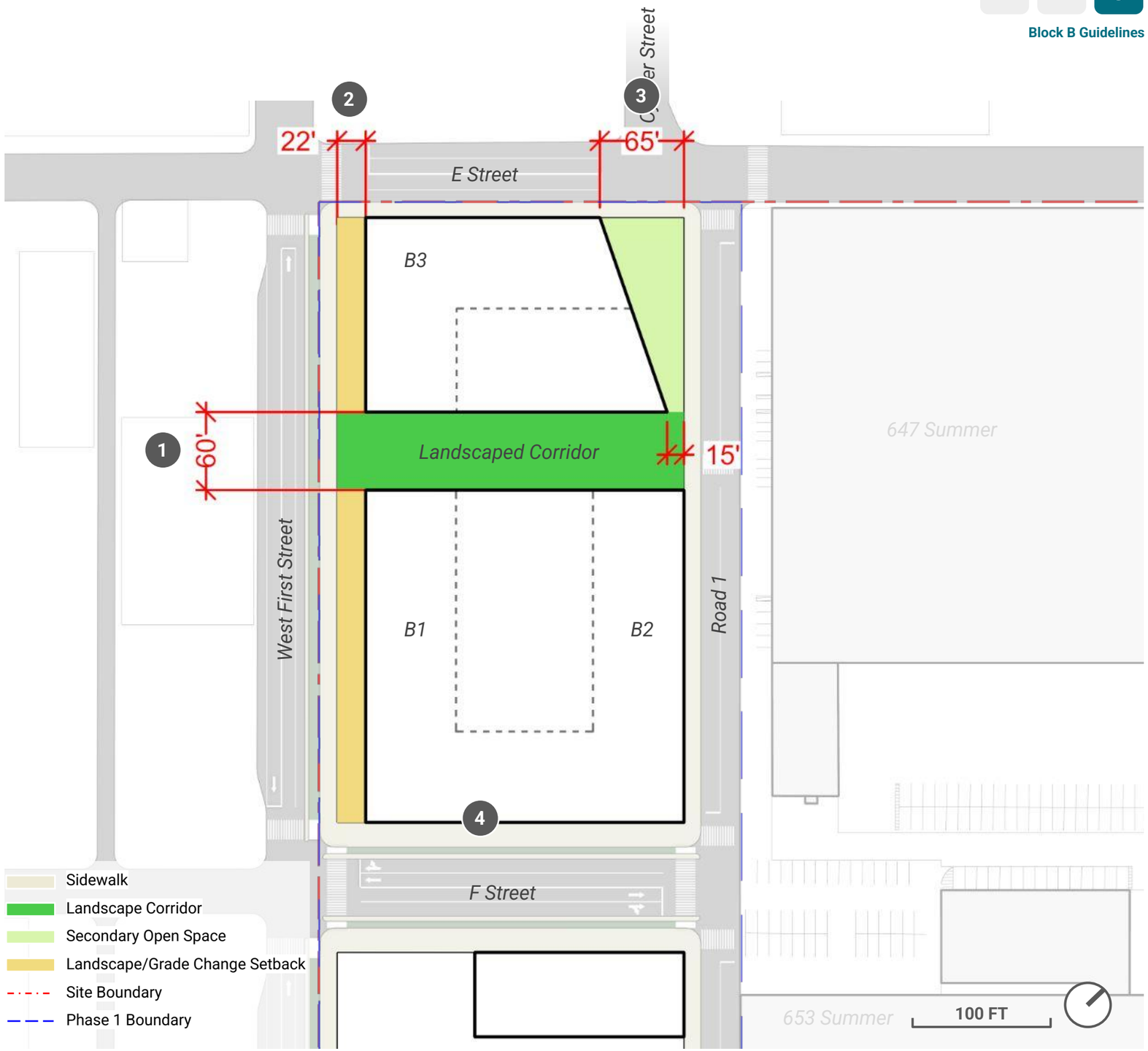
Design Guidelines

1. In order to establish the landscaped corridor, a min **60' wide separation** shall be established between Buildings B1/B2 and B3.

2. To accommodate necessary grade changes associated with a resilient DFE, buildings along West First Street should be **setback a min. of 22'**.

3. In order to promote visual and pedestrian connectivity from the west, Building **B3 shall have a min. 65' setback from Road 1 at E Street**; this setback may be reduced to 0' at the required landscaped corridor.

4. **Street wall** continuity for Building B1/B2 shall be prioritized **along F Street.**



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Massing

Design Guidelines

1. Relative building heights across the block should reflect their proximity to the area abutters. As the furthest away, building **B2 should be the tallest on the block**; building **B3 should be middle height**, and building **B1 should be the lowest** on the block.

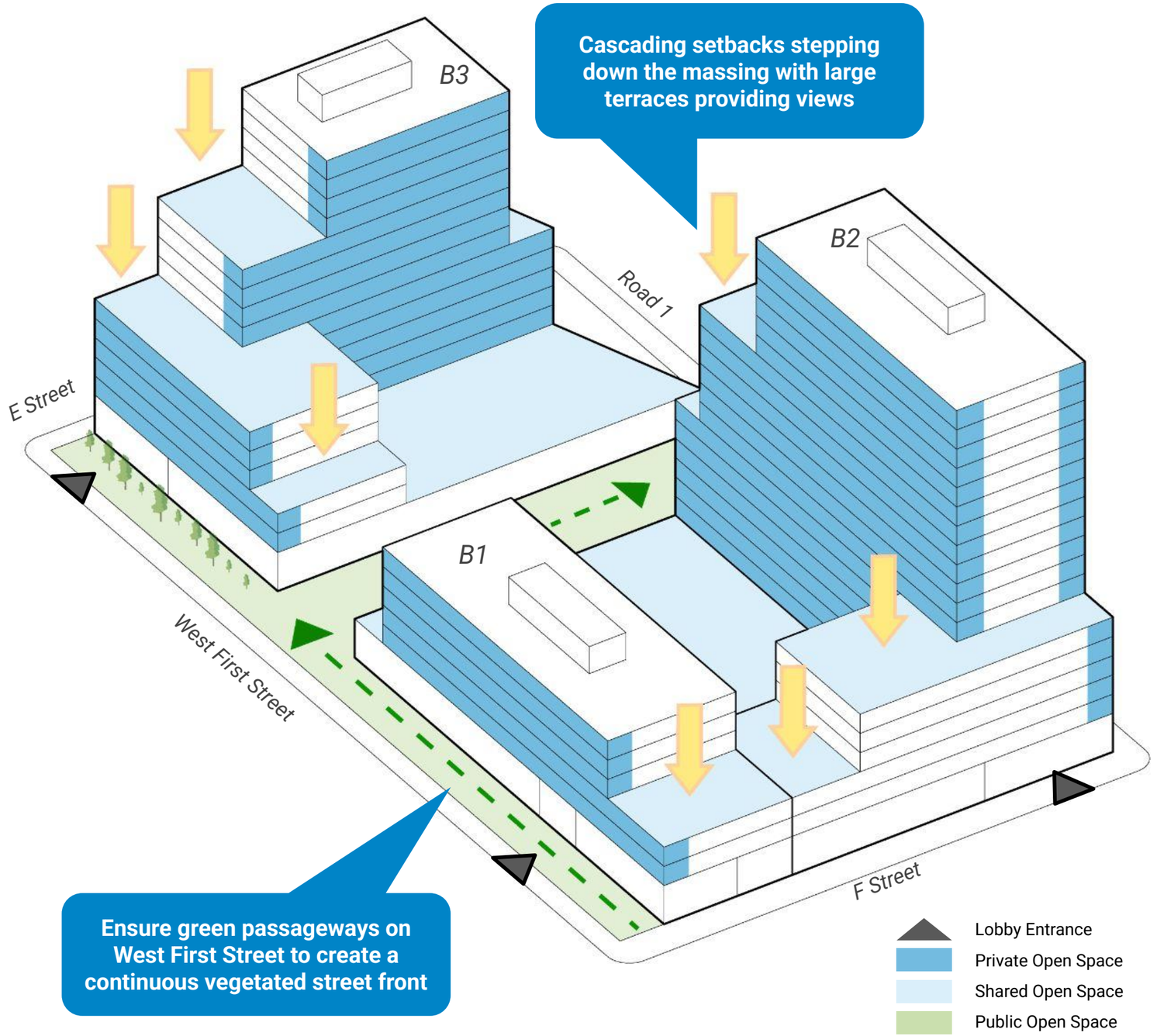
2. Building **B3 should have terraces** that step down **toward West First Street** and the required pedestrian passageway located between B3 and B1/B2.

3. Stepped terraces and building setbacks are encouraged along B1/B2's F Street frontage to create a **dynamic urban corridor along F Street**.

4. **Private outdoor spaces** are **encouraged**, particularly on the sides of buildings facing public open space(s).

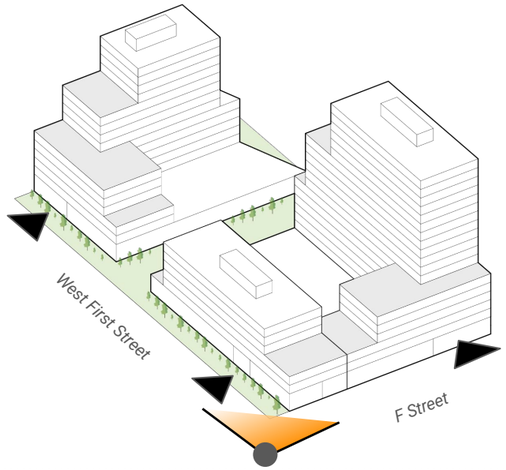
5. **Primary residential entrances** shall be planned along primary streets of **F** and **West First or the pedestrian passageway**; non-service oriented access points along E Street are discouraged.

6. **Service access shall be provided along Road 1 and/or E Street**, including parking access and loading bay(s).



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Massing



Design Guidelines Continued

1. Building **B1 shall not exceed a max building height of 77'**, Building **B2 shall not exceed 203'** and Building B**3 shall not exceed 160'** to roof of last habitable floor.

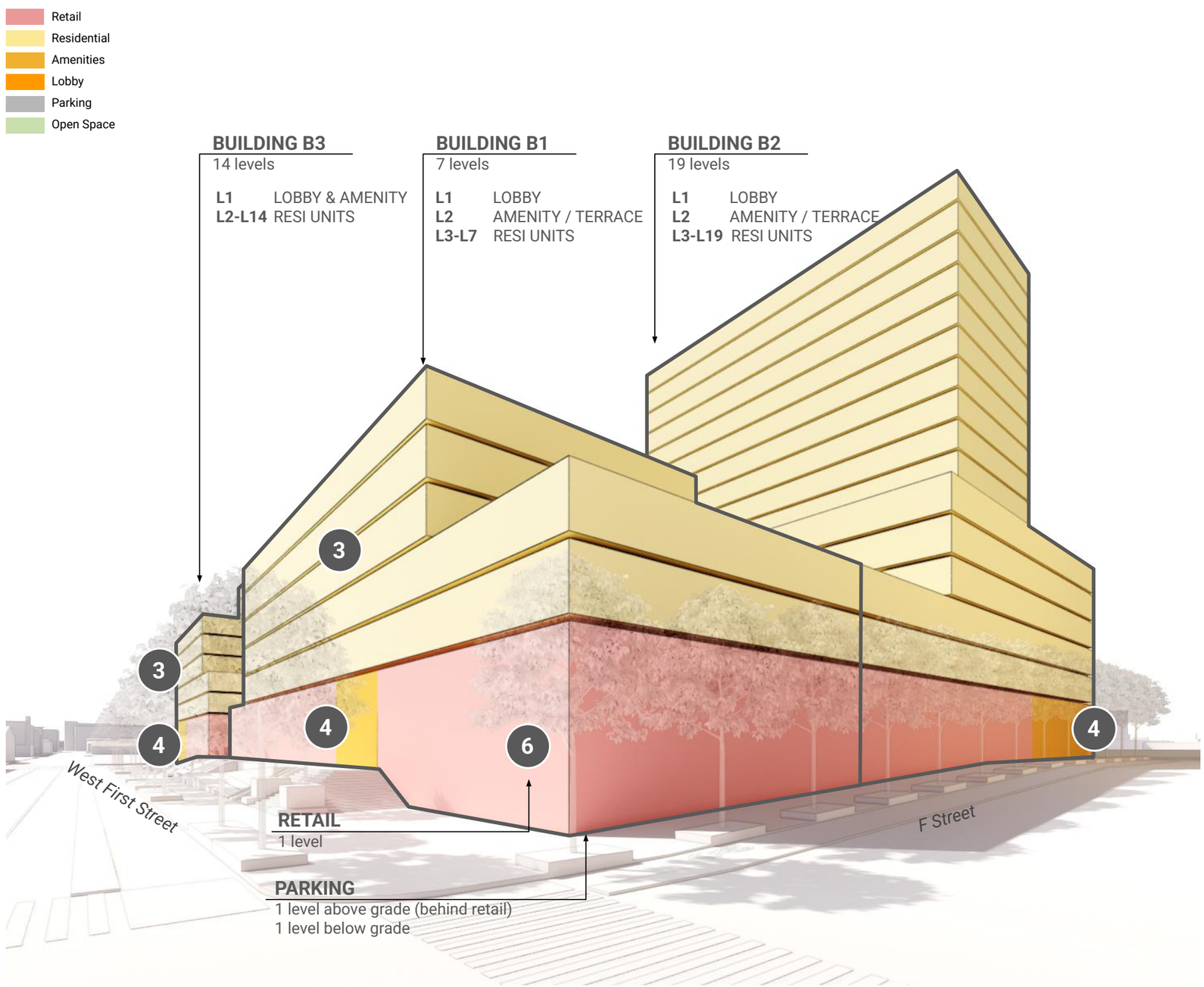
2. Building B3 should include a building footprint and proportion, **loading dock provisions, and frontage conducive to accommodating a potential ground floor grocery store**.

3. **Private outdoor open space is encouraged** on the West First Street frontage and facing the interior of the block.

4. Primary **building entrance** for B1 and B3 should be provided **along West First Street**, B2 primary entrance should be **along F Street.**

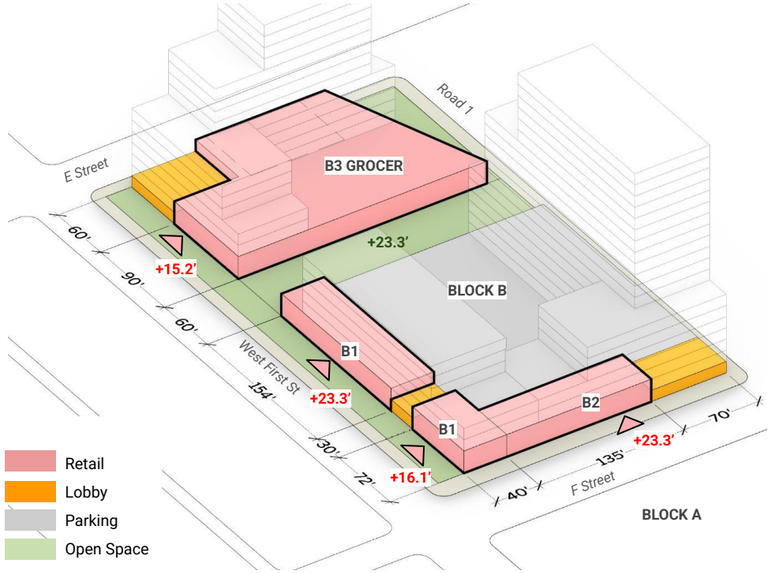
5. **Building width** of residential bar buildings should be between **65'-75'.**

6. **Ground floor should be activated** with active retail, community space(s), and residential lobby entrance(s) and be planned in consideration of the surrounding public realm.



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Ground Floor Activation



Design Guidelines

1. Building B3's ground floor shall be planned to maximize the potential of a **community-scaled grocery store** occupying its space.

2. Convenience and **frequency of use should guide the organization** of ground-floor retail, services, and grocery access.

3. Exterior storefront and interior space planning should take advantage of **opportunities to connect and relate to the exterior public realm**.

Building	Potential Retail Typology
B1	Neighborhood Services / Fast Casual
B2	Neighborhood Services
B3	Potential Grocer



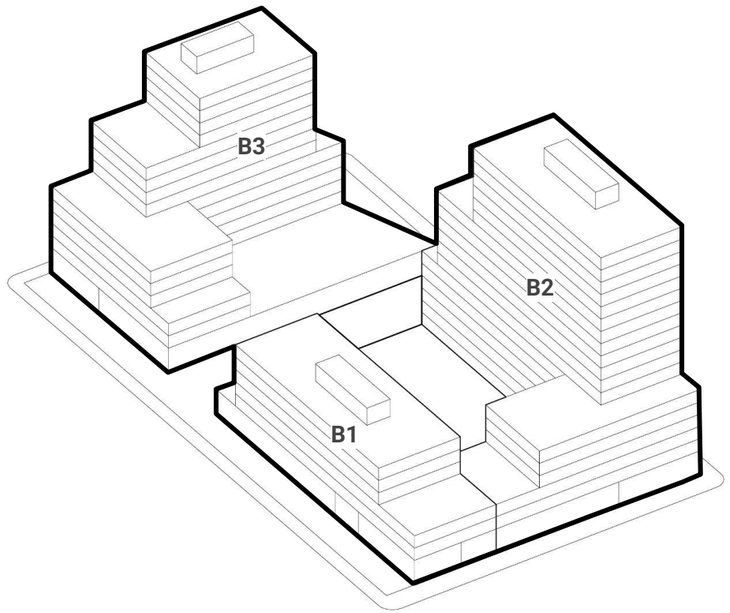






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Facade Look and Feel



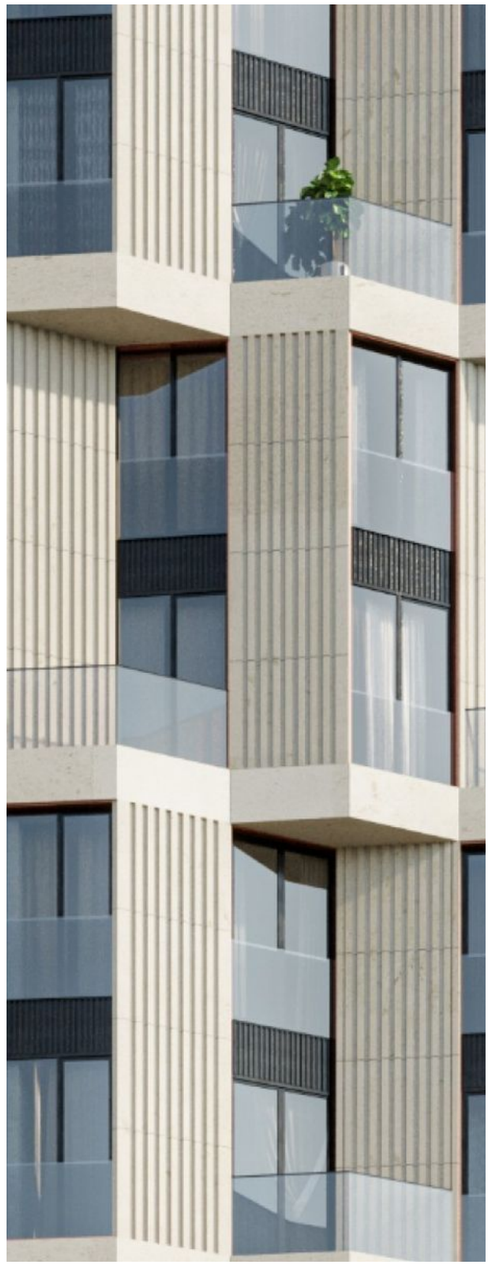
Design Guidelines

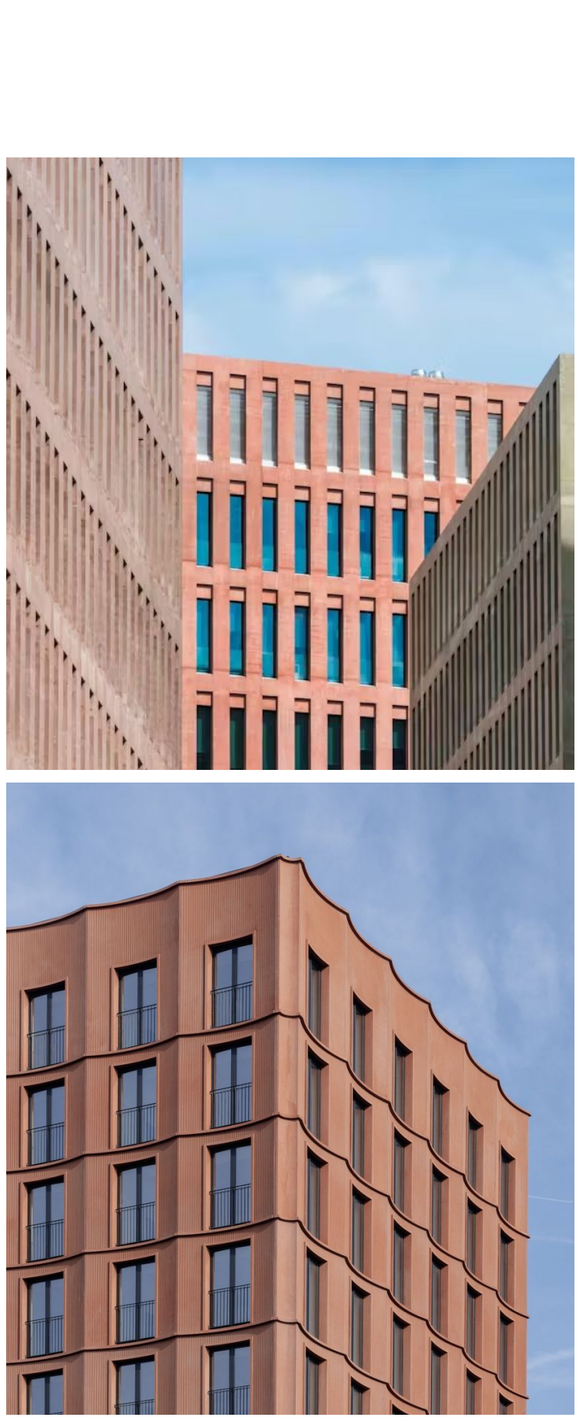
1. Material selection and facade expressions should support **active ground floor uses** and contribute to the **public realm** along the pedestrian passageway and West First Street.

2. Facade composition and material selection should balance **Block B's more public-facing retail base along the landscaped corridor** with the more **private residential** uses above through a clear shift in openness, scale, and depth.

3. **Subtle variations in color and material treatment are encouraged** to support distinctive visual identity while enhancing the public realm.

4. Facade articulation should introduce depth and consistent rhythm and respond to both street edges and the pedestrian passageway to **strengthen inside-out interactions.**









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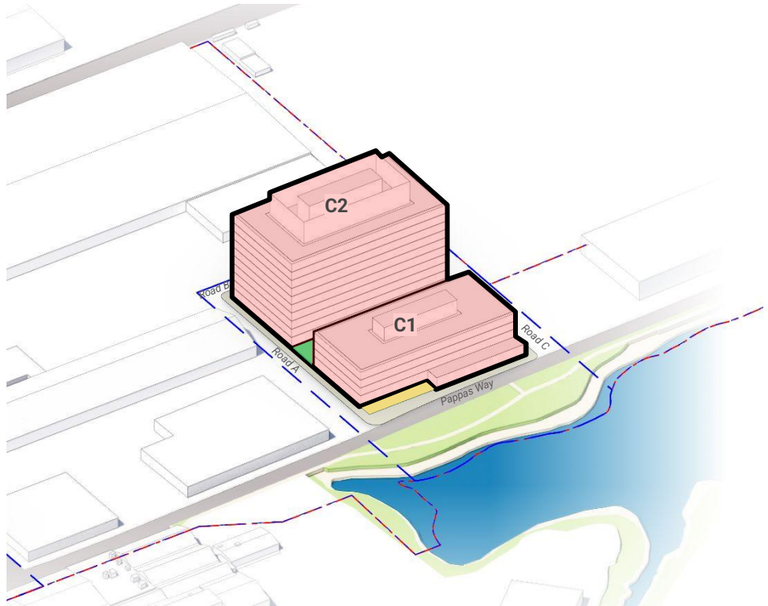
3. BUILDING DESIGN GUIDELINES

Block C Guidelines

- Setback and Street Relationship
- Massing
- Ground Floor Activation
- Facade Look and Feel

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Setback and Street Relationship



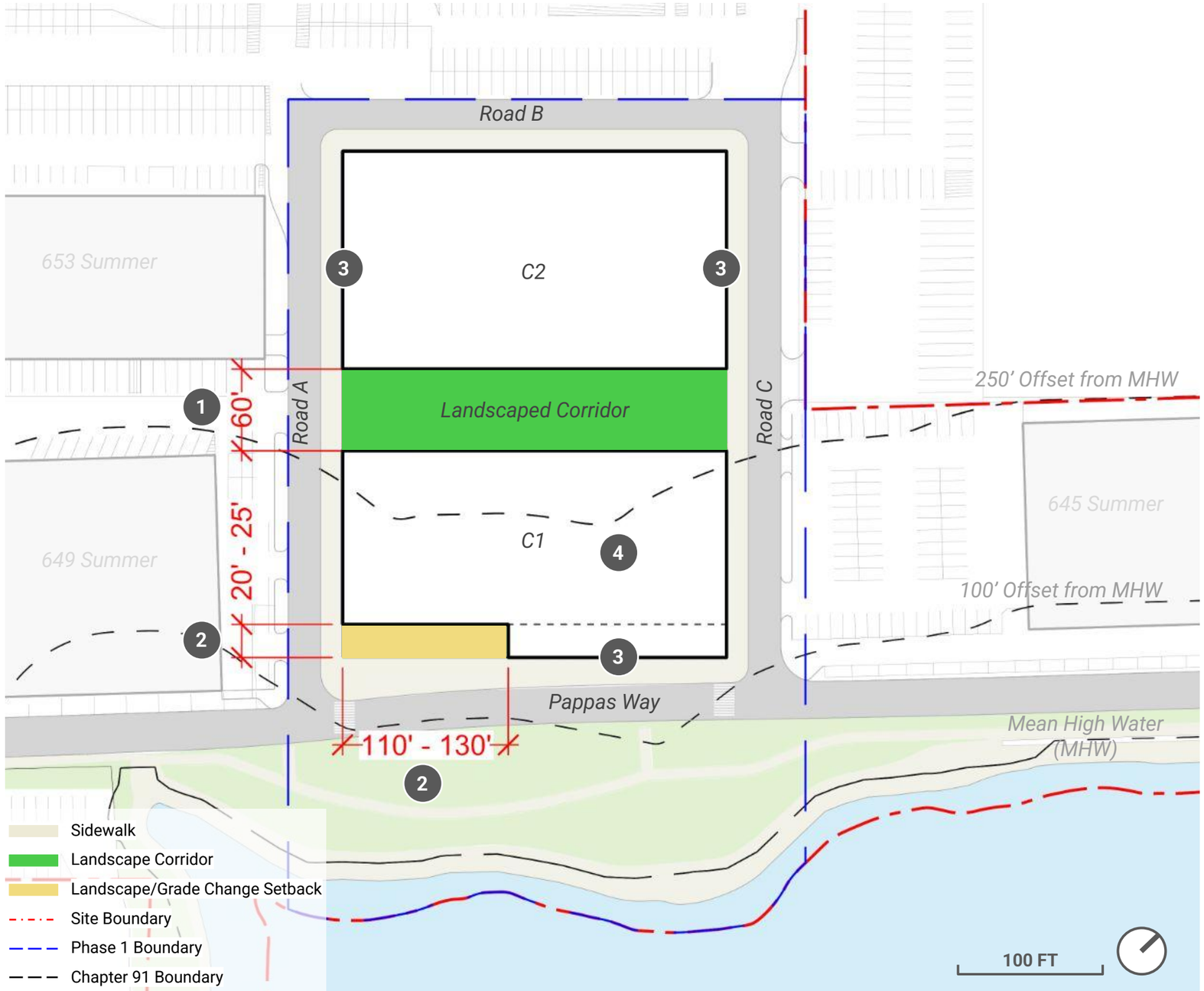
Design Guidelines

1. In order to establish a connective landscaped corridor and ensure mid-block permeability, a **min 60'** should be maintained between Buildings C1 and C2.

2. In order to accommodate necessary grade changes associated with a resilient DFE, **a 20-25' landscaped setback is encouraged** along a 110'-130' wide portion of the Pappas Way frontage.

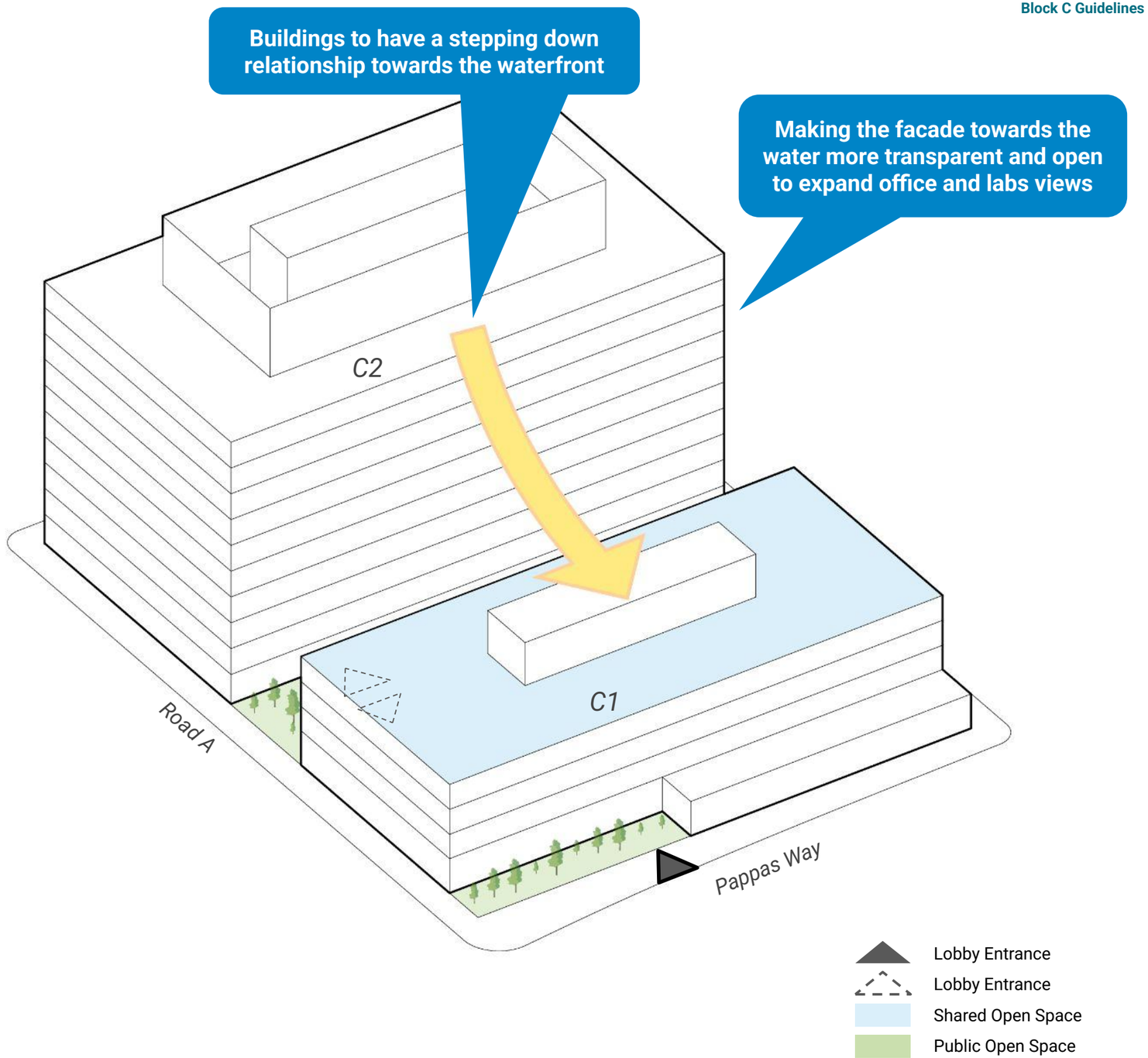
3. **Street wall continuity is encouraged** along Road A and Road C, except for the required landscaped corridor, and along at least half of the Pappas Way frontage.

4. Portion of the development under the **Chapter 91** jurisdiction shall comply with all regulatory provisions, including height, open space, ground floor usage, etc.



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Massing



Design Guidelines

1. **Building massing should transition** in height establishing a layered composition stepping down from taller volume of Building (C2) to the **lower volume of Building C1** along the waterfront to reinforce human scale and maintain views towards the interior of the site from public open spaces.

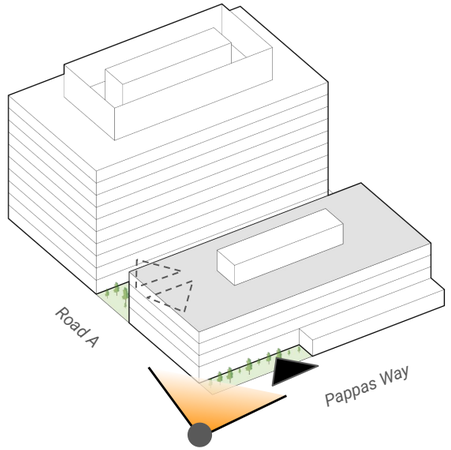
2. **Building orientation should maximize views**, ensure daylight access, and provide **visual connectivity toward the water.**

3. **Primary building entrance** for Building **C1 should face Pappas Way**; Building **C2 should be planned to support interim access from the landscape corridor**, while maintaining flexibility for a through-lobby to reach Road B.

4. **Ground floor should be activated** with retail, community space(s) and/or facilities of public accommodation and commercial office lobbies.

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Massing



Design Guidelines Continued

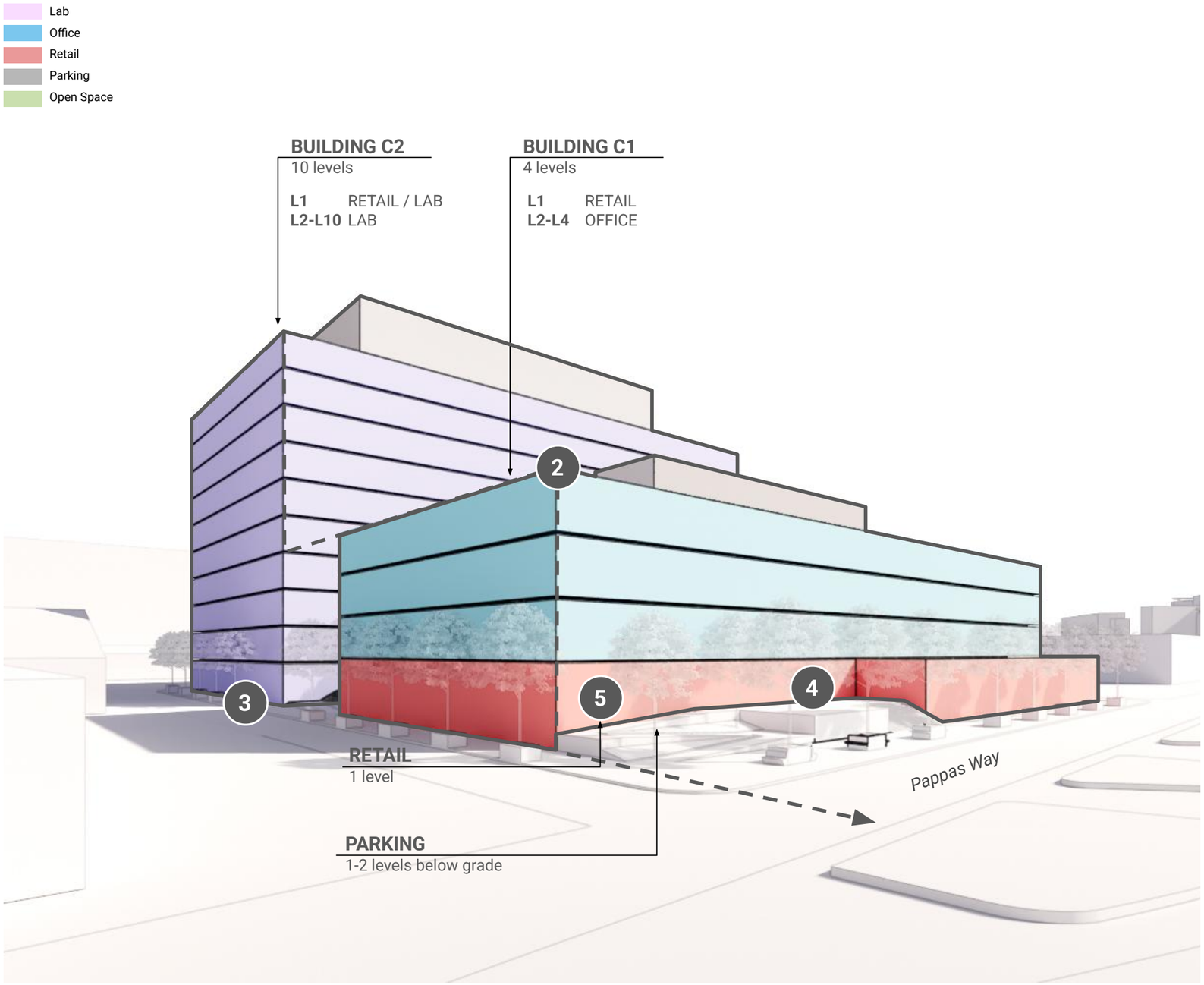
1. Building **C1 shall not exceed a max building height of 87'**, and building **C2 shall not exceed 177'** to the roof of the last habitable floor.

2. Building **C1 should maintain the lower massing** along the waterfront, while C2 should maintain the taller massing located behind C1 in order to **preserve openness and views** toward the tower.

3. A minimum **60' landscaped corridor** shall be maintained between buildings C1 and C2 to provide visual openness, pedestrian connectivity, and shared public open space.

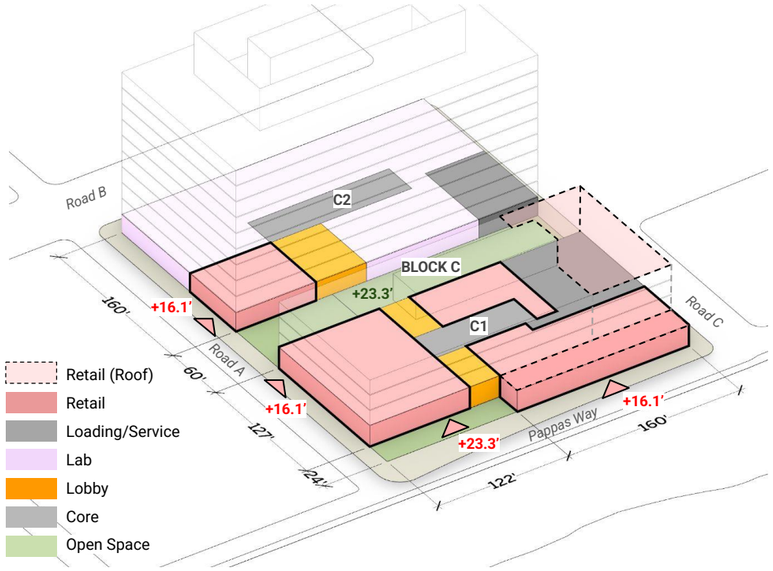
4. **Primary building entrance** for building C1 should be along the waterfront frontage. Primary building lobby entrances for C2 should be provided facing the landscaped corridor.

5. **Ground floors should be activated** with retail, facilities of public accommodation, and/or commercial office lobby entrances, and be planned in consideration of the surrounding public realm.



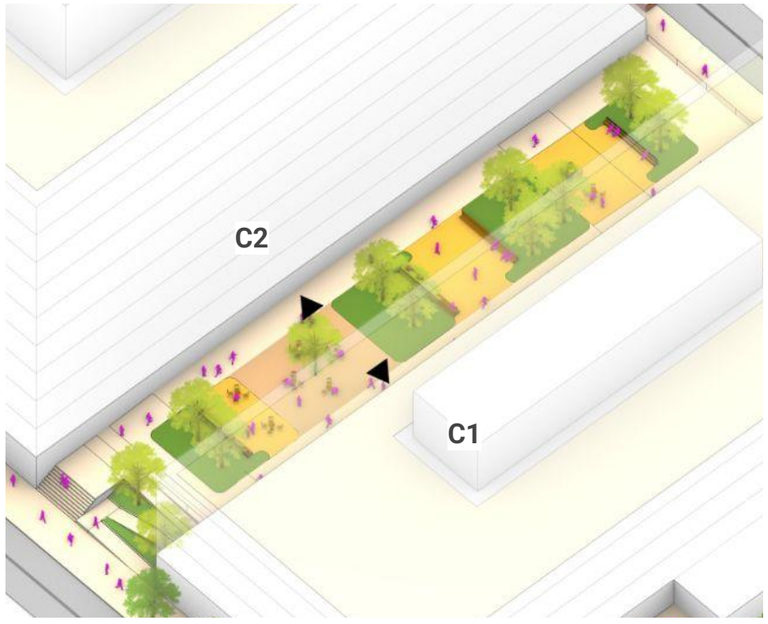
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Ground Floor Activation











Design Guidelines

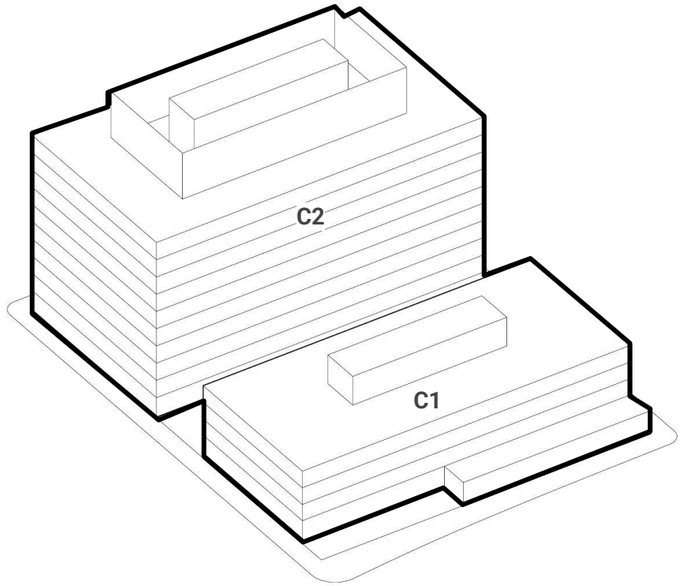
1. Encourage the inclusion of a **variety of health and wellness-oriented businesses** to complement upper story uses and to activate this waterfront location.

2. Exterior storefront and interior space planning should take advantage of **opportunities to connect and relate to the exterior public realm**.

Building	Retail Typology
C1	Full Service Restaurant
C2	Fast Casual

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Facade Look and Feel



Materiality

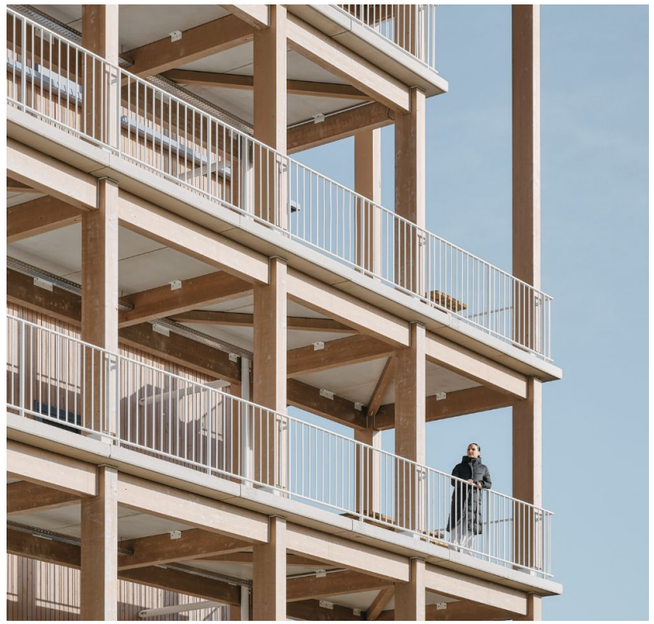
1. Building structure and facade materials should reflect the industrial character of the waterfront while presenting a **contemporary architectural expression**.

2. Materials and facade systems should be designed to withstand **waterfront conditions** and support **long-term resilience** and **durability**.

3. Waterfront-facing facades should incorporate **increased transparency** to support active public frontages along the waterfront.

4. Facade design should support productive workplace environments by **balancing daylight access, views, and environmental performance.**

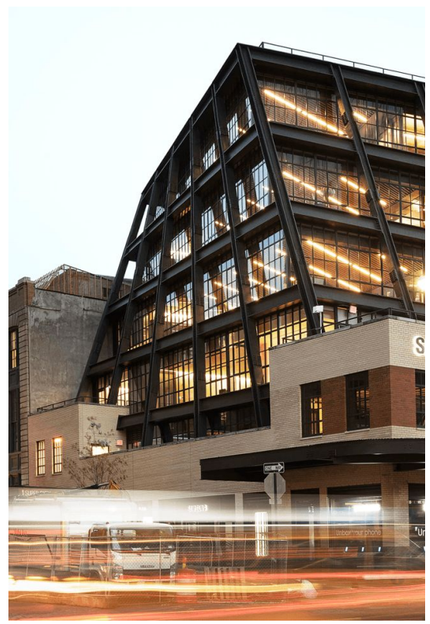
5. Renewable and **low-carbon material systems are encouraged** where feasible as part of a contemporary and sustainable response to the waterfront context.











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OXFORD

PAPPAS ENTERPRISES, INC.

SOM **SCAPE**

Appendix B

Public Involvement Plan

PUBLIC INVOLVEMENT PLAN

In accordance with the Special Review Procedure ("SRP") issued by the Secretary of Energy and Environmental Affairs ("Secretary") on April 1, 2024, Oxford Property Group and Pappas Enterprises (together, the "Proponent") has developed a Public Involvement Plan ("PIP") for the Reserved Channel Master Plan Project (the "Master Plan Project"). The Master Plan Project, located in South Boston along the Reserved Channel, will redevelop approximately 38.23 acres of land ground-leased by the Proponent from Massport, as well as approximately 3.43 acres owned in fee by the Proponent. The Master Plan Project program is proposed to include approximately 4,079,000 square feet ("sf") of commercial office and research laboratory uses, approximately 205,000 sf of hotel space planned with facilities of public accommodation anticipated to include a public marina, approximately 1,496,000 sf of residential uses (approximately 1,578 residential units), and approximately 218,000 sf of retail and/or amenities uses. In addition, the Master Plan Project will include new streets through the site, as well as a series of open spaces, plazas, pedestrian connections, and other upland and waterfront spaces.

Starting in 2020, the Proponent began to reach out to local residents and property owners, neighborhood civic leadership and the South Boston community, for the purpose of introducing them to the Master Plan Site and seeking their early input and guidance on long-term visioning and potential future master planning of the same.

The PIP is expected to be a living document that will be revisited periodically during the review of the Master Plan Project, and will be adapted, as necessary, through comments received and as implementation of the PIP takes place during the Master Plan Project's review.

PIP Framework

As a part of the PIP, the Proponent will conduct public outreach to the surrounding area, including Environmental Justice ("EJ") populations within the designated geographic area ("DGA") of the Master Plan Project Site prior to initiating each phase of development under the Master Plan Project. The PIP for the Master Plan Project will include the following:

Notification/Communications Strategy

- Provide notification of all Citizens Advisory Committee ("CAC")/public meetings and filings under the SRP through a broad range of media such as email listserv, project distribution list, project website, social media, flyers/mailings, and published notice in local newspapers, in a manner that effectively alerts stakeholders to scheduled meetings and filings. All meetings will be publicized with sufficient notice of the meeting (generally, at least two weeks in advance). All notifications shall be translated into languages identified as spoken by 5 percent or more of the population located within one mile of the Master Plan Project Site.
- Conduct community-based outreach in various forms, including the potential for distribution of project information at community fairs or other local gathering places,

door-to-door mailings, pop-up events at local venues, and/or other efforts to spread the word in places where the community is located. The Proponent will make reasonable effort to make materials be in plain language at the 7th to 8th grade reading level, and offer translations into languages identified as spoken by 5 percent or more of the population located within one mile of the Master Plan Project Site.

- Maintain and update a project website which hosts or links to website(s) that include all filings submitted under the SRP and all City filings for the Master Plan Project. A comment box will be kept on the Project website for the submission of any comments, questions, or concerns by any member of the community.

Public Meeting Strategy

- Hold at least one public meeting in advance of each Master Plan Project filing, and if directed by the Secretary, each subsequent EIR, as well as in advance of each subsequent PCN under the SRP, with specific focus on EJ populations. Public meetings are anticipated to provide an overview of the Master Plan Project or subject of the filing to provide an overview to those that may not be familiar with the Master Plan Project. Interpretation will be offered for meetings and will be provided on request. For those languages spoken by 10 percent or more of the population within a block group within one mile of the Master Plan Project Site, oral interpretation in these languages will be provided for any MEPA site visit or remote consultation session without need for advanced request. In addition, any in-person public meetings required by the SRP or future certificates taking place within neighborhoods with high linguistic isolation (block groups with a population of 10 percent or greater that speaks a language other than English) should also provide oral interpretation in these languages without the need for advance request. Materials related to these meetings such as meeting notifications and presentation slides will be provided in the identified languages.

Ongoing Engagement Strategy

- Continue to meet with public officials (e.g. state legislators, local leaders, transportation officials, and others) to provide updates and to inform those officials of future plans.
- Each phase of the Master Plan will require subsequent filings that provide detailed information on each phase in the form of a Project Commencement Notice ("PCN"). Community Based Organizations ("CBOs") and Tribes will be notified of each PCN through the distribution of the EJ Screening Form, or any successor form or required document, provided by the MEPA EJ Office at least 30 days prior to filings. A project-specific EJ Distribution List was generated for the project, and the Proponent will maintain to the best of their ability an up-to-date EJ Distribution list over the term of the SRP. The EJ Distribution List will be maintained to include CBOs, tribes, CAC members, grassroots CBOs identified by the Proponent, and any individual or organization that comments on any Master Plan Project material for future notifications of filings and meetings.

This PIP is intended to serve as a framework for the MEPA filings related to the Master Plan Project over the anticipated 20+ year timeframe, unless amended in consultation with the MEPA Office and EEA EJ Office. The PIP shall be consistent with best practices as outlined in current MEPA EJ protocols and any successor protocols that may be adopted as of the time of future reviews.

Following the submission of the Master Plan Project document, the Proponent will continue to provide outreach to community and EJ populations through the means identified above.

Citizens Advisory Committee

The Proponent requested the Secretary establish a CAC. The CAC will serve as a conduit for public input and review of the Phase 1 Project and the Master Plan Project, including the parcels owned in fee by the Proponent. The CAC will consist of community stakeholders whose interests represent the broader community impacted by the Master Plan Project and will include the existing CAC members already appointed for the City's Article 80 process. The purpose of the CAC will be to provide input and guidance from these designated persons to the Proponent, the City, the MEPA Office, and the Secretary throughout the review process for the Master Plan Project and the Phase 1 Project by reviewing and submitting comments on documents as well as offering feedback during public meetings with the Proponent. However, the CAC will not replace or modify any of the traditional public meetings anticipated under the BPDA Large Project Review Process or the MEPA public review process.

To provide a formal mechanism for CAC feedback and Proponent response, and in alignment with MEPA review procedures, the method for information sharing, and comment and subsequent response, is as follows:

Information Sharing

1. The Proponent will distribute each MEPA filing to the CAC members electronically upon submission of the same for regulatory review and public comment. The Proponent will notify the CAC of a filing at least two weeks in advance. If requested by the CAC, the Proponent will provide an advance copy of the MEPA filing and will provide information describing how a CAC member can receive a hard copy of the filing.

2. The Proponent will distribute public presentations in digital format to the CAC members after CAC/public meetings.

3. The Proponent will ensure that all MEPA filings submitted under the SRP and all City filings for the Master Plan Project will be hosted on the Master Plan Project website or other linked websites.

4. The CAC will deliver comments to the Proponent through CAC/public meetings with the Proponent and written correspondence directed to the Secretary during the comment period of each MEPA filing.

Comment and Response

5. Through the public review process, the Proponent will meet with the CAC between each MEPA filing, commencing prior to the filing of the ENF. The Proponent will set aside time during each meeting to receive comments and feedback on the material presented. Following each meeting it is anticipated that the CAC may provide additional written comment. Throughout these engagements, the Proponent will use best efforts to catalogue feedback to inform opportunities to address the same through subsequent filings. The Proponent will articulate in each subsequent filing what modifications, if any, were made to respond to CAC feedback.

6. With subsequent MEPA filings a public comment period will serve to formally capture additional feedback that may be submitted by the CAC. A CAC/public meeting will be held after the comment period but before additional filings. This meeting will be organized by the Proponent with the comments received to date in mind and as applicable, highlight opportunities and constraints of the next filing to address. At this meeting, it is anticipated that the CAC members may provide additional comments for the Proponent regarding the content of the filing.

7. If no additional filing is required for that phase of the Master Plan Project, the Proponent will provide a summary document to the CAC, and post such document on the Master Plan Project website, outlining all major comments received on the filing, information related to any changes to the Master Plan Project, and responses to the comments and questions received. If additional input is requested by the CAC in response to the Proponent's summary document, an additional meeting may be held to discuss follow-up.

Appendix C

Air Quality

GHG from Loading

Trucks/day	56		
Idle time/truck	5	minutes	
Truck idle time/day	280	minutes	
Truck idle time/day	4.6666667	hours	
Truck idle factor - 0 mph, Type 52 & 61	4793.93	g/hr	Atmospheric CO2
Suffolk County			
Year: 2033			
Atm. CO2 emissions	34507.713	grams/day	
Atm. CO2 emissions	76.076883	lbs/day	
Atm. CO2 emissions	**27,768.06**	**lbs/yr**	
Atm. CO2 emissions	**13.9**	**tons/yr**	

Reserved Channel Development - Boston, MA

Roads

	VOC lbs/day	VOC tons/yr	NOx lbs/day	NOx tons/yr	CO2 lbs/day	CO2 tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr
2025 Existing	30.4	5.55	13.1	2.39	30,671	5,597	5.4	0.99	1.0	0.19
2033 No-Build	28.6	5.22	8.9	1.62	30,316	5,533	6.5	1.18	1.0	0.18
delta from 2025 Existing	-1.8	-0.33	-4.2	-0.77	-354	-65	1.0	0.19	0.0	0.00
2033 Build	29.7	5.43	9.2	1.68	31,434	5,737	6.7	1.23	1.1	0.19
delta from 2033 No-Build	1.1	0.21	0.3	0.06	1,117	204	0.2	0.04	0.0	0.01

Intersections

	VOC lbs/day	VOC tons/yr	NOx lbs/day	NOx tons/yr	CO2 lbs/day	CO2 tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr
2025 Existing	2.8	0.52	2.5	0.45	8,191	1,495	0.13	0.02	0.12	0.02
2033 No-Build	4.0	0.73	5.1	0.93	13,645	2,490	0.08	0.01	0.07	0.01
delta from 2025 Existing	1.2	0.21	2.6	0.48	5,454	995	-0.05	-0.01	-0.05	-0.01
2033 Build	4.3	0.78	4.4	0.80	12,893	2,353	0.08	0.01	0.07	0.01

Total

Pollutant	VOC lbs/day	VOC tons/yr	NOx lbs/day	NOx tons/yr	CO2 lbs/day	CO2 tons/yr	PM10 lbs/day	PM10 tons/yr	PM2.5 lbs/day	PM2.5 tons/yr
2025 Existing	33.2	6.06	15.6	2.84	38,861	7,092	5.57	1.02	1.15	0.21
2033 No-Build	32.6	5.95	14.0	2.55	43,961	8,023	6.56	1.20	1.08	0.20
delta from 2025 Existing	-0.6	-0.11	-1.6	-0.29	5,100	931	0.99	0.18	-0.06	-0.01
2033 Build	34.0	6.21	13.6	2.48	44,326	8,090	6.81	1.24	1.12	0.21
delta from 2033 No-Build	1.4	0.26	-0.4	-0.07	365	67	0.25	0.05	0.04	0.01

Minor differences in sums are due to rounding of individual values.

Pound per day to tons per year is based on an 100% factor to account for peak daily to annual data.

Reserved Channel Development - Boston, MA

	units	2025 Existing	2033 No-Build	2033 Build
Daily VMT	veh-miles/day	40,370	48,542	50,087
Net Change	veh-miles/day	-	8,173	1,545
Net Delay	veh-hrs/day	1,262	2,324	2,475
Net Change	veh-hrs/day	-	1,062	151
Roadway CO_2e	tpy	5,597	5,533	5,737
Intersection CO_2e	tpy	1,495	2,490	2,353
Total CO_2e	tpy	7,092	8,023	8,090
Net CO_2e Change	tpy	-	931	67

Reserved Channel Development - Boston, MA

	units	Case 1 2033 Build minus 2033 No-Build
Daily VMT	veh-miles/day	1544.7
Net Change	veh-miles/day	-
Net Delay	veh-hrs/day	150.8
Net Change	veh-hrs/day	-
Roadway CO2e	tpy	204
Intersection CO2e	tpy	-137
Net CO2e Emissions	tpy	67
Net CO2e Change	tpy	-
Percent Change		-

GHG from Loading

Trucks/day	56		
Idle time/truck	5	minutes	
Truck idle time/day	280	minutes	
Truck idle time/day	4.6666667	hours	
Truck idle factor - 0 mph, Type 52 & 61	4793.93	g/hr	Atmospheric CO2
Suffolk County			
Year: 2033			
Atm. CO2 emissions	34507.713	grams/day	
Atm. CO2 emissions	76.076883	lbs/day	
Atm. CO2 emissions	**27,768.06**	**lbs/yr**	
Atm. CO2 emissions	**13.9**	**tons/yr**	

Reserved Channel Development - Boston, MA

Regional Mesoscale Emissions Analysis - Roadway Emissions
Link Data

Link Number	MOVES Link ID	Roadway Segment	Link Distance (miles)	Estimated Average Speed (mph)	Weekday AM Peak Hour Volume			Weekday PM Peak Hour Volume		
					2025 EX AM	2033 NB AM	2033 B AM	2025 EX PM	2033 NB PM	2033 B PM
1	2	Congress St. W of B Street	0.10	30	751	1,210	1,210	859	1,278	1,278
2	3	B St. S of Congress	0.10	30	1,176	1,492	1,518	1,320	1,692	1,710
3	4	B St. N of Congress	0.10	30	619	803	803	629	923	743
4	5	Congress St. B St. to D St.	0.18	30	914	1,320	1,346	1,055	1,396	1,414
5	6	D St. N of Congress	0.10	30	302	398	398	686	966	966
6	7	Congress St. E of D St.	0.10	30	250	363	361	285	373	373
7	8	D St. from Congress St. to I-90 Ra	0.09	30	874	1,266	1,291	1,244	1,698	1,716
8	9	I-90 Ramp	0.10	35	293	366	387	488	610	629
9	10	Congress St. I-90 Ramp to Summ	0.06	30	919	1,216	1,275	1,018	1,359	1,414
10	11	Summer St. W of D St.	0.10	30	793	1,095	1,135	942	1,122	1,184
11	12	Congress St. from Summer St. to	0.06	30	469	655	672	548	815	821
12	13	Summer St. from D St. to Pumph	0.12	30	982	1,404	1,469	1,056	1,310	1,417
13	14	Fargo St. from D St. to E St.	0.10	30	212	212	224	249	261	265
14	15	Fargo St. W of D St.	0.10	30	46	49	46	15	15	15
15	16	Congress St. from Fargo St. to Cy	0.38	30	371	554	562	342	621	623
16	17	Cypher St. from D St. to E St.	0.10	30	150	150	240	218	218	251
17	18	Cypher St. from S. Boston Bypass	0.24	30	612	681	760	598	682	710
18	19	S Boston Bypass N of Cypher Stre	0.10	30	924	1,121	1,142	1,281	1,431	1,433
19	20	Richards St. (W of S. Boston Bypa	0.10	30	471	735	735	553	717	717
20	21	S. Boston Bypass S of Cypher St.	0.10	30	665	805	863	832	918	944
21	22	Congress St. from Cypher St. to V	0.06	35	466	622	622	474	745	745
22	23	W 1st St. W of Congress St.	0.10	30	252	285	291	282	348	353
23	24	D St. S of W 1st Street	0.10	30	158	296	302	102	230	235
24	25	W 1st St. from D St. to E St.	0.10	30	536	581	581	522	661	661
25	26	E St. S of W 1st St.	0.10	30	231	231	239	527	567	574
26	27	W 1st. from E St. to F St.	0.09	30	655	679	679	520	610	610
27	28	E St. from Cypher St. to W 1st St.	0.05	30	280	280	294	434	434	446
28	29	Cypher St. from E St. to SITE DRIV	0.09	30	48	48	169	23	23	71
29	30	E St. from Fargo St. to Cypher St.	0.38	30	189	189	204	259	259	264
30	31	Fargo St. from E St. to Summer S	0.09	30	141	141	141	78	78	75
31	32	E St. N of Fargo St.	0.10	30	36	36	36	18	18	264
32	33	Summer St. from Pumphouse Rd	0.05	30	1,630	2,012	2,132	1,625	1,950	2,018
33	34	Pumphouse Rd. from Haul Rd. to	0.06	30	691	691	750	659	659	702
34	35	Haul Rd. W of Pumphouse Rd.	0.10	15	1,013	1,045	1,075	958	973	985
35	36	Haul Rd. E of Pumphouse Rd.	0.10	15	401	433	433	459	474	474
36	37	Summer Rd. From Fargo St. to D	0.04	30	1,633	2,012	2,118	1,643	1,950	2,015
37	38	Drydock Ave. N of Summer St.	0.10	30	408	571	571	751	721	721
38	39	Drydock Ave from Summer St. to	0.29	30	268	319	422	402	465	518
39	40	UPS Driveway	0.10	15	36	36	215	24	24	109
40	41	Drydock Ave. from UPS Drivewa	0.19	30	258	258	367	396	396	444
41	42	Drydock Ave. from Cypher St. to	0.06	30	289	289	321	400	400	422
42	43	W 1st St. from Pappas Way to Dc	0.09	30	680	722	761	1,056	900	934
43	44	W 1st. St. from F St. to Pappas W	0.09	30	636	668	668	554	668	668
44	45	F St. S of W 1st St.	0.10	30	113	113	113	84	84	84
45	46	Pappas Way from W 1st St. to Dc	0.08	30	130	140	145	77	87	87
46	47	Dorchester St. S of Pappas Way	0.10	30	337	337	374	400	451	484
47	48	Dorchester St. btwn W 1st St. to	0.12	30	236	236	268	369	420	453
48	49	E 2nd St. E of Dorchester St.	0.10	30	98	98	98	66	66	66
49	50	W 1st Street from Dorchester St.	0.19	30	587	587	589	494	564	565
50	51	Summer St. S of E 1st. St.	0.10	30	940	1,069	1,069	1,077	1,216	1,216
51	52	E 1st St. E of Summer St.	0.10	30	658	722	722	516	647	647
52	53	Summer St. from Drydock Ave to	0.48	30	1,540	1,869	1,869	1,520	1,817	1,817
53	54	SITE DRIVE (Build)	0.06	15	0	0	7	0	0	1
54	55	Cypher St from SITE DRIVE to Par	0.09	30	48	48	65	23	23	17

Reserved Channel Development - Boston, MA

Regional Mesoscale Emissions Analysis - Roadway Emissions
Link Data

Link Number	MOVES Link ID	Roadway Segment	Link Distance (miles)	Estimated Average Speed (mph)	K-factor	Average Daily Traffic (ADT)			Average Hourly Traffic Volumes		
						2025 EX AM	2033 NB AM	2033 B AM	2025 EX AM	2033 NB AM	2033 B AM
1	2	Congress St. W of B Street	0.10	30	10.0%	8,590	12,780	12,780	358	533	533
2	3	B St. S of Congress	0.10	30	10.0%	13,200	16,920	17,100	550	705	713
3	4	B St. N of Congress	0.10	30	10.0%	6,290	9,230	8,030	262	385	335
4	5	Congress St. B St. to D St.	0.18	30	10.0%	10,550	13,960	14,140	440	582	589
5	6	D St. N of Congress	0.10	30	10.0%	6,860	9,660	9,660	286	403	403
6	7	Congress St. E of D St.	0.10	30	10.0%	2,850	3,730	3,730	119	155	155
7	8	D St. from Congress St. to I-90 Ra	0.09	30	10.0%	12,440	16,980	17,160	518	708	715
8	9	I-90 Ramp	0.10	35	10.0%	4,880	6,100	6,290	203	254	262
9	10	Congress St. I-90 Ramp to Summ	0.06	30	10.0%	10,180	13,590	14,140	424	566	589
10	11	Summer St. W of D St.	0.10	30	10.0%	9,420	11,220	11,840	393	468	493
11	12	Congress St. from Summer St. to	0.06	30	10.0%	5,480	8,150	8,210	228	340	342
12	13	Summer St. from D St. to Pumph	0.12	30	10.0%	10,560	14,040	14,690	440	585	612
13	14	Fargo St. from D St. to E St.	0.10	30	10.0%	2,490	2,610	2,650	104	109	110
14	15	Fargo St. W of D St.	0.10	30	10.0%	460	490	460	19	20	19
15	16	Congress St. from Fargo St. to Cy	0.38	30	10.0%	3,710	6,210	6,230	155	259	260
16	17	Cypher St. from D St. to E St.	0.10	30	10.0%	2,180	2,180	2,510	91	91	105
17	18	Cypher St. from S. Boston Bypass	0.24	30	10.0%	6,120	6,820	7,600	255	284	317
18	19	S Boston Bypass N of Cypher Stre	0.10	30	10.0%	12,810	14,310	14,330	534	596	597
19	20	Richards St. (W of S. Boston Bypa	0.10	30	10.0%	5,530	7,350	7,350	230	306	306
20	21	S. Boston Bypass S of Cypher St.	0.10	30	10.0%	8,320	9,180	9,440	347	383	393
21	22	Congress St. from Cypher St. to V	0.06	35	10.0%	4,740	7,450	7,450	198	310	310
22	23	W 1st St. W of Congress St.	0.10	30	10.0%	2,820	3,480	3,530	118	145	147
23	24	D St. S of W 1st Street	0.10	30	10.0%	1,580	2,960	3,020	66	123	126
24	25	W 1st St. from D St. to E St.	0.10	30	10.0%	5,360	6,610	6,610	223	275	275
25	26	E St. S of W 1st St.	0.10	30	10.0%	5,270	5,670	5,740	220	236	239
26	27	W 1st. from E St. to F St.	0.09	30	10.0%	6,550	6,790	6,790	273	283	283
27	28	E St. from Cypher St. to W 1st St.	0.05	30	10.0%	4,340	4,340	4,460	181	181	186
28	29	Cypher St. from E St. to SITE DRI	0.09	30	10.0%	480	480	1,690	20	20	70
29	30	E St. from Fargo St. to Cypher St.	0.38	30	10.0%	2,590	2,590	2,640	108	108	110
30	31	Fargo St. from E St. to Summer S	0.09	30	10.0%	1,410	1,410	1,410	59	59	59
31	32	E St. N of Fargo St.	0.10	30	10.0%	360	360	2,640	15	15	110
32	33	Summer St. from Pumphouse Rd	0.05	30	10.0%	16,300	20,120	21,320	679	838	888
33	34	Pumphouse Rd. from Haul Rd. to	0.06	30	10.0%	6,910	6,910	7,500	288	288	313
34	35	Haul Rd. W of Pumphouse Rd.	0.10	15	10.0%	10,130	10,450	10,750	422	435	448
35	36	Haul Rd. E of Pumphouse Rd.	0.10	15	10.0%	4,590	4,740	4,740	191	198	198
36	37	Summer Rd. From Fargo St. to D	0.04	30	10.0%	16,430	20,120	21,180	685	838	883
37	38	Drydock Ave. N of Summer St.	0.10	30	10.0%	7,510	7,210	7,210	313	300	300
38	39	Drydock Ave from Summer St. to	0.29	30	10.0%	4,020	4,650	5,180	168	194	216
39	40	UPS Driveway	0.10	15	10.0%	360	360	2,150	15	15	90
40	41	Drydock Ave. from UPS Driveway	0.19	30	10.0%	3,960	3,960	4,440	165	165	185
41	42	Drydock Ave. from Cypher St. to	0.06	30	10.0%	4,000	4,000	4,220	167	167	176
42	43	W 1st St. from Pappas Way to Dr	0.09	30	10.0%	10,560	9,000	9,340	440	375	389
43	44	W 1st. St. from F St. to Pappas W	0.09	30	10.0%	6,360	6,680	6,680	265	278	278
44	45	F St. S of W 1st St.	0.10	30	10.0%	1,130	1,130	1,130	47	47	47
45	46	Pappas Way from W 1st St. to Dr	0.08	30	10.0%	1,300	1,400	1,450	54	58	60
46	47	Dorchester St. S of Pappas Way	0.10	30	10.0%	4,000	4,510	4,840	167	188	202
47	48	Dorchester St. btwn W 1st St. to	0.12	30	10.0%	3,690	4,200	4,530	154	175	189
48	49	E 2nd St. E of Dorchester St.	0.10	30	10.0%	980	980	980	41	41	41
49	50	W 1st Street from Dorchester St.	0.19	30	10.0%	5,870	5,870	5,890	245	245	245
50	51	Summer St. S of E 1st. St.	0.10	30	10.0%	10,770	12,160	12,160	449	507	507
51	52	E 1st St. E of Summer St.	0.10	30	10.0%	6,580	7,220	7,220	274	301	301
52	53	Summer St. from Drydock Ave to	0.48	30	10.0%	15,400	18,690	18,690	642	779	779
53	54	SITE DRIVE (Build)	0.06	15	10.0%	0	0	70	0	0	3
54	55	Cypher St from SITE DRIVE to Par	0.09	30	10.0%	480	480	650	20	20	27

Reserved Channel Development - Boston, MA

Daily VMT

	SUM		
	40,370	48,542	50,087

Link Number	Roadway Segment	Link Distance (miles)	Average Daily Traffic (ADT) Volumes			Daily VMT		
			2025 EX AM	2033 NB AM	2033 B AM	2025 EX AM	2033 NB AM	2033 B AM
1	Congress St. W of B Street	0.10	8,590	12,780	12,780	895	1,331	1,331
2	B St. S of Congress	0.10	13,200	16,920	17,100	1,375	1,763	1,781
3	B St. N of Congress	0.10	6,290	9,230	8,030	655	961	836
4	Congress St. B St. to D St.	0.18	10,550	13,960	14,140	1,948	2,578	2,611
5	D St. N of Congress	0.10	6,860	9,660	9,660	715	1,006	1,006
6	Congress St. E of D St.	0.10	2,850	3,730	3,730	297	389	389
7	D St. from Congress St. to I-90 Ramp	0.09	12,440	16,980	17,160	1,152	1,573	1,589
8	I-90 Ramp	0.10	4,880	6,100	6,290	508	635	655
9	Congress St. I-90 Ramp to Summer St.	0.06	10,180	13,590	14,140	627	837	870
10	Summer St. W of D St.	0.10	9,420	11,220	11,840	981	1,169	1,233
11	Congress St. from Summer St. to Fargo St.	0.06	5,480	8,150	8,210	356	529	533
12	Summer St. from D St. to Pumphouse Rd.	0.12	10,560	14,040	14,690	1,222	1,625	1,700
13	Fargo St. from D St. to E St.	0.10	2,490	2,610	2,650	248	260	263
14	Fargo St. W of D St.	0.10	460	490	460	48	51	48
15	Congress St. from Fargo St. to Cypher St.	0.38	3,710	6,210	6,230	1,423	2,382	2,389
16	Cypher St. from D St. to E St.	0.10	2,180	2,180	2,510	227	227	261
17	Cypher St. from S. Boston Bypass to D St.	0.24	6,120	6,820	7,600	1,488	1,659	1,848
18	S Boston Bypass N of Cypher Street	0.10	12,810	14,310	14,330	1,334	1,491	1,493
19	Richards St. (W of S. Boston Bypass)	0.10	5,530	7,350	7,350	576	766	766
20	S. Boston Bypass S of Cypher St.	0.10	8,320	9,180	9,440	867	956	983
21	Congress St. from Cypher St. to W 1st St.	0.06	4,740	7,450	7,450	269	423	423
22	W 1st St. W of Congress St.	0.10	2,820	3,480	3,530	294	363	368
23	D St. S of W 1st Street	0.10	1,580	2,960	3,020	165	308	315
24	W 1st St. from D St. to E St.	0.10	5,360	6,610	6,610	556	686	686
25	E St. S of W 1st St.	0.10	5,270	5,670	5,740	549	591	598
26	W 1st. from E St. to F St.	0.09	6,550	6,790	6,790	620	643	643
27	E St. from Cypher St. to W 1st St.	0.05	4,340	4,340	4,460	223	223	229
28	Cypher St. from E St. to SITE DRIVE	0.09	480	480	1,690	45	45	160
29	E St. from Fargo St. to Cypher St.	0.38	2,590	2,590	2,640	996	996	1,015
30	Fargo St. from E St. to Summer St.	0.09	1,410	1,410	1,410	128	128	128
31	E St. N of Fargo St.	0.10	360	360	2,640	38	38	275
32	Summer St. from Pumphouse Rd. to Fargo St.	0.05	16,300	20,120	21,320	849	1,048	1,110
33	Pumphouse Rd. from Haul Rd. to Summer St.	0.06	6,910	6,910	7,500	399	399	433
34	Haul Rd. W of Pumphouse Rd.	0.10	10,130	10,450	10,750	1,055	1,089	1,120
35	Haul Rd. E of Pumphouse Rd.	0.10	4,590	4,740	4,740	478	494	494
36	Summer Rd. From Fargo St. to Drydock Ave.	0.04	16,430	20,120	21,180	700	857	903
37	Drydock Ave. N of Summer St.	0.10	7,510	7,210	7,210	782	751	751
38	Drydock Ave from Summer St. to UPS Driveway	0.29	4,020	4,650	5,180	1,147	1,327	1,478
39	UPS Driveway	0.10	360	360	2,150	38	38	224
40	Drydock Ave. from UPS Driveway to Cypher St.	0.19	3,960	3,960	4,440	747	747	838
41	Drydock Ave. from Cypher St. to W 1st. Street	0.06	4,000	4,000	4,220	236	236	249
42	W 1st St. from Pappas Way to Dorchester St.	0.09	10,560	9,000	9,340	932	794	824
43	W 1st. St. from F St. to Pappas Way	0.09	6,360	6,680	6,680	602	633	633
44	F St. S of W 1st St.	0.10	1,130	1,130	1,130	118	118	118
45	Pappas Way from W 1st St. to Dorchester St.	0.08	1,300	1,400	1,450	106	114	118
46	Dorchester St. S of Pappas Way	0.10	4,000	4,510	4,840	417	470	504
47	Dorchester St. btwn W 1st St. to E 2nd St.	0.12	3,690	4,200	4,530	435	495	534
48	E 2nd St. E of Dorchester St.	0.10	980	980	980	102	102	102
49	W 1st Street from Dorchester St. to Summer St.	0.19	5,870	5,870	5,890	1,112	1,112	1,116
50	Summer St. S of E 1st. St.	0.10	10,770	12,160	12,160	1,122	1,267	1,267
51	E 1st St. E of Summer St.	0.10	6,580	7,220	7,220	685	752	752
52	Summer St. from Drydock Ave to E 1st St.	0.48	15,400	18,690	18,690	7,438	9,026	9,026
53	SITE DRIVE (Build)	0.06	0	0	70	0	0	4
54	Cypher St from SITE DRIVE to Pappas Way	0.09	480	480	650	45	45	62

Reserved Channel Development -
Boston, MA

	2025 Existing			2025 Existing		
	Weekday AM Peak			Weekday PM Peak		
Intersections (Signalized and *Unsignalized*)	**LOS**	**Delay (Sec)**	**Traffic Volume**	**LOS**	**Delay (Sec)**	**Traffic Volume**
1 Congress St & B Street/Ramp	C	25.3	1749	C	24.0	1968
2 Congress Street & D Street	C	29.6	1121	E	79.5	1562
3 I-90 Ramp and D Street	C	27.0	1048	B	18.1	1382
4 Haul Road & Pump House Road	A	0.0	1050	A	0.0	1042
5 Summer Street & D Street	C	30.1	1586	D	40.0	1782
6 Summer Street & Pumphouse Road	D	47.8	1663	D	43.0	1669
7 Summer Street and Fargo Street	A	1.7	1697	A	1.1	1668
8 Summer Street & Pappas Way/Drydock Ave	F	236.1	1924	F	190.8	2258
9 Fargo Street & D Street	A	6.8	549	A	6.8	577
10 Fargo Street & E Street	A	8.6	303	A	8.7	296
11 Summer Street/L Street & E 1st Street	F	178.7	1640	F	172.7	1707
12 Cypher Street/Richards Street & S Boston Bypass	B	19.7	1336	C	26.3	1632
13 Cypher Street & D Street	F	190.3	716	C	30.1	781
14 Cypher Street/Road 1 & E Street	A	5.2	332	A	5.5	473
15 Road 1 & F Street						
16 Road 1 & Pappas Way	A	0.0	289	A	0.0	400
17 Road C & Pappas Way	-	0.0	284	-	0.0	410
18 W 1st Street & D Street	C	35.0	706	F	270.2	690
19 W 1st Street & E Street	B	14.0	854	C	16.7	997
20 W 1st Street & F Street	A	2.0	696	A	1.6	588
21 W 1st Street/E 1st Street & Pappas Way	B	13.1	870	B	14.6	1184
22 E 1st Street & Dorchester St.	A	2.2	754	A	1.2	804
23 W 1st Street/E Second Street & Dorchester Street	A	4.5	401	A	2.2	461

LOS is HCM value for signalized intersections and ICU value for unsignalized intersections.
Color Code:
Red = Signalized intersections at LOS D or worse.

Green = Top 3 signalized intersections based on volume.
Purple/Orange = mitigated delay times decreased/increased

Reserved Channel Development -
Boston, MA

	2033 No-Build			2033 No-Build		
	Weekday AM Peak			Weekday PM Peak		
Intersections (Signalized and *Unsignalized*)	**LOS**	**Delay (Sec)**	**Traffic Volume**	**LOS**	**Delay (Sec)**	**Traffic Volume**
1 Congress St & B Street/Ramp	C	33.0	2445	C	30.5	2788
2 Congress Street & D Street	C	34.3	1629	F	209.7	2111
3 I-90 Ramp and D Street	C	26.8	1424	C	28.6	1834
4 Haul Road & Pump House Road	A	0.0	1082	A	0.0	1057
5 Summer Street & D Street	D	36.8	2185	E	60.4	2303
6 Summer Street & Pumphouse Road	D	51.3	2045	E	62.1	1994
7 Summer Street and Fargo Street	A	2.3	2076	A	2.2	1990
8 Summer Street & Pappas Way/Drydock Ave	F	340.0	2379	F	272.1	2486
9 Fargo Street & D Street	A	5.9	735	A	7.1	856
10 Fargo Street & E Street	A	8.6	303	A	8.7	296
11 Summer Street/L Street & E 1st Street	F	242.2	1822	F	240.2	1984
12 Cypher Street/Richards Street & S Boston Bypass	C	24.5	1671	D	50.4	1874
13 Cypher Street & D Street	F	318.4	871	E	64.6	1071
14 Cypher Street/Road 1 & E Street	A	5.2	332	A	5.5	473
15 Road 1 & F Street						
16 Road 1 & Pappas Way	A	0.0	289	A	0.0	400
17 Road C & Pappas Way	-	0.0	284	-	0.0	410
18 W 1st Street & D Street	D	50.6	892	F	532.8	992
19 W 1st Street & E Street	C	14.4	878	C	23.1	1127
20 W 1st Street & F Street	A	2.0	696	A	1.5	663
21 W 1st Street/E 1st Street & Pappas Way	B	14.0	912	C	19.2	1028
22 E 1st Street & Dorchester St.	A	2.2	754	A	1.1	924
23 W 1st Street/E Second Street & Dorchester Street	A	4.5	401	A	2.1	512

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Purple/Orange = mitigated delay times decreased/increased

Reserved Channel Development -
Boston, MA

	2033 Build			2033 Build		
	Weekday AM Peak			Weekday PM Peak		
Intersections (Signalized and *Unsignalized*)	**LOS**	**Delay (Sec)**	**Traffic Volume**	**LOS**	**Delay (Sec)**	**Traffic Volume**
1 Congress St & B Street/Ramp	C	33.0	2471	C	30.6	2626
2 Congress Street & D Street	C	34.7	1654	F	227.0	2129
3 I-90 Ramp and D Street	C	28.5	1467	C	33.3	1861
4 Haul Road & Pump House Road	A	0.0	1112	A	0.0	1069
5 Summer Street & D Street	D	37.6	2284	E	59.8	2420
6 Summer Street & Pumphouse Road	D	37.6	2165	E	62.5	2062
7 Summer Street and Fargo Street	A	2.8	2182	A	2.4	2055
8 Summer Street & Pappas Way/Drydock Ave	F	403.1	2482	F	305.3	2539
9 Fargo Street & D Street	A	5.9	752	A	7.1	862
10 Fargo Street & E Street	A	8.7	314	A	8.7	521
11 Summer Street/L Street & E 1st Street	F	242.2	1822	F	240.2	1984
12 Cypher Street/Richards Street & S Boston Bypass	C	29.8	1750	D	54.5	1902
13 Cypher Street & D Street	F	259.7	961	E	64.3	1104
14 Cypher Street/Road 1 & E Street	A	8.0	454	A	6.2	521
15 Road 1 & F Street	A	0.8	68	A	2.5	18
16 Road 1 & Pappas Way	A	1.8	394	A	0.4	449
17 Road C & Pappas Way	A	3.5	477	A	2.5	500
18 W 1st Street & D Street	D	50.7	898	F	532.9	997
19 W 1st Street & E Street	B	14.7	892	C	24.5	1139
20 W 1st Street & F Street	A	2.3	704	A	1.6	665
21 W 1st Street/E 1st Street & Pappas Way	B	15.0	951	C	21.2	1062
22 E 1st Street & Dorchester St.	A	2.1	788	A	1.1	958
23 W 1st Street/E Second Street & Dorchester Street	A	4.4	438	A	2.0	545

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Purple/Orange = mitigated delay times decreased/increased

Reserved Channel Development - Boston, MA

2025 Existing

K Factor	10%	factors peak hour vehicle volumes to daily volumes
Peak hr delay to daily Factor (8hr/day)	33%	Factors peak hour delay to daily delay
Daily delay to annual Factor (7 days/wk, 52 wk/yr)	100%	factors peak daily delay to annual delay

Intersection	Average Peak Delay time (s)	Traffic Volume (adt)	Idle MOVES VOC (g/hr)	VOC (lb/day)	VOC (tpy)	Idle MOVES NOX (g/hr)	NOX (lb/day)	NOX (tpy)	Idle MOVES CO2 (g/hr)	CO2 (lb/day)	CO2 (tpy)	Idle MOVES PM10 (g/hr)	PM10 (lb/day)	PM10 (tpy)	Idle MOVES PM2.5 (g/hr)	PM2.5 (lb/day)	PM2.5 (tpy)
1 Congress St & B Street/Ramp	24.61	19680	1.01957	0.10	0.02	0.892613	0.09	0.016	2952.83	291.96	53.136	0.046	0.00	0.001	0.042	0.00	0.001
2 Congress Street & D Street	58.65	15620	1.01957	0.19	0.03	0.892613	0.17	0.030	2952.83	552.21	100.503	0.0459566	0.01	0.002	0.0417797	0.01	0.001
3 I-90 Ramp and D Street	21.94	13820	1.01957	0.06	0.01	0.892613	0.06	0.010	2952.83	182.75	33.261	0.0459566	0.00	0.001	0.0417797	0.00	0.000
4 Haul Road & Pump House Road	0.00	10500	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	0.00	0.000	0.0459566	0.00	0.000	0.0417797	0.00	0.000
5 Summer Street & D Street	35.34	17820	1.01957	0.13	0.02	0.892613	0.11	0.021	2952.83	379.58	69.083	0.0459566	0.01	0.001	0.0417797	0.01	0.001
6 Summer Street & Pumphouse Road	45.40	16690	1.01957	0.16	0.03	0.892613	0.14	0.025	2952.83	456.69	83.118	0.0459566	0.01	0.001	0.0417797	0.01	0.001
7 Summer Street and Fargo Street	1.40	16970	1.01957	0.00	0.00	0.892613	0.00	0.001	2952.83	14.35	2.611	0.0459566	0.00	0.000	0.0417797	0.00	0.000
8 Summer Street & Pappas Way/Drydock Ave	211.64	22580	1.01957	0.99	0.18	0.892613	0.87	0.158	2952.83	2880.55	524.260	0.0459566	0.04	0.008	0.0417797	0.04	0.007
9 Fargo Street & D Street	6.80	5770	1.01957	0.01	0.00	0.892613	0.01	0.001	2952.83	23.65	4.304	0.0459566	0.00	0.000	0.0417797	0.00	0.000
10 Fargo Street & E Street	8.65	3030	1.01957	0.01	0.00	0.892613	0.00	0.001	2952.83	15.80	2.875	0.0459566	0.00	0.000	0.0417797	0.00	0.000
11 Summer Street/L Street & E 1st Street	175.64	17070	1.01957	0.62	0.11	0.892613	0.55	0.099	2952.83	1807.21	328.912	0.0459566	0.03	0.005	0.0417797	0.03	0.005
12 Cypher Street/Richards Street & S Boston Bypass	23.33	16320	1.01957	0.08	0.01	0.892613	0.07	0.013	2952.83	229.49	41.768	0.0459566	0.00	0.001	0.0417797	0.00	0.001
13 Cypher Street & D Street	106.72	7810	1.01957	0.17	0.03	0.892613	0.15	0.028	2952.83	502.41	91.438	0.0459566	0.01	0.001	0.0417797	0.01	0.001
14 Cypher Street/Road 1 & E Street	5.38	4730	1.01957	0.01	0.00	0.892613	0.00	0.001	2952.83	15.33	2.790	0.0459566	0.00	0.000	0.0417797	0.00	0.000
15 Road 1 & F Street	0.00	0	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	0.00	0.000	0.0459566	0.00	0.000	0.0417797	0.00	0.000
16 Road 1 & Pappas Way	0.00	4000	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	0.00	0.000	0.0459566	0.00	0.000	0.0417797	0.00	0.000
17 Road C & Pappas Way	0.00	4100	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	0.00	0.000	0.0459566	0.00	0.000	0.0417797	0.00	0.000
18 W 1st Street & D Street	151.25	7060	1.01957	0.22	0.04	0.892613	0.19	0.035	2952.83	643.66	117.146	0.0459566	0.01	0.002	0.0417797	0.01	0.002
19 W 1st Street & E Street	15.45	9970	1.01957	0.03	0.01	0.892613	0.03	0.005	2952.83	92.87	16.903	0.0459566	0.00	0.000	0.0417797	0.00	0.000
20 W 1st Street & F Street	1.82	6960	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	7.62	1.387	0.0459566	0.00	0.000	0.0417797	0.00	0.000
21 W 1st Street/E 1st Street & Pappas Way	13.96	11840	1.01957	0.03	0.01	0.892613	0.03	0.005	2952.83	99.66	18.139	0.0459566	0.00	0.000	0.0417797	0.00	0.000
22 E 1st Street & Dorchester St.	1.68	8040	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	8.16	1.485	0.0459566	0.00	0.000	0.0417797	0.00	0.000
23 W 1st Street/E Second Street & Dorchester Street	3.27	4610	1.01957	0.00	0.00	0.892613	0.00	0.000	2952.83	9.09	1.654	0.0459566	0.00	0.000	0.0417797	0.00	0.000
0																	
Totals	hrs	1261.62099		2.84	0.52		2.48	0.45		8213.04	1494.77		0.13	0.02		0.12	0.02

Reserved Channel Development - Boston, MA

2033 No-Build

K Factor	10%	factors peak hour vehicle volumes to daily volumes
Peak hr delay to daily Factor (8hr/day)	33%	Factors peak hour delay to daily delay
Daily delay to annual Factor (7 days/wk, 52 wk/yr)	100%	factors peak daily delay to annual delay

Intersection	Average Peak Delay time (s)	Traffic Volume (adt)	Idle MOVES VOC (g/hr)	VOC (lb/day)	VOC (tpy)	Idle MOVES NOX (g/hr)	NOX (lb/day)	NOX (tpy)	Idle MOVES CO2 (g/hr)	CO2 (lb/day)	CO2 (tpy)	Idle MOVES PM10 (g/hr)	PM10 (lb/day)	PM10 (tpy)	Idle MOVES PM2.5 (g/hr)	PM2.5 (lb/day)	PM2.5 (tpy)
1 Congress St & B Street/Ramp	31.67	27880	0.7836	0.14	0.03	1.0007	0.18	0.033	2670.36	481.28	87.593	0.015	0.00	0.000	0.013	0.00	0.000
2 Congress Street & D Street	133.30	21110	0.784	0.45	0.08	1.001	0.57	0.105	2670.360	1533.94	279.178	0.015	0.01	0.002	0.013	0.01	0.001
3 I-90 Ramp and D Street	27.81	18340	0.784	0.08	0.01	1.001	0.10	0.019	2670.360	278.06	50.606	0.015	0.00	0.000	0.013	0.00	0.000
4 Haul Road & Pump House Road	0.00	10820	0.784	0.00	0.00	1.001	0.00	0.000	2670.360	0.00	0.000	0.015	0.00	0.000	0.013	0.00	0.000
5 Summer Street & D Street	48.91	23030	0.784	0.18	0.03	1.001	0.23	0.042	2670.360	614.01	111.750	0.015	0.00	0.001	0.013	0.00	0.001
6 Summer Street & Pumphouse Road	56.63	20450	0.784	0.19	0.03	1.001	0.24	0.043	2670.360	631.30	114.897	0.015	0.00	0.001	0.013	0.00	0.001
7 Summer Street and Fargo Street	2.25	20760	0.784	0.01	0.00	1.001	0.01	0.002	2670.360	25.47	4.636	0.015	0.00	0.000	0.013	0.00	0.000
8 Summer Street & Pappas Way/Drydock Ave	305.30	24860	0.784	1.21	0.22	1.001	1.55	0.282	2670.360	4137.28	752.985	0.015	0.02	0.004	0.013	0.02	0.004
9 Fargo Street & D Street	6.55	8560	0.784	0.01	0.00	1.001	0.01	0.002	2670.360	30.54	5.559	0.015	0.00	0.000	0.013	0.00	0.000
10 Fargo Street & E Street	8.65	3030	0.784	0.00	0.00	1.001	0.01	0.001	2670.360	14.29	2.600	0.015	0.00	0.000	0.013	0.00	0.000
11 Summer Street/L Street & E 1st Street	241.16	19840	0.784	0.77	0.14	1.001	0.98	0.178	2670.360	2608.10	474.675	0.015	0.01	0.003	0.013	0.01	0.002
12 Cypher Street/Richards Street & S Boston Bypass	38.19	18740	0.784	0.11	0.02	1.001	0.15	0.027	2670.360	390.14	71.005	0.015	0.00	0.000	0.013	0.00	0.000
13 Cypher Street & D Street	178.43	10710	0.784	0.31	0.06	1.001	0.39	0.071	2670.360	1041.70	189.589	0.015	0.01	0.001	0.013	0.01	0.001
14 Cypher Street/Road 1 & E Street	5.38	4730	0.784	0.00	0.00	1.001	0.01	0.001	2670.360	13.86	2.523	0.015	0.00	0.000	0.013	0.00	0.000
15 Road 1 & F Street	0.00	0	0.784	0.00	0.00	1.001	0.00	0.000	2670.360	0.00	0.000	0.015	0.00	0.000	0.013	0.00	0.000
16 Road 1 & Pappas Way	0.00	4000	0.784	0.00	0.00	1.001	0.00	0.000	2670.360	0.00	0.000	0.015	0.00	0.000	0.013	0.00	0.000
17 Road C & Pappas Way	0.00	4100	0.784	0.00	0.00	1.001	0.00	0.000	2670.360	0.00	0.000	0.015	0.00	0.000	0.013	0.00	0.000
18 W 1st Street & D Street	304.50	9920	0.784	0.48	0.09	1.001	0.62	0.112	2670.360	1646.56	299.674	0.015	0.01	0.002	0.013	0.01	0.002
19 W 1st Street & E Street	19.29	11270	0.784	0.03	0.01	1.001	0.04	0.008	2670.360	118.51	21.568	0.015	0.00	0.000	0.013	0.00	0.000
20 W 1st Street & F Street	1.76	6960	0.784	0.00	0.00	1.001	0.00	0.000	2670.360	6.66	1.213	0.015	0.00	0.000	0.013	0.00	0.000
21 W 1st Street/E 1st Street & Pappas Way	16.76	10280	0.784	0.03	0.01	1.001	0.04	0.006	2670.360	93.89	17.088	0.015	0.00	0.000	0.013	0.00	0.000
22 E 1st Street & Dorchester St.	1.59	9240	0.784	0.00	0.00	1.001	0.00	0.001	2670.360	8.03	1.461	0.015	0.00	0.000	0.013	0.00	0.000
23 W 1st Street/E Second Street & Dorchester Street	3.15	5120	0.784	0.00	0.00	1.001	0.00	0.001	2670.360	8.80	1.602	0.015	0.00	0.000	0.013	0.00	0.000
Totals hrs		2324.11228		4.01	0.73		5.13	0.93		13682.44	2490.20		0.08	0.01		0.07	0.01

Reserved Channel Development - Boston, MA

2033 Build

K Factor	10%	factors peak hour vehicle volumes to daily volumes
Peak hr delay to daily Factor (8hr/day)	33%	Factors peak hour delay to daily delay
Daily delay to annual Factor (7 days/wk, 52 wk/yr)	100%	factors peak daily delay to annual delay

Intersection	Average Peak Delay time (s)	Traffic Volume (adt)	Idle MOVES VOC (g/hr)	VOC (lb/day)	VOC (tpy)	Idle MOVES NOX (g/hr)	NOX (lb/day)	NOX (tpy)	Idle MOVES CO2 (g/hr)	CO2 (lb/day)	CO2 (tpy)	Idle MOVES PM10 (g/hr)	PM10 (lb/day)	PM10 (tpy)	Idle MOVES PM2.5 (g/hr)	PM2.5 (lb/day)	PM2.5 (tpy)
1 Congress St & B Street/Ramp	31.76	26260	0.7836	0.13	0.02	0.8068	0.14	0.025	2369.38	403.43	73.425	0.015	0.00	0.000	0.013	0.00	0.000
2 Congress Street & D Street	142.92	21290	0.784	0.49	0.09	0.807	0.50	0.091	2369.380	1471.72	267.853	0.015	0.01	0.002	0.013	0.01	0.002
3 I-90 Ramp and D Street	31.18	18610	0.784	0.09	0.02	0.807	0.10	0.017	2369.380	280.69	51.086	0.015	0.00	0.000	0.013	0.00	0.000
4 Haul Road & Pump House Road	0.00	11120	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	0.00	0.000	0.015	0.00	0.000	0.013	0.00	0.000
5 Summer Street & D Street	49.02	24200	0.784	0.19	0.03	0.807	0.20	0.036	2369.380	573.78	104.428	0.015	0.00	0.001	0.013	0.00	0.001
6 Summer Street & Pumphouse Road	49.75	21650	0.784	0.17	0.03	0.807	0.18	0.032	2369.380	520.92	94.807	0.015	0.00	0.001	0.013	0.00	0.001
7 Summer Street and Fargo Street	2.61	21820	0.784	0.01	0.00	0.807	0.01	0.002	2369.380	27.50	5.005	0.015	0.00	0.000	0.013	0.00	0.000
8 Summer Street & Pappas Way/Drydock Ave	353.64	25390	0.784	1.44	0.26	0.807	1.48	0.269	2369.380	4342.88	790.404	0.015	0.03	0.005	0.013	0.02	0.004
9 Fargo Street & D Street	6.54	8620	0.784	0.01	0.00	0.807	0.01	0.002	2369.380	27.27	4.963	0.015	0.00	0.000	0.013	0.00	0.000
10 Fargo Street & E Street	8.70	5210	0.784	0.01	0.00	0.807	0.01	0.001	2369.380	21.92	3.990	0.015	0.00	0.000	0.013	0.00	0.000
11 Summer Street/L Street & E 1st Street	241.16	19840	0.784	0.77	0.14	0.807	0.79	0.143	2369.380	2314.14	421.174	0.015	0.01	0.003	0.013	0.01	0.002
12 Cypher Street/Richards Street & S Boston Bypass	42.66	19020	0.784	0.13	0.02	0.807	0.13	0.024	2369.380	392.48	71.432	0.015	0.00	0.000	0.013	0.00	0.000
13 Cypher Street & D Street	155.23	11040	0.784	0.27	0.05	0.807	0.28	0.051	2369.380	828.90	150.861	0.015	0.01	0.001	0.013	0.00	0.001
14 Cypher Street/Road 1 & E Street	7.04	5210	0.784	0.01	0.00	0.807	0.01	0.001	2369.380	17.74	3.228	0.015	0.00	0.000	0.013	0.00	0.000
15 Road 1 & F Street	1.16	680	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	0.38	0.069	0.015	0.00	0.000	0.013	0.00	0.000
16 Road 1 & Pappas Way	1.05	4490	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	2.29	0.417	0.015	0.00	0.000	0.013	0.00	0.000
17 Road C & Pappas Way	2.99	5000	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	7.23	1.315	0.015	0.00	0.000	0.013	0.00	0.000
18 W 1st Street & D Street	304.40	9970	0.784	0.49	0.09	0.807	0.50	0.091	2369.380	1467.85	267.148	0.015	0.01	0.002	0.013	0.01	0.002
19 W 1st Street & E Street	20.20	11390	0.784	0.04	0.01	0.807	0.04	0.007	2369.380	111.26	20.249	0.015	0.00	0.000	0.013	0.00	0.000
20 W 1st Street & F Street	1.96	7040	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	6.67	1.215	0.015	0.00	0.000	0.013	0.00	0.000
21 W 1st Street/E 1st Street & Pappas Way	18.27	10620	0.784	0.03	0.01	0.807	0.03	0.006	2369.380	93.85	17.081	0.015	0.00	0.000	0.013	0.00	0.000
22 E 1st Street & Dorchester St.	1.55	9580	0.784	0.00	0.00	0.807	0.00	0.000	2369.380	7.19	1.308	0.015	0.00	0.000	0.013	0.00	0.000
23 W 1st Street/E Second Street & Dorchester Street	3.07	5450	0.784	0.00	0.00	0.807	0.00	0.001	2369.380	8.09	1.473	0.015	0.00	0.000	0.013	0.00	0.000
Totals	hrs	2474.948208		4.28	0.78		4.40	0.80		12928.18	2352.93		0.08	0.01		0.07	0.01

Appendix D

Tidelands



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

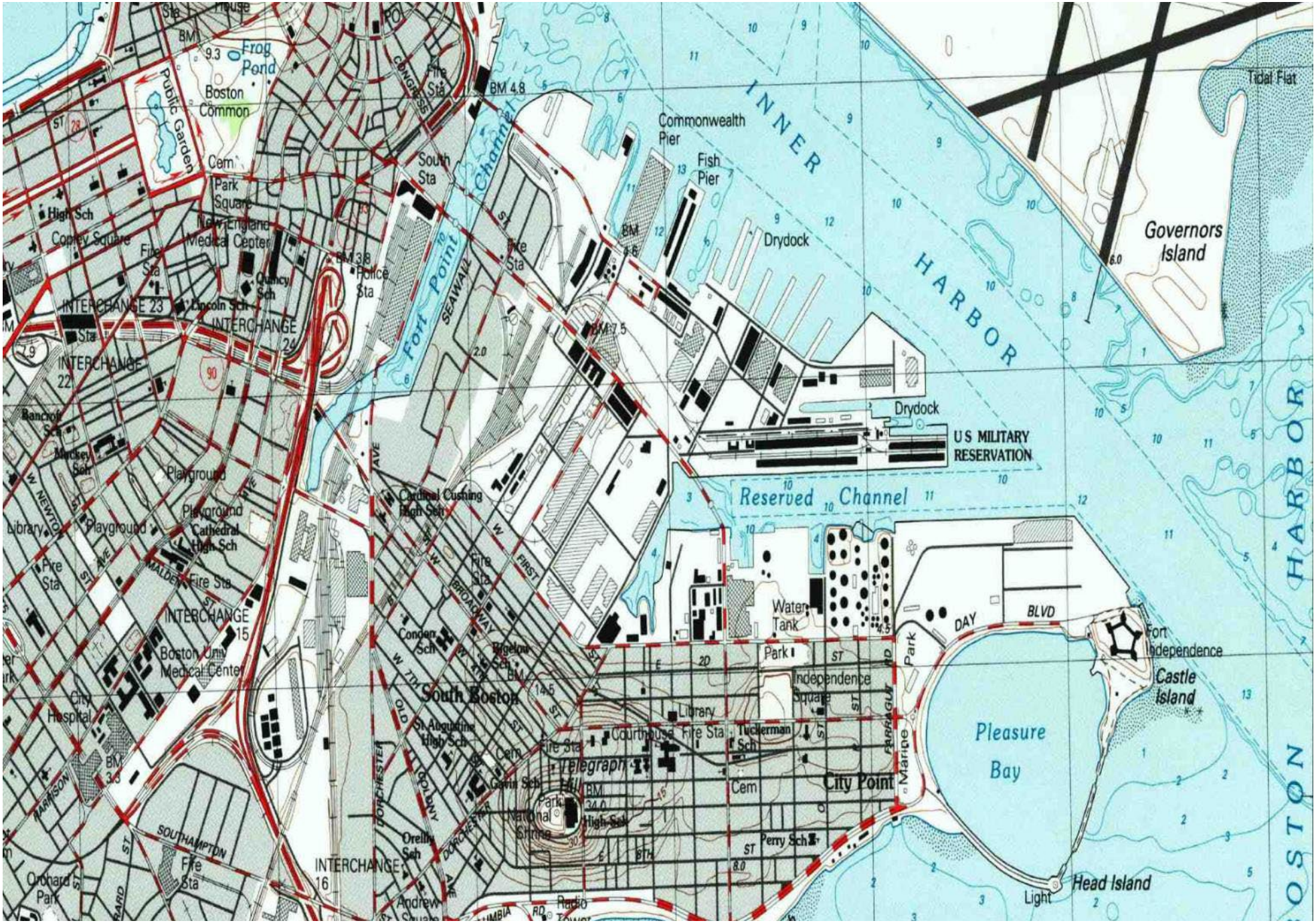
Pappas Way, Circa 1955



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

Pappas Way, Circa 1987



Reserved Channel Development Boston, Massachusetts

Epsilon ASSOCIATES INC.

USGS Quad 350871, 1987

Appendix E

Transportation

E TRANSPORTATION

Existing Study Area Intersection Conditions

West First Street at F Street is an unsignalized, three-legged intersection with three approaches. The F Street northeast-bound approach is stop-controlled and consists of a shared left-turn/right-turn lane. The West First Street northwest-bound approach consists of an exclusive through lane. The West First Street southeast-bound approach consists of an exclusive through lane. On-street parking is permitted along both sides of the F Street northeast-bound approach and the West First Street northwest-bound approach. Sidewalks are provided along both sides of each leg of the intersection. Crosswalks with curb ramps are provided along the F Street northeast-bound leg of the intersection. Pedestrian signal equipment is not provided along any leg of the intersection.

West First Street at E Street is an unsignalized, four-legged intersection with three approaches. The West First Street northwest-bound approach consists of a shared left-turn/through/right-turn lane. The E Street southwest-bound approach consists of a shared left-turn/through/right-turn lane. The West First Street southeast-bound approach consists of a shared left-turn/through/right-turn lane. On-street parking is permitted along both sides of the West First Street northwest-bound approach and the west side of the E Street southwest-bound approach. Sidewalks are provided along both sides of each leg of the intersection. Crosswalks with curb ramps are provided along all legs of the intersection. Pedestrian signal equipment is not provided along any leg of the intersection.

New Cypher Street at E Street is an unsignalized, three-legged intersection with three approaches. The E Street northeast-bound approach consists of a shared left-turn/through lane. The E Street southwest-bound approach consists of a shared through/right-turn lane. The New Cypher Street southeast-bound approach consists of a shared left-turn/right-turn lane. On-street parking is provided on the west side of the E Street northeast-bound approach and the E Street southwest-bound approach. Sidewalks are provided along both sides of each leg of the intersection. Crosswalks with curb ramps are provided along the E Street northeast-bound leg and the New Cypher Street southeast-bound leg of the intersection. Pedestrian signal equipment is not provided along any leg of the intersection.

Pappas Way at Site Entrance C/UPS Driveway is an unsignalized, three-legged intersection with three approaches. The Pappas Way northeast-bound approach consists of a single shared left-turn/through lane. The Pappas Way southwest-

bound approach consists of a single shared right-turn/through lane. The southeast-bound driveway approach consists of a single shared left-right turn lane. A crosswalk with curb ramps allows pedestrians to cross Pappas Way on the southwest leg of the intersection. The crosswalk has no pedestrian signal equipment. A sidewalk runs along the northwest side of Pappas Way on both sides of the UPS Driveway, and a curb ramp is present for pedestrians crossing the UPS driveway from the northeast. On-street parking spaces are striped both in front of the UPS building (head-in) and along the southwest-bound approach (parallel).

Fargo Street at Summer Street is an unsignalized, three-legged intersection with three approaches. The Summer Street northwest-bound approach consists of a shared left-turn/through lane and an exclusive through lane. The Summer Street southeast-bound approach consists of an exclusive through lane and a shared right-turn/through lane. The Fargo Street eastbound approach is stop-controlled and consists of an exclusive left-turn lane and an exclusive right-turn lane. On-street parking is not provided along any leg of the intersection. Sidewalks are provided along both sides of all legs of the intersection. Crosswalks with curb ramps are present along the Fargo Street eastbound leg of the intersection. Pedestrian signal equipment is not provided along any legs of the intersection, and there is a painted crossing only across Fargo Street.

Fargo Street at E Street is an unsignalized, four-legged intersection with four approaches. The E Street northeast-bound approach consists of a shared left-turn/through/right-turn lane. The Fargo Street westbound approach is stop-controlled and consists of a shared left-turn/through/right-turn lane. The E Street southwest-bound approach consists of a shared left-turn/through/right-turn lane. The Fargo Street southeast-bound approach is stop-controlled and consists of left-turn/through/right-turn lane. On-street parking is provided on both sides of the E Street southwest-bound approach, as well as the west side of the E Street northeast-bound approach and the north side of the Fargo Street westbound approach. Sidewalks are provided along both sides of all legs of the intersection. Crosswalks with curb ramps are provided along each leg of the intersection. Pedestrian signal equipment is not provided along any legs of the intersection.

West First Street/East First Street at Pappas Way is an unsignalized, four-legged intersection with four approaches. The West First Street northwest-bound approach is stop-controlled and consists of a shared left-turn/right-turn lane. The East First Street westbound approach is stop-controlled and consists of a shared through/right-turn lane. The Pappas Way southwest-bound approach is stop-

controlled and consists of a shared left-turn/right-turn lane. The West First Street southeast-bound approach is stop-controlled and consists of a shared left-turn/through lane. On-street parking is permitted along the south side of the East First Street westbound approach and the west side of the Pappas Way northeast-bound approach. Sidewalks are provided along both sides of the West First Street northwest-bound approach, the East First Street westbound approach, and the West First Street southeast-bound approach, as well as the east side of the Pappas Way southwest-bound approach. Crosswalks with curb ramps are provided along the West First Street northwest-bound leg, the East First Street westbound leg, and the Pappas Way southwest-bound leg. Pedestrian signal equipment is not provided along any leg of the intersection.

West First Street/East Second Street at Dorchester Street is an unsignalized, four-legged intersection with three approaches. The Dorchester Street northeast-bound approach consists of a shared left-turn/through/right-turn lane. The East Second Street westbound approach is stop-controlled and consists of a shared left-turn/through/right-turn lane. The Dorchester Street southwest-bound approach consists of a shared left-turn/through/right-turn lane. On-street parking is permitted along both sides of all legs of the intersection. Sidewalks are provided along both sides of all legs of the intersection. Crosswalks with curb ramps are provided along the Dorchester Street southwest-bound approach and the West First Street leg of the intersection. Pedestrian signal equipment is not provided along any leg of the intersection.

East First Street at Dorchester Street is an unsignalized, three-legged intersection with three approaches. The Dorchester Street northeast-bound approach is stop-controlled and consists of a shared left-turn/right-turn lane. The East First Street westbound approach is a shared left-turn/through lane. The East First Street eastbound approach is a shared through/right-turn lane. On-street parking is permitted along both sides of the Dorchester Street northeast-bound approach, as well as the south side of the East First Street westbound approach and the East First Street eastbound approach. Sidewalks are provided along both sides of the Dorchester Street northeast-bound approach and the East First Street eastbound approach, as well as the south side of the East First Street westbound approach. Crosswalks with curb ramps are provided along the Dorchester Street northeast-bound leg of the intersection. Pedestrian signal equipment is not provided along any leg of the intersection.

Cypher Street/New Cypher Street at D Street is a signalized, four-legged intersection with four approaches. The D Street northeast-bound approach consists of a shared left-turn/through/right-turn lane. The New Cypher Street northwest-bound approach consists of a shared left-turn/through/right-turn lane. The D Street southwest-bound approach consists of a shared left-turn/through/right-turn lane. The Cypher Street southeast-bound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. On-street parking is not provided along any leg of the intersection. Sidewalks are provided along both sides of each leg of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are provided along each leg of the intersection.

West First Street at D Street is a signalized, four-legged intersection with four approaches. The D Street northeast-bound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The West First Street northwest-bound approach consists of an exclusive through lane and an exclusive right-turn lane. The D Street southwest-bound approach consists of an exclusive left-turn lane and an exclusive right-turn lane. The West First Street southeast-bound approach consists of an exclusive left-turn lane and an exclusive through lane. On-street parking is not provided along any leg of the intersection. Sidewalks are provided along both sides of each leg of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are provided along all legs of the intersection.

Fargo Street at D Street is a signalized, four-legged intersection with four approaches. The D Street northeast-bound approach consists of a shared left-turn/through lane and a shared through/right-turn lane. The Fargo Street northeast-bound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The D Street southwest-bound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The Fargo Street southeast-bound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. On-street parking is provided on both sides of the D Street northeast-bound approach and the D Street southwest-bound approach. Sidewalks are provided on both sides of all legs of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are provided along each leg of the intersection.

Summer Street at D Street is a signalized, four-legged intersection with four approaches. The D Street northeast-bound approach consists of an exclusive left-turn lane, a shared left-turn/through lane, and a shared through/right-turn lane. The Summer Street northwest-bound approach consists of a shared left-turn/through lane, an exclusive through lane, and an exclusive right-turn lane. The D Street

southwest-bound approach consists of an exclusive left-turn lane, a shared left-turn/through lane, and a shared through/right-turn lane. The Summer Street southeast-bound approach consists of an exclusive left-turn lane, an exclusive through lane, and a shared right-turn/through lane. On-street parking is permitted on the west side of the D Street northeast-bound approach and the D Street southwest-bound approach. Sidewalks are provided along both sides of all legs of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are present along each leg of the intersection.

D Street at I-90 On-Ramp is a signalized, three-legged intersection with two approaches. The D Street northeast-bound approach consists of an exclusive left-turn lane and two exclusive through lanes. The D Street southwest-bound approach consists of an exclusive through lane and an exclusive right-turn lane. On-street parking is provided on the east side of the D Street southwest-bound approach. Sidewalks are provided along both sides of the D Street northeast-bound approach and the D Street southwest-bound approach. Crosswalks with curb cuts and pedestrian signal equipment are provided along the I-90 On-Ramp leg of the intersection and the D Street southwest-bound approach.

Congress Street at D Street is a signalized, four-legged intersection with four approaches. The D Street northeast-bound approach consists of two exclusive left-turn lanes and a shared through/right-turn lane. The Congress Street northwest-bound approach consists of a shared left-turn/through lane and a shared through/right-turn lane. The D Street southwest-bound approach consists of a shared left-turn/through lane and a shared through/right-turn lane. The Congress Street southeast-bound approach consists of a shared left-turn/through lane, a shared through/right-turn lane, and an exclusive right-turn lane. On-street parking is provided along the east side of the D Street northeast-bound approach. Sidewalks are provided along both sides of the Congress Street northwest-bound approach, the D Street southwest-bound approach, and the Congress Street southeast-bound approach, as well as the east side of the D Street northeast-bound approach. Crosswalks with curb ramps and pedestrian signal equipment are provided along all legs of the intersection.

Congress Street at B Street/I-93 On-Ramp/I-90 Off-Ramp is a signalized, five-legged intersection with four approaches. The I-90 Off-Ramp northeast-bound approach consists of an exclusive left-turn lane, and exclusive through lane, and an exclusive right-turn lane. The Congress Street northwest-bound approach consists of an exclusive left-turn lane, a shared left-turn/through lane, and a shared

through/right-turn lane. The B Street southwest-bound approach consists of a shared left-turn/through lane, an exclusive through lane, and an exclusive right-turn lane. The Congress Street southeast-bound approach consists of a shared left-turn/through lane, an exclusive through lane, and an exclusive right-turn lane. On-street parking is provided along both sides of the Congress Street northwest-bound approach. Sidewalks are provided along both sides of the Congress Street northwest-bound approach, the B Street southwest-bound approach, and the Congress Street southeast-bound approach. Crosswalks with curb ramps and pedestrian signal equipment are provided along all legs of the intersection.

Cypher Street/Richards Street at South Boston Bypass is a signalized, four-legged intersection with four approaches. The South Boston Bypass northeast-bound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The Cypher Street northwest-bound approach consists of an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane. The South Boston Bypass southwest-bound lane consists of an exclusive left-turn lane and a shared through/right-turn lane. The Richards Street southeast-bound lane consists of an exclusive left-turn lane and a shared through/right-turn lane. On-street parking is not provided along any leg of the intersection. Sidewalks are provided along both sides of the Cypher Street northwest-bound approach and the Richards Street southeast-bound approach. Crosswalks with curb ramps and pedestrian signal equipment are provided along the South Boston Bypass northeast-bound leg and the South Boston Bypass southwest-bound leg of the intersection.

Summer Street at Pumphouse Road is a signalized, three-legged intersection with three approaches. The Summer Street northwest-bound approach consists of an exclusive through lane and a shared through/right-turn lane. The Pumphouse Road southwest-bound approach consists of an exclusive left-turn lane and a shared left-turn/right-turn lane. The Summer Street southeast-bound approach consists of a shared left-turn/through lane and an exclusive through lane. On-street parking is not provided along any leg of the intersection. Sidewalks are provided along both sides of the Summer Street northwest-bound approach and the Summer Street southeast-bound approach, as well as along the east side of the Pumphouse Road southwest-bound approach. Crosswalks with curb ramps and pedestrian signal equipment are present along the Pumphouse Road southwest-bound leg of the intersection.

Haul Road at Pumphouse Road is a signalized, three-legged intersection with three approaches. The Pumphouse Road northeast-bound approach consists of an exclusive left-turn lane and a shared left-turn/right-turn lane. The Haul Road northwest-bound approach consists of an exclusive left-turn lane and an exclusive through lane. The Haul Road southeast-bound approach consists of an exclusive through lane and an exclusive right-turn lane. On-street parking is not permitted along any of the legs of the intersection. Sidewalks are provided along the east side of the Haul Road northwest-bound approach, the Haul Road southeast-bound approach, and the Pumphouse Road northeast-bound approach. Crosswalks with curb ramps and pedestrian signal equipment are provided along the Haul Road northwest-bound approach.

Summer Street at Pappas Way/Drydock Avenue is a signalized, four-legged intersection with four approaches. The Pappas Way northbound approach consists of a shared left-turn/through/right-turn lane. The Summer Street northwest-bound approach consists of an exclusive left-turn lane, an exclusive through lane, and a shared through/right-turn lane. The Drydock Avenue westbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The Summer Street southeast-bound approach consists of an exclusive left-turn lane, an exclusive through lane, and a shared through/right-turn lane. On-street parking is permitted along the east slide of the Pappas Way northbound approach. Sidewalks are provided along all legs of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are present along all legs of the intersection.

Summer Street/L Street at East First Street is a signalized, four-legged intersection with four approaches. The L Street northbound approach consists of a

shared left-turn/through lane and an exclusive right-turn lane. The East First Street westbound approach consists of a shared left-turn/through/right-turn lane. The Summer Street southbound lane consists of a shared left-turn/through lane and a shared through/right-turn lane. The East First Street eastbound approach consists of a shared left-turn/through/right-turn lane. On-street parking is permitted along both sides of the East First Street eastbound approach and the L Street northbound approach. Sidewalks are provided along all legs of the intersection. Crosswalks with curb ramps and pedestrian signal equipment are provided along all legs of the intersection.

Privately-Owned Parking Lots Within One-Half Mile of Phase 1 Site

Several privately-owned parking lots are available within one-half mile of the Phase 1 Site, as documented in Table E-1 and Figure E-1 (including privately-offered public parking at the Lot on D Street). All lots with defined spaces for parking, and which were not identified as being used for vehicle storage, are included.

Table E-1 Existing Off-Street Private/Restricted Parking in the Phase 1 Site Vicinity

ID	Parking Lot/Address	Capacity	Walking Distance to Phase 1 Site
1	645 Summer Street	50-100 spaces	50 feet
2	City of Boston (95 Fargo Street)	100-250 spaces	65 feet
3	Ryder Truck Rental (280 West First Street)	25-50 spaces	80 feet
4	Boston Seaport Self Storage (380 E Street)	<25 spaces	95 feet
5	3 Dorchester Street	25-50 spaces	150 feet
6	314-300 W Second Street	25-50 spaces	300 feet
7	Pasek Security Company (307 West First Street)	25-50 spaces	300 feet
8	371 E Street	<25 spaces	350 feet
9	363 West First Street	<25 spaces	350 feet
10	455 East First Street	<25 spaces	500 feet
11	361 West First Street	<25 spaces	500 feet
12	207 F Street	<25 spaces	500 feet
13	523 E Second Street	<25 spaces	500 feet
14	Massachusetts Port Authority (Pappas Way)	<25 spaces	500 feet
15	353 W Second Street	<25 spaces	500 feet
16	178 Bolton Street	<25 spaces	500 feet
17	289 W Second Street	<25 spaces	500 feet
18	510-516 East Second Street	25-50 spaces	500 feet
19	DHL (420 E Street)	100-250 spaces	500 feet
20	United Rentals (430 East First Street)	100-250 spaces	500 feet
21	525 E Second Street	<25 spaces	1,000 feet
22	United States Postal Service (444 East Third Street)	<25 spaces	1,000 feet

Table E-1 Existing Off-Street Private/Restricted Parking in the Phase 1 Site Vicinity (Continued)

ID	Parking Lot/Address	Capacity	Walking Distance to Phase 1 Site
23	177-179 F Street	<25 spaces	1,000 feet
24	236-240 Bolton Street	<25 spaces	1,000 feet
25	68-76 Dresser Street	<25 spaces	1,000 feet
26	237-239 Bolton	<25 spaces	1,000 feet
27	182 F Street	<25 spaces	1,000 feet
28	269 W Second Street	<25 spaces	1,000 feet
29	514-520 East Broadway	<25 spaces	1,000 feet
30	524-528 East Broadway	<25 spaces	1,000 feet
31	189-191 F Street	25-50 spaces	1,000 feet
32	530-532 East Broadway	25-50 spaces	1,000 feet
33	Fargo Street Lot (93 Fargo Street)	500-1,000 spaces	1,000 feet
34	Element Hotel (391-395 D Street)	<25 spaces	1,500 feet
35	Aloft Hotel (401-403 D Street)	<25 spaces	1,500 feet
36	291 Bolton Street	<25 spaces	1,500 feet
37	Barnes Building (530 E Street)	100-250 spaces	1,500 feet
38	451D (69 Fargo Street)	250-500 spaces	2,000 feet



Off-Street Private Lots

Public Parking - Lot on D Street

RESERVED CHANNEL DEVELOPMENT

SOURCE: STANTEC

FIGURE E-1

OFF-STREET PARKING LOTS

Crash History

A crash analysis was conducted to identify potential vehicle crash trends and/or roadway deficiencies in the study area. The most current vehicle crash dataset for study area intersections for the latest available five years was obtained from MassDOT for the years 2020 to 2024. A summary of the study area intersections vehicle crash history is presented in Table E-2, including the number of crashes per location and associated crash rates. New Cypher Street/E Street is not included as this intersection has only recently been completed.

The calculated crash rates were compared to those of MassDOT District 6 average crash rates, which are 0.71 per million entering vehicles ("MEV") for signalized intersections and 0.52 per MEV for unsignalized intersections. Using the data from the MassDOT database, all study area intersections have a calculated crash rate that falls below the MassDOT District 6 average values for both signalized and unsignalized intersections.

Crash rates are calculated based on the number of crashes at an intersection and the volume of traffic travelling through that intersection daily. Rates that exceed MassDOT's district average for crashes (District 6 for Boston) could indicate safety or geometric issues at an intersection. Crash rates were calculated using TMC data for each study area intersection, collected on Tuesday, December 16th, 2025. Using p.m. peak hour data, average annual daily traffic ("AADT") was calculated for each intersection with the assumption that the p.m. peak hour is approximately 10% of AADT.

The crash analysis based on the MassDOT data shows a relatively low number of crashes in the immediate area surrounding the Phase 1 Site, with no crashes recorded at five study area intersections. The most common type of crash amongst all intersections was a side sweep, same direction crash. The majority of crashes occurred in clear, daylight conditions, within the least severe category (property damage only – no injuries). The intersection of Congress Street/B Street/I-93 On-Ramp/I-93 Off-Ramp showed the largest number of crashes with 13 crashes between 2020 and 2024. There was one crash within the last five years that resulted in a fatal injury, occurring at the intersection of West First Street and E Street in clear daylight and involved a non-motorist. The crash occurred when a car collided with a motorcyclist around 5:00 p.m. on September 6, 2020[1].

[1] Boston Globe Crash Report (https://www.bostonglobe.com/2020/09/06/metro/motorcyclist-injured-during-crash-south-boston/)

Study area intersections were compared to the MassDOT Highway Safety Improvement Plan ("HSIP") map of the Commonwealth's top crash locations, which indicated that none of the study area intersections were identified as HSIP-eligible locations.

Table E-2 Study Area Intersection Crash Summary (2020-2024)

Characteristics	Total	W First St / F St	W First St / E St	New Cypher St / E St	Site Entrance C / Pappas Way	Summer St / Fargo St	E St / Fargo St	W First St / E 1st St / Pappas Way	W First St / Dorchester St	Dorchester St / E 1st St	D St / Cypher St	W First St / D St	D St / Fargo St	Summer St / D St	D St / Haul Rd	D St / Congress St	B St / Congress St	S Boston Bypass / Cypher St	Summer St / Pumphouse Rd	Haul Rd / Pumphouse Rd	Summer St / Drydock Ave	Summer St / E 1st St	Total
Currently Signalized		No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
MassDOT ACR		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	
AADT		6,030	10,220	4,840	4,100	16,710	3,300	9,060	4,650	8,320	7,820	6,940	6,480	18,650	14,310	15,790	21,170	16,220	16,700	10,690	20,600	17,090	
MassDOT CCR		0	0.05	0	0.13	0.07	0	0.06	0	0.13	0.07	0.16	0.08	0.26	0.08	0.42	0.35	0.41	0.10	0.51	0.08	0	
Rate higher than MassDOT ACR		NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
Year																							
2020	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	5
2021	17	0	0	0	0	0	0	0	0	0	0	0	0	4	1	4	2	3	0	2	1	0	17
2022	24	0	0	0	0	0	0	1	0	1	1	1	0	3	1	3	3	5	0	4	1	0	24
2023	13	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	5	1	3	1	0	0	13
2024	16	0	0	0	1	2	0	0	0	0	0	1	1	2	0	2	2	3	0	2	0	0	16
Total	75	0	1	0	1	2	0	1	0	2	1	2	1	9	2	12	13	12	3	10	3	0	75
Crash Type																							
Single vehicle crash	9	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	1	1	0	2	0	9
Angle	19	0	0	0	1	1	0	0	0	0	0	2	0	1	1	3	2	3	0	5	0	0	19
Front to Rear	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Rear-end	13	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	3	4	0	1	0	0	13
Sideswipe, same direction	23	0	0	0	0	0	0	0	0	0	1	0	0	4	1	4	7	2	1	2	1	0	23
Sideswipe, opposite direction	5	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0	5
Head-on	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Not reported	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	3

Table E-2 Study Area Intersection Crash Summary (2020-2024) (Continued)

Characteristics	Total	W First St / F St	W First St / E St	New Cypher St / E St	Site Entrance C / Pappas Way	Summer St / Fargo St	E St / Fargo St	W First St / E 1st St / Pappas Way	W First St / Dorchester St	Dorchester St / E 1st St	D St / Cypher St	W First St / D St	D St / Fargo St	Summer St / D St	D St / Haul Rd	D St / Congress St	B St / Congress St	S Boston Bypass / Cypher St	Summer St / Pumphouse Rd	Haul Rd / Pumphouse Rd	Summer St / Drydock Ave	Summer St / E 1st St	Total
Crash Severity																							
Property damage only (none injured)	54	0	0	0	1	2	0	1	0	0	1	1	1	7	2	10	9	10	1	7	1	0	54
Non-fatal injury	14	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4	2	2	3	1	0	14
Fatal injury	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Not Reported	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2
Unknown	4	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	4
Pavement Conditions																							
Dry	57	0	1	0	1	1	0	1	0	1	1	1	0	7	1	10	11	11	0	8	2	0	57
Wet	10	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	2	1	1	1	1	0	10
Ice	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Not reported	6	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	2	1	0	0	6
Unknown	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Weather																							
Clear	44	0	0	0	1	1	0	1	0	1	0	1	1	4	2	6	8	8	0	8	2	0	44
Cloudy	8	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3	1	0	0	1	0	8
Clear/Clear	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	3
Rain	9	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	2	1	2	1	0	0	9
Cloudy/Sleet, hail (freezing rain or drizzle)	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Sleet, hail (freezing rain or drizzle)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Cloudy/Rain	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Snow	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Not Reported	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	1	1	0	0	7

Table E-2 Study Area Intersection Crash Summary (2020-2024) (Continued)

Characteristics	Total	W First St / F St	W First St / E St	New Cypher St / E St	Site Entrance C / Pappas Way	Summer St / Fargo St	E St / Fargo St	W First St / E 1st St / Pappas Way	W First St / Dorchester St	Dorchester St / E 1st St	D St / Cypher St	W First St / D St	D St / Fargo St	Summer St / D St	D St / Haul Rd	D St / Congress St	B St / Congress St	S Boston Bypass / Cypher St	Summer St / Pumphouse Rd	Haul Rd / Pumphouse Rd	Summer St / Drydock Ave	Summer St / E 1st St	Total
Light Conditions																							
Daylight	40	0	1	0	1	2	0	0	0	0	1	1	0	5	2	7	5	5	0	8	2	0	40
Dusk	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Dark - lighted roadway	28	0	0	0	0	0	0	1	0	2	0	1	0	3	0	4	6	7	2	1	1	0	28
Dark - roadway not lighted	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Dark - unknown roadway lighting	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Other	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Non-Motorist	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	4

Background Traffic Growth Projects

The Boston Planning Department maintains an online database of development projects, which includes all projects with a filed letter of intent, under review with the Boston Planning Department, Boston Planning and Development Agency Board approved, or under construction. The South Boston Waterfront and South Boston neighborhoods have 32 projects in the database within one-half mile of the Phase 1 Site. A number of these projects either did not complete traffic studies as part of their filing process, or the data was unable to be located, or their analysis of project-generated trips did not overlap with intersections identified in the study area.

This list below was first developed in January 2026 and was confirmed with and approved by the Boston Planning Department prior to submission. Projects not listed here were not listed by the City as relevant projects to include in traffic analysis in January 2026.

The list of background projects includes:

- **7 Channel Center** (Board Approved) - This 99,500 sf office/research & development building is part of the larger Channel Center Project. Site-generated traffic volumes were identified in the Notice of Project Change ("NPC") filed with the City on June 23, 2022, and have been added to future conditions traffic volume networks.
- **Seaport Square Blocks N, L3 & L6, L5** (Board Approved/Under Construction) – These blocks make up a portion of the larger Seaport Square Project and includes approximately 1,460,000 sf of mixed-use development and open space in the South Boston Waterfront District. Blocks N, L3 & L6, and L5 are located within one-half mile of the Master Plan Site, and have been confirmed by the Planning Department as developments that will contribute to the background traffic growth of the site. Block N (Board Approved/Under Construction) is an approximately 420,000 sf office/research & development workplace, with 40,000 sf of retail on the ground floors. Block L3 (Board Approved) is an approximately 425,000 sf development consisting of office/research, residential, and retail uses. Block L6 (Board Approved) is an approximately 355,000 sf development consisting of office/research, residential, and retail

uses. Block L5 (Construction Complete, building not yet open) is an approximately 700,000 sf development comprised of office space, ground floor retail, and a performing arts center. Site-generated traffic volumes for all four blocks were identified in the Notice of Project Change ("NPC") filed with the City on September 11, 2019, and have been added to future conditions traffic volume networks.

- **South Boston Innovation Campus (Phase 2)** (Under Review) – This approximately 320,000 sf development is a ten-story life science building with one level of below-grade parking, ground-floor retail, lab and office space. Site-generated traffic volumes were identified in the NPC filed with the City on February 15, 2024, and have been added to future conditions traffic volume networks.

- **Parcel X (310 Northern Avenue)** (Board Approved) – This 764,260 sf redevelopment of a parcel within the RLFMP will include a two-building life science/research & development campus. Site-generated traffic volumes were identified in the Project Notification Form ("PNF") filed with the City on February 28, 2022, and have been added to future conditions traffic volume networks.

- **22 Drydock Avenue** (Board Approved/Under Construction) – This 321,260 sf development is a research laboratory/office building within the RLFMP. Site-generated traffic volumes were identified in the PNF filed with the City of Boston on October 24, 2022, and have been added to future conditions traffic volume networks.

- **776 Summer Street** (Board Approved) – This 1.73 million sf development on a 15-acre piece of land will contain approximately 610,000 sf of residential use, 860,000 sf of office/research and development uses, 80,000 sf of retail, 115,000 sf of hotel, 5.7 acres of public open space, and up to 1,214 parking spaces. The project is proposed to be completed in two phases, the first of which will construct 746,000 sf of the development, and the second of which will construct 1,025,500 sf of the development. Site-generated traffic volumes were identified in the Draft Environmental Impact Report/Draft Project Impact Report (DEIR/DPIR) filed with the City and

EEA on August 16, 2018, and have been added to future conditions traffic volume networks.

- **270 West Second Street** (Board Approved) – This 84,500 sf multi-family residential development will contain 81 units, 60 garage parking spaces, and 12 Inclusionary Development Policy affordable units. Site-generated traffic volumes were identified in the PNF filed with the City on September 29th, 2021, and have been added to future conditions traffic volume networks.

- **99 A Street** (Under Review) – This six-story, approximately 210,000 sf life sciences development will contain a first-level loading dock and basement-level parking for approximately 76 vehicles. There may be a small retail space along the A Street frontage. Site-generated traffic volumes were identified in the PNF filed with the City on March 22, 2019, and have been added to future conditions traffic volume networks.

- **295 West First Street** (Board Approved) – This 224,567 sf mixed-use residential building will have up to 252 units, public open space, ground floor community and retail space, garage parking for up to 126 vehicles, and bicycle storage. Site-generated traffic volumes were identified in the PNF filed with the City on December 21, 2023, and have been added to future conditions traffic volume networks.

- **391 D Street** (Under Review) – This 15-story, approximately 160,000 sf hotel will contain 438 rooms. This development is the second phase of the 371-401 D Street project. Site-generated traffic volumes were identified in the PNF filed with the City on October 9, 2025, and have been added to future conditions traffic volume networks.

- **6 Elkins Street** (Under Review) – This 97,000 sf research laboratory development will contain approximately 4,400 sf of retail and restaurant space, and will include approximately 48 parking spaces in a below grade garage. Site-generated traffic volumes were identified in the PNF filed with the City on April 7, 2023, and have been added to future conditions traffic volume networks.

- **10 World Trade** (Construction Complete, building not yet open) – This approximately 520,000 sf development will contain office and life science space with significant public uses. Site-generated traffic volumes were identified in the Draft Project Impact Report ("DPIR") filed with the City on February 18, 2020, and have been added to future conditions traffic volume networks.
- **244-284 A Street** (Board Approved) – This approximately 1,100,000 sf development is proposing a residential building, a commercial mixed-use building, and a laboratory/research and development building. Site-generated traffic volumes were identified in the DPIR filed with the City of Boston on May 17, 2021, and have been added to future conditions traffic volume networks.
- **232 A Street** (Board Approved) – This approximately 325,000 sf development contains lab/office/research & development space with a 1.2-acre public waterfront park. Site-generated traffic volumes were identified in the Draft Environmental Impact Report ("DEIR") filed with EEA on January 31, 2024, and have been added to future conditions traffic volume networks.
- **Gillette Redevelopment** (Under Review) – This approximately 5,750,000 sf development proposes multiple buildings across a 31-acre site containing research & development/office, residential, hospitality/hotel, and retail/restaurant uses. Site-generated traffic volumes were identified in a Supplemental Filing filed with the City on April 11, 2025, and have been added to future conditions traffic volume networks.
- **181 – 185 West First Street** (Board Approved) – This approximately 150,000 sf residential development will contain 144 units and garage parking for 100 spaces spread across a four-story building and a six story building. Site-generated traffic volumes were identified in a PNF filed with the City on December 31, 2013, and have been added to future conditions traffic volume networks.

Master Plan Site Trip Generation

There are presently eight driveways serving the Master Plan Site, of which six were found to be in active use during traffic count data collection in December 2025. Collectively, these driveways accommodate an estimated 1,599 daily vehicle (passenger vehicle and truck) trips, of which an estimated 125 occur in the a.m. peak hour and an estimated 113 occur in the p.m. peak hour. Moving northwest to northeast in a counter-clockwise direction on the Master Plan Site, shown in Figure E-2, Table E-3 shows driveway vehicle volumes and how they were derived.

Table E-3 Master Plan Site Vehicle Trips by Curb Cut

Curb Cut Location	Daily Volume	a.m. Peak Hour Volume	p.m. Peak Hour Volume	Methodology
#1	310	22	26	Automated traffic recorder ("ATR") data for 24-hour period
#2	557	37	37	Derivation of daily figures using six-hour TMC data, given percentage of trips at driveway location #1 during the shared six hour period over daily trips
#3	17	2	2	Change in traffic volumes along Pappas Way given TMC data at Road 1 intersection to north and ATR data to south, with no other curb cuts present; then, derivation of daily volumes using six-hour TMC data, given percentage of trips at driveway location #1 during the shared six hour period over daily trips
#4	0	0	0	No observations from TMC data

Table E-3 Master Plan Site Vehicle Trips by Curb Cut (Continued)

Driveway Location	Daily Volume	a.m. Peak Hour Volume	p.m. Peak Hour Volume	Methodology
#5	79	5	5	Change in traffic volumes along Pappas Way given TMC data at adjacent intersections, with no other curb cuts present
#6	0	0	0	No observations from TMC data
#7	242	17	16	Change in traffic volumes along E Street given TMC data at adjacent intersections, with no other curb cuts present; then, derivation of daily volumes using six-hour TMC data, given percentage of vehicle trips at driveway location #1 during the shared six hour period over daily trips
#8	394	42	27	Derivation of daily volumes using six-hour TMC data, given percentage of vehicle trips at driveway location #1 during the shared six hour period over daily trips
TOTAL	**1,599**	**125**	**113**	



RESERVED CHANNEL DEVELOPMENT

SOURCE: STANTEC

FIGURE E-2

MASTER PLAN SITE CURB CUTS

At curb cut locations where hourly data was not collected, the three-hour TMC counts and data derived from those counts were divided by three to yield peak hour estimates.

To identify the existing Master Plan Site vehicle trips that are associated with the land uses that will be eliminated in the Phase 1 Project, the estimated share of trips generated by all warehouse uses on the Master Plan Site (21%) was identified using the ITE Trip Generation Manual, 12th Edition. Then, that share of observed Master Plan Site vehicle trips was multiplied by the percentage of total warehouse area on the Master Plan Site that will be redeveloped in Phase 1 (30.7%). Table E-4 below breaks down the calculation for daily vehicle trips.

Table E-4 Derivation of Existing Vehicle Trips Generated by Phase 1 Site Uses to be Redeveloped

1,599	Observed Daily Master Plan Site trips
X	
21%	ITE-Estimated Share of Warehouse Trips as % of all trips, Master Plan Site
X	
30.7%	% of all warehouse space that is on Phase 1 Site
=	
103	Daily Vehicle Trips generated by Phase 1 Site

The total estimated existing vehicle trips for both the Phase 1 Site and Master Plan Site are shown in Table E-5.

Table E-5 Estimated Existing Vehicle Trips for Phase 1 Site Uses and Master Plan Site Uses

Site	Daily	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1 Site	103	6	2	8	2	5	7
Master Plan Site	***1,599***	***95***	***30***	***125***	***38***	***75***	***113***

Finally, to estimate existing person trips for both the Phase 1 Site and Master Plan Site, vehicle trips were 1) multiplied by average vehicle occupancy ("AVO") factors by land use (sourced from the FHWA National Household Travel Survey) and 2) divided by driving mode-share percentage estimates from the South Boston Seaport Strategic Transportation Plan. Table E-6 shows the total estimated existing person trips associated with both the Phase 1 Site and Master Plan Site.

Table E-6 Estimated Existing Person Trips for Phase 1 Site Uses and Master Plan Site Uses

	Daily	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1 Site	***138***	***8***	***3***	***11***	***3***	***8***	***11***
Master Plan Site	***2,633***	***148***	***51***	***199***	***72***	***127***	***199***

Figure E-3 Weekday Load and Capacity - MBTA Bus Route 4, Inbound *(southeast from North Station)*

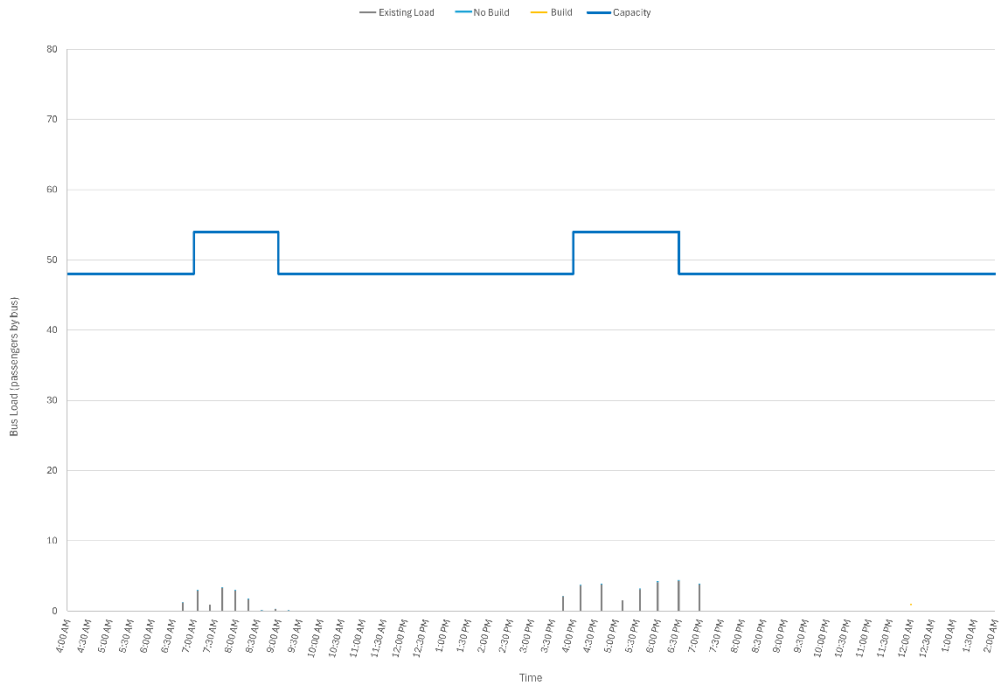


Figure E-4 Weekday Load and Capacity - MBTA Bus Route 4, Outbound *(northwest from Design Center)*

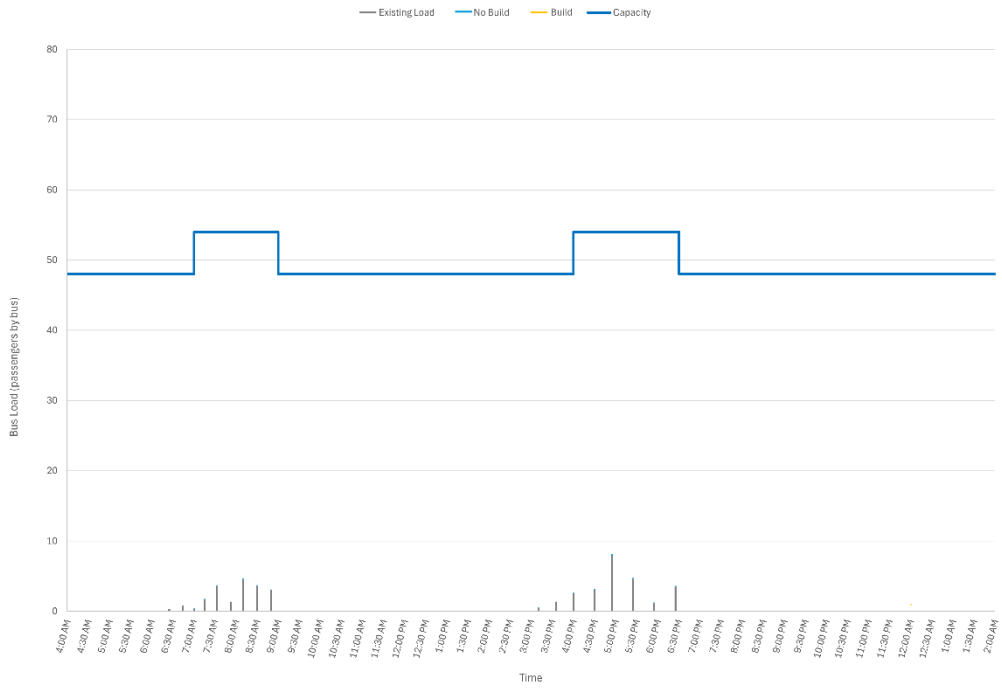


Figure E-5 **Weekday Load and Capacity - MBTA Bus Route 7, Inbound** *(northwest from City Point)*

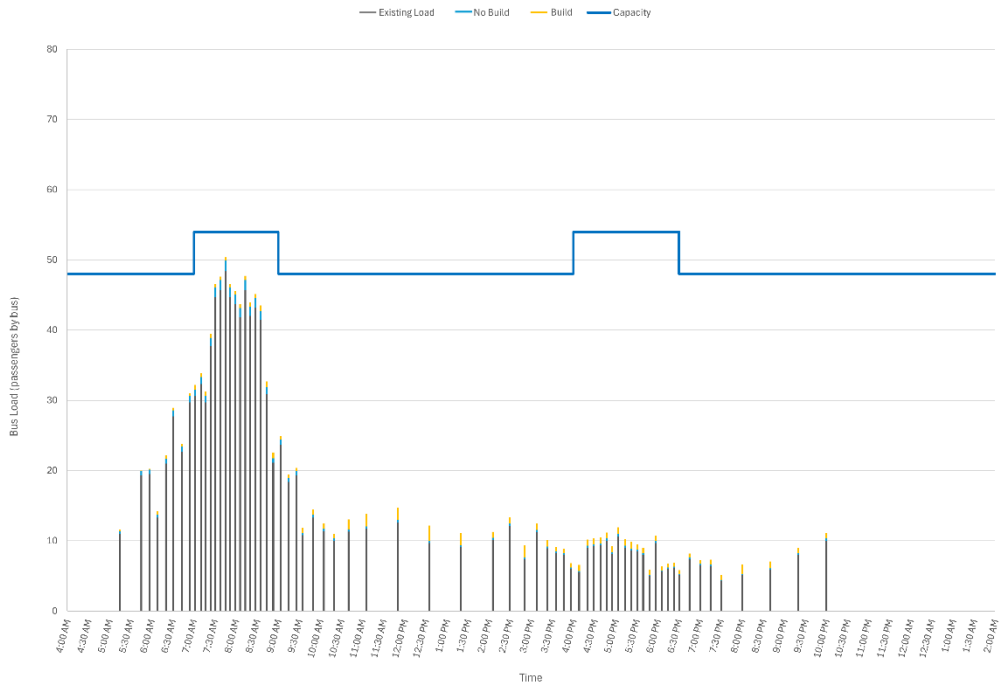


Figure E-6 **Weekday Load and Capacity - MBTA Bus Route 7, Outbound** *(southeast from South Station)*

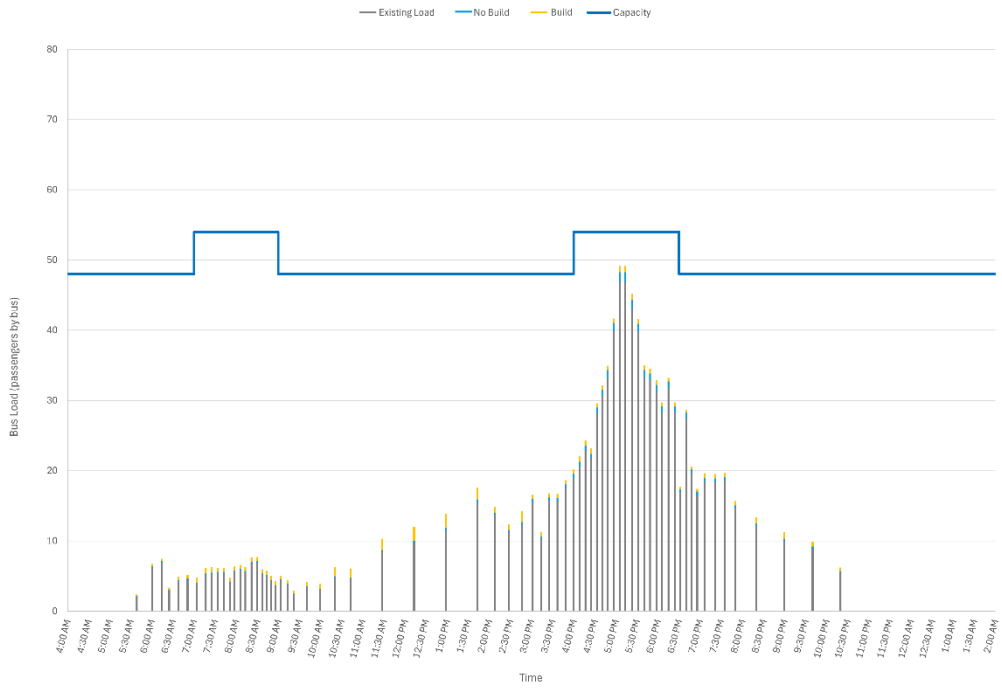


Figure E-7 **Weekday Load and Capacity - MBTA Bus Route 9, Inbound** *(northwest from City Point)*

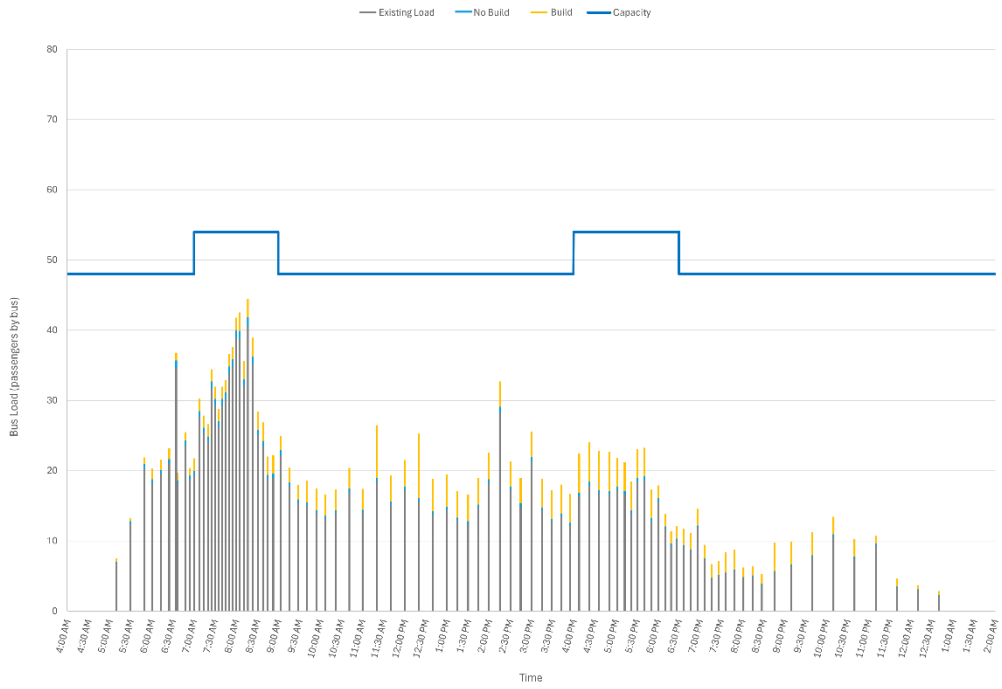


Figure E-8 **Weekday Load and Capacity - MBTA Bus Route 9, Outbound** *(southeast from Back Bay)*

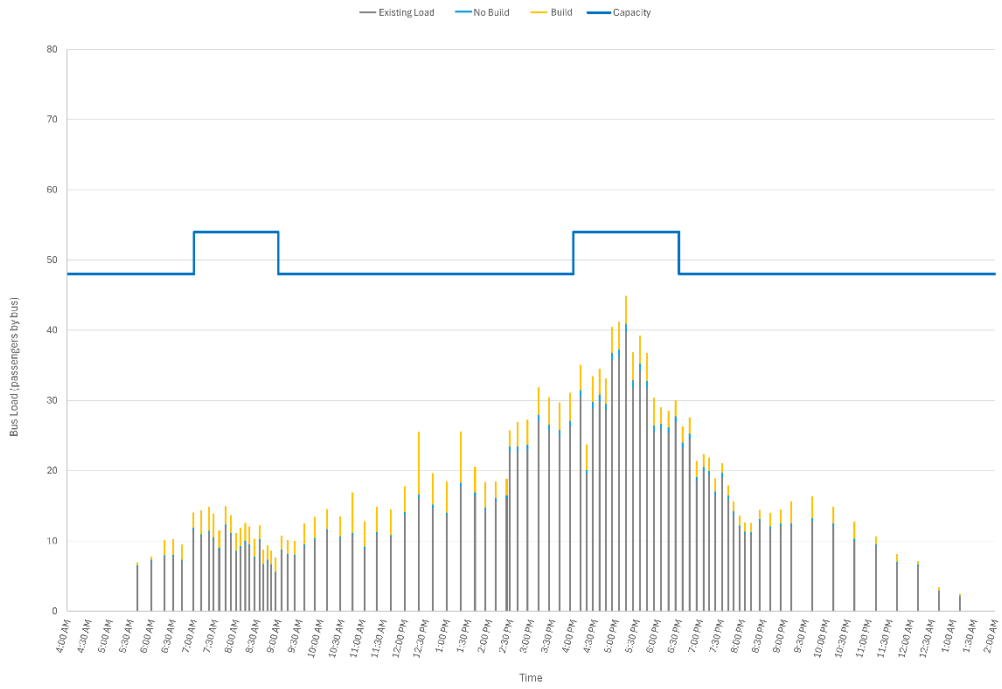


Figure E-9 **Weekday Load and Capacity - MBTA Bus Route 10, Inbound** *(northwest from City Point)*

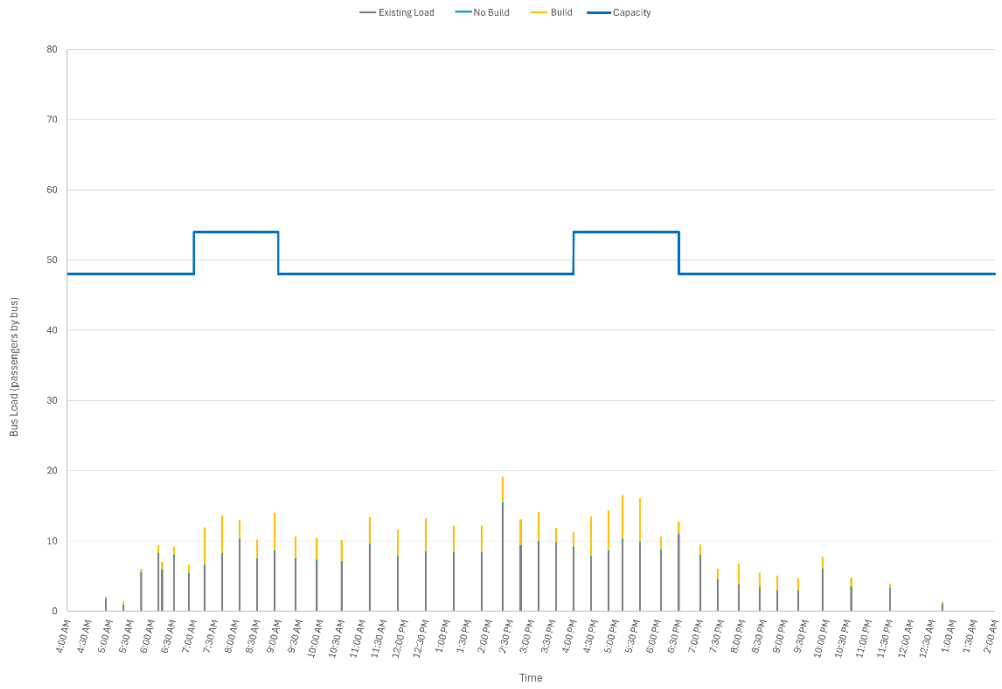


Figure E-10 **Weekday Load and Capacity - MBTA Bus Route 10, Outbound** *(southeast from Arlington)*

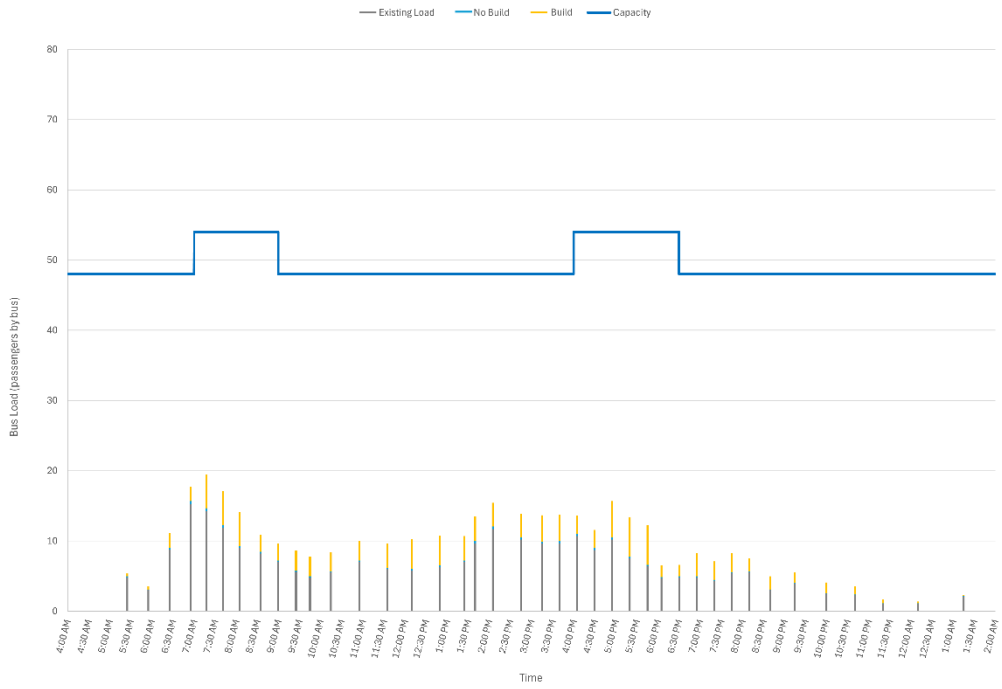


Figure E-11 Weekday Load and Capacity - MBTA Bus Route 11, Inbound *(northwest from City Point)*

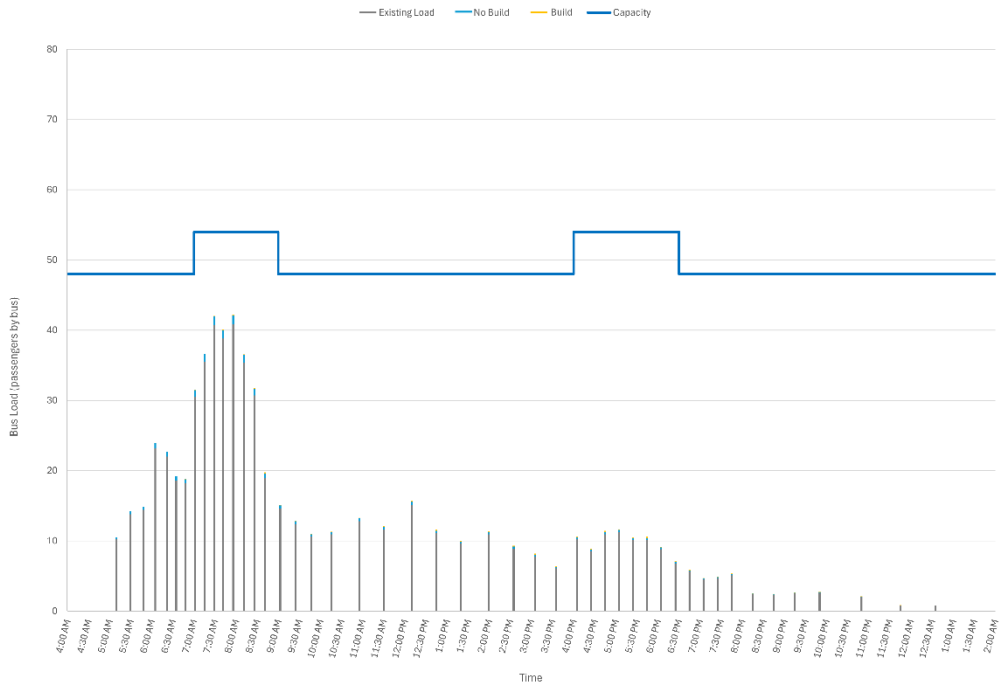


Figure E-12 Weekday Load and Capacity - MBTA Bus Route 11, Outbound *(southeast from South Station)*

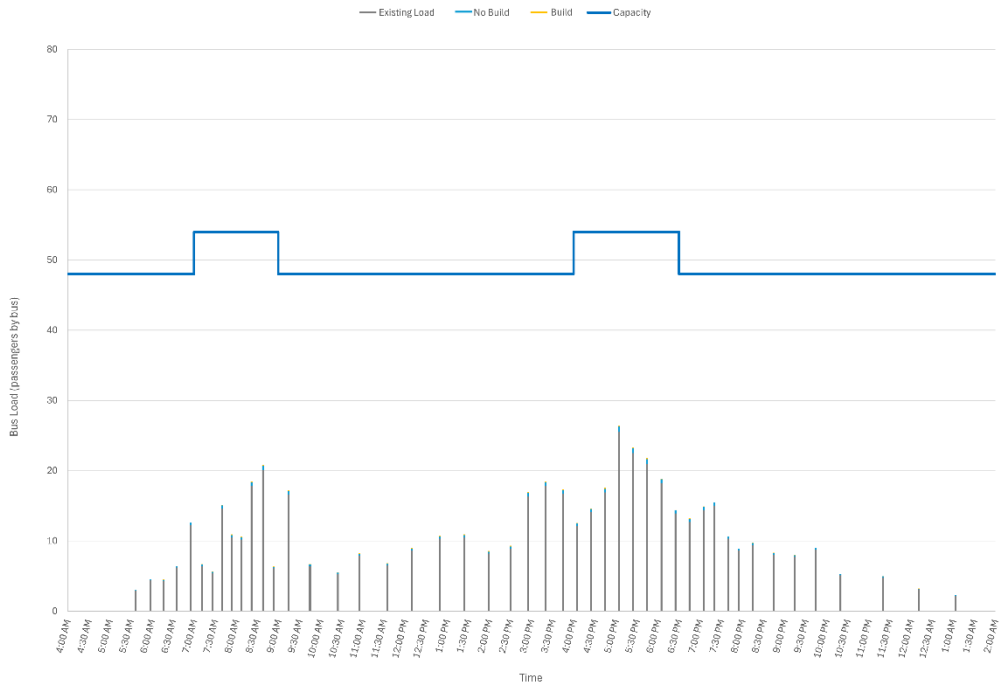


Figure E-13 Weekday Load and Capacity – MBTA Silver Line SL1, Inbound *(southwest from Airport)*

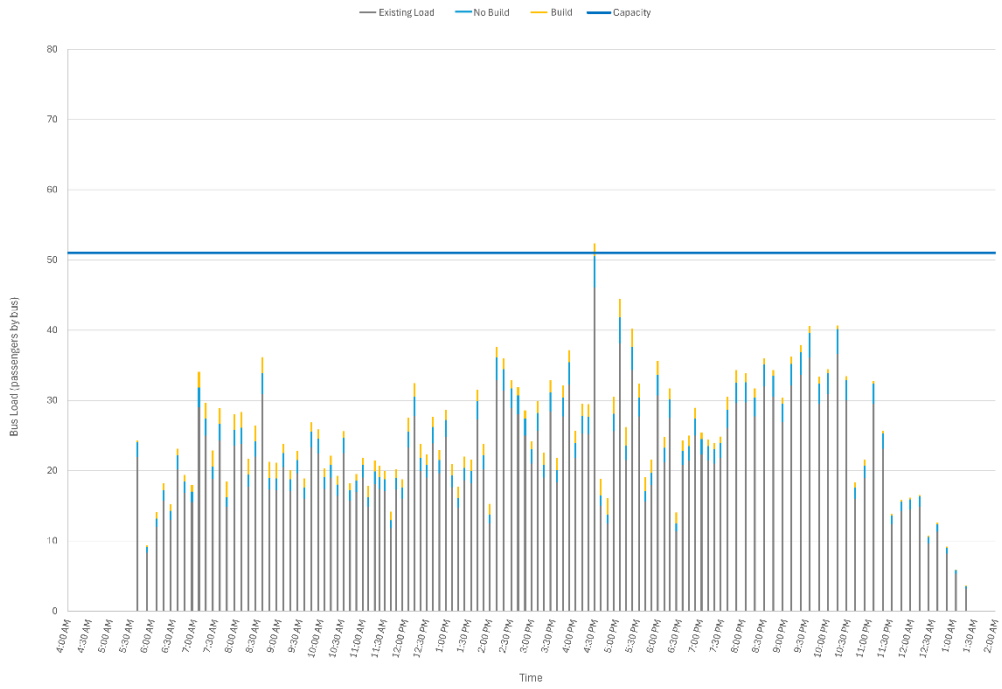


Figure E-14 Weekday Load and Capacity - MBTA Silver Line SL1, Outbound *(northeast from South Station)*

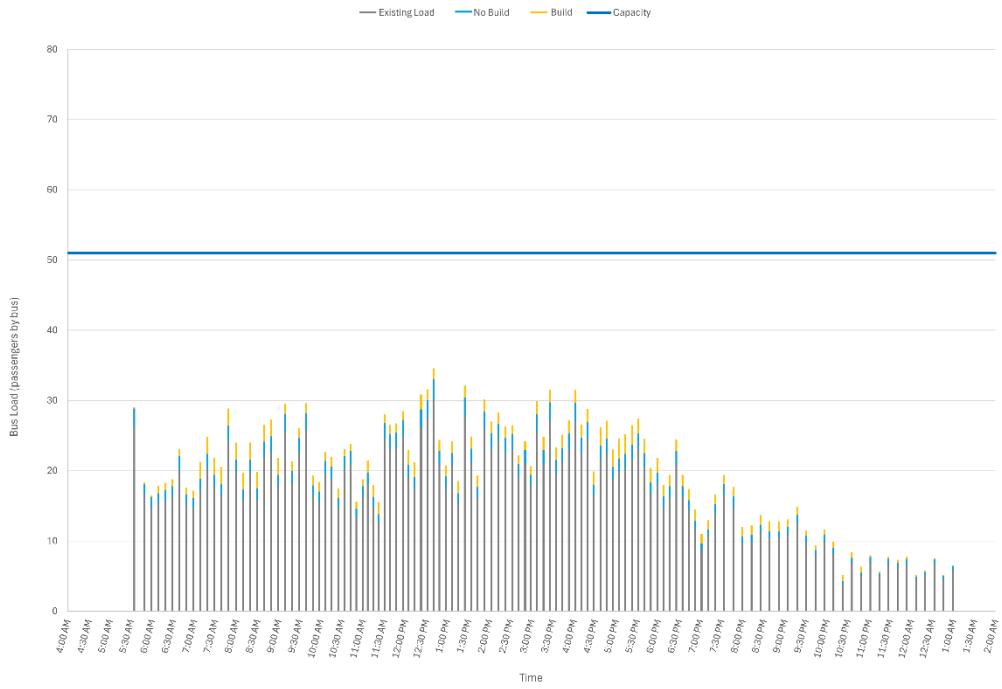


Figure E-15 Weekday Load and Capacity – MBTA Silver Line SL2, Inbound *(northwest from Drydock Ave)*

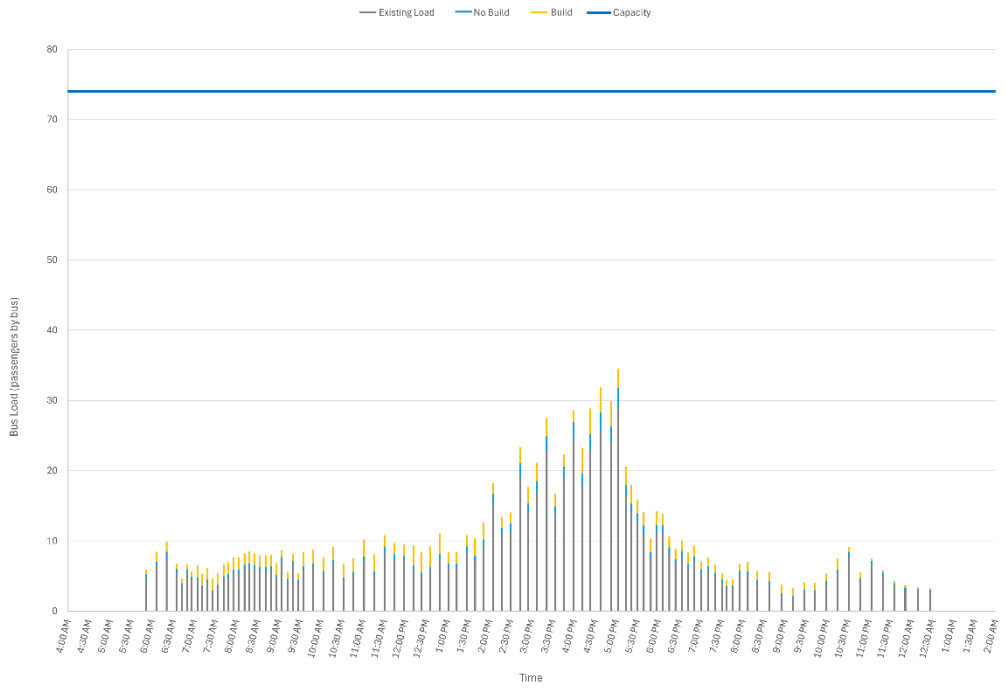


Figure E-16 Weekday Load and Capacity - MBTA Silver Line SL2, Outbound *(southeast from South Station)*

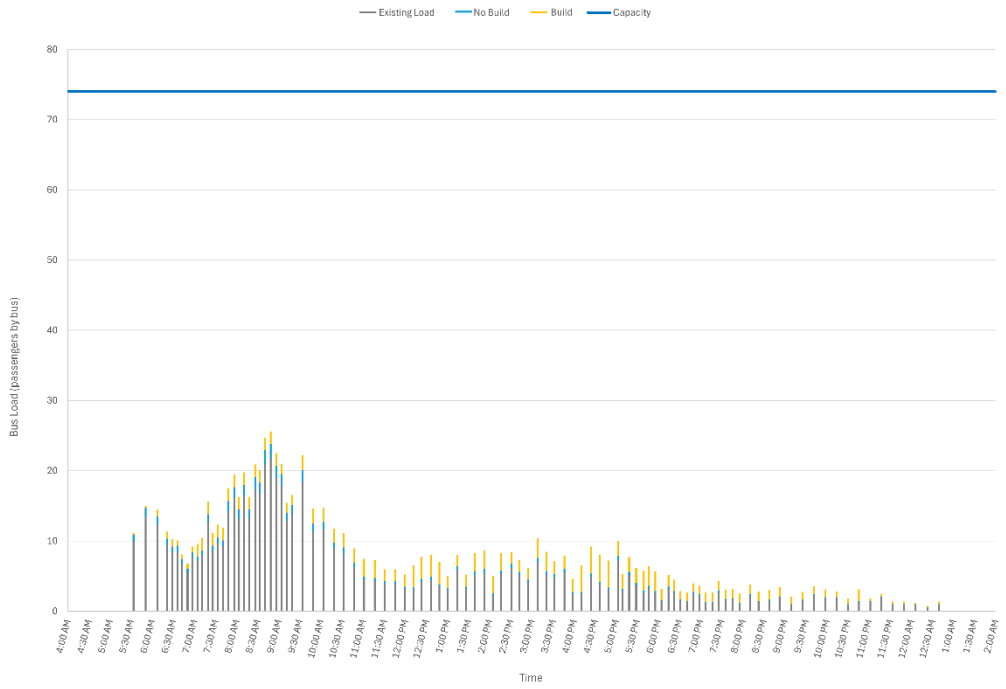


Figure E-17 Weekday Load and Capacity – MBTA Silver Line SL3, Inbound *(south from Chelsea)*

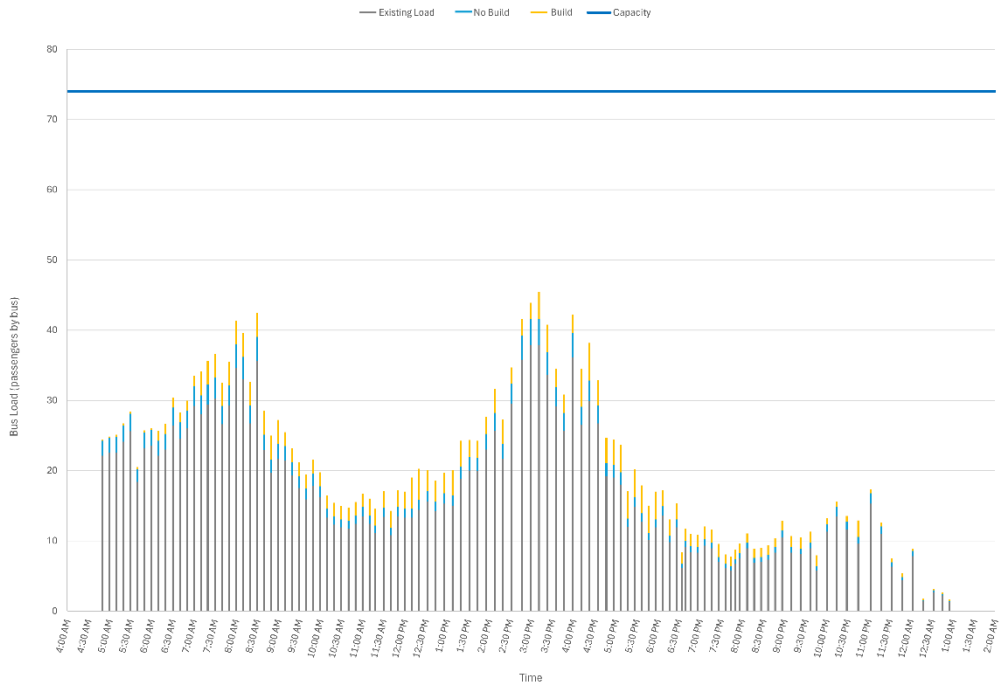


Figure E-18 Weekday Load and Capacity - MBTA Silver Line SL3, Outbound *(north from South Station)*

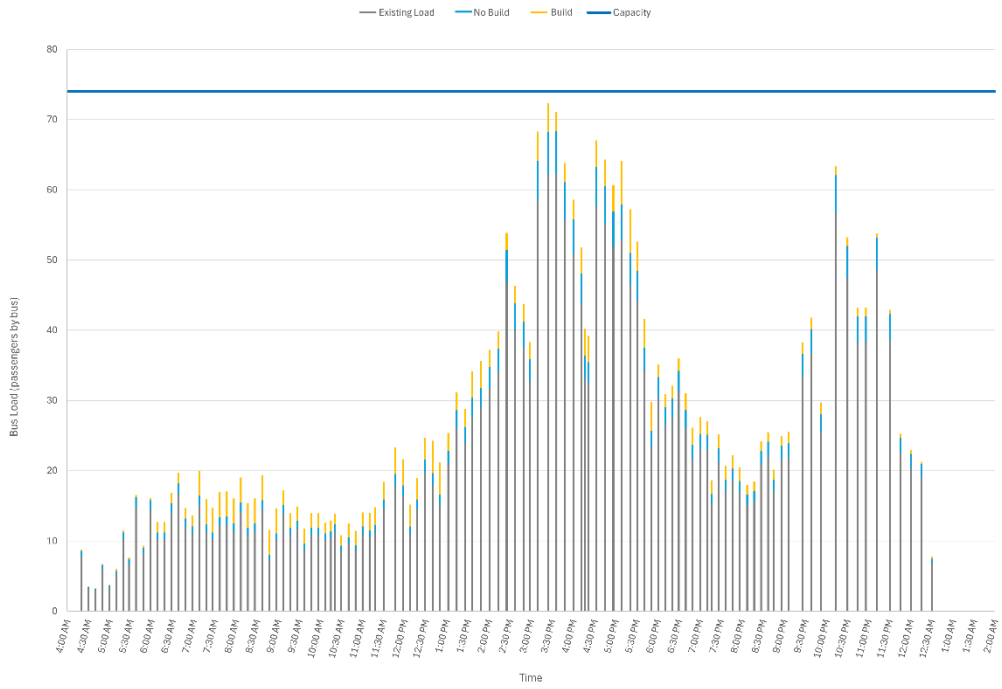


Figure E-19 Weekday Load and Capacity – MBTA Red Line, Northbound

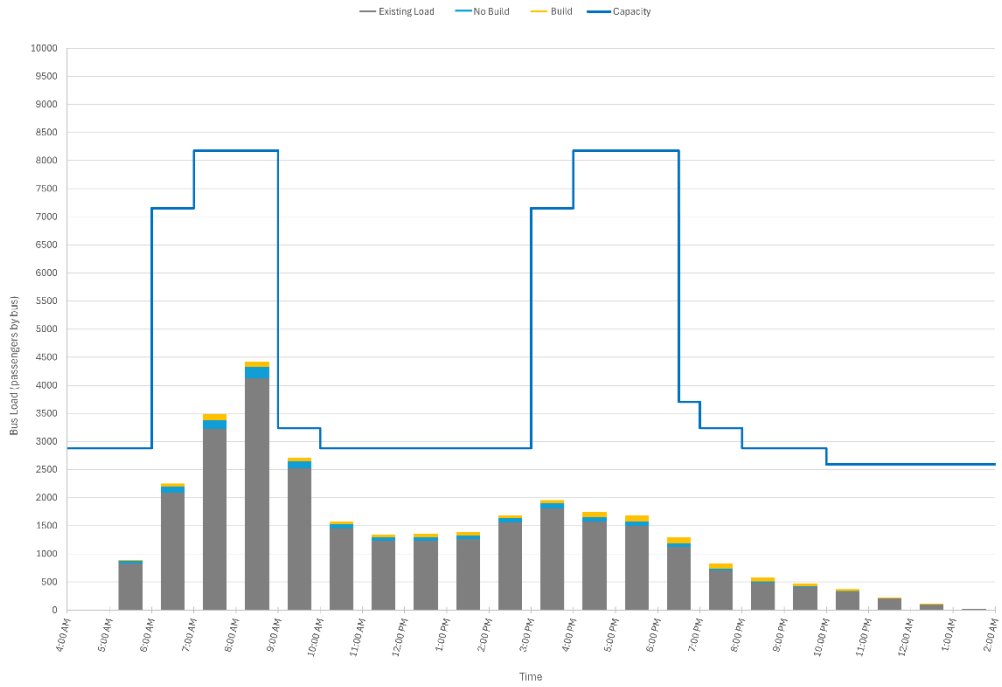


Figure E-20 Weekday Load and Capacity - MBTA Red Line, Southbound

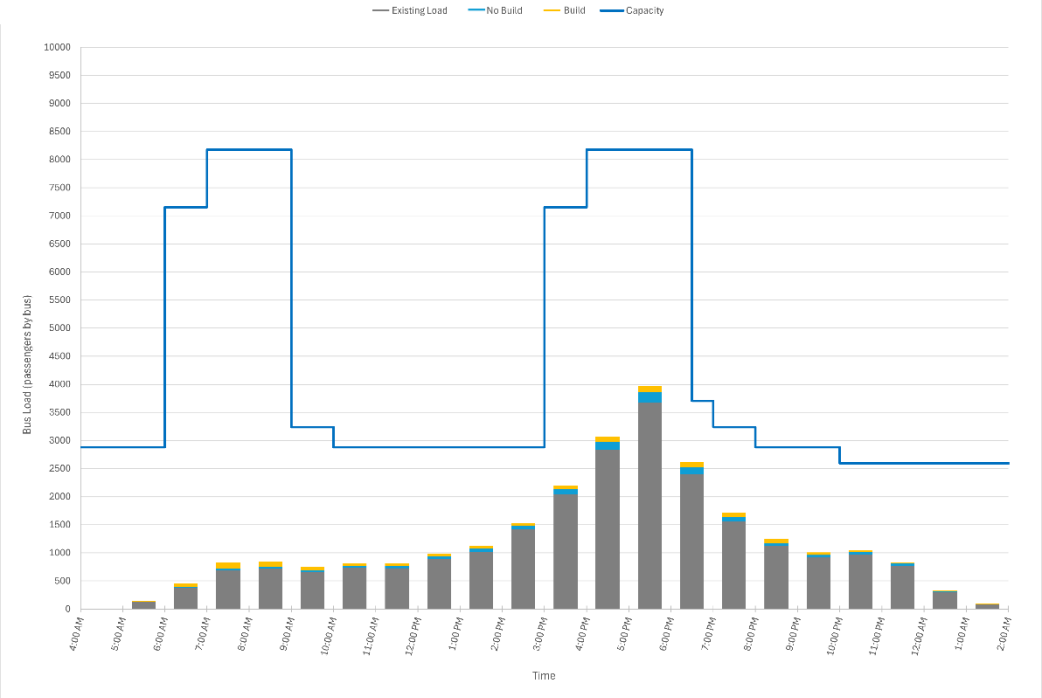


Table E-7 Summary of Weekday Load & Capacity Analysis for Identified MBTA Bus & Silver Line Routes – Existing Conditions

					V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
Route	**Direction**	**Stop Closest to RCD Site**	**Weekday Peak Period**	**Passenger Crowding Threshold (MBTA SDP)**	**Frequency of Service**	**Total Capacity**	**Total Ridership**	**V/C Rate**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**	**Stop with Max. Passenger Load across all stops**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**
Route 4	**Inbound** *southeast from North Station*	Summer St opp WTC Ave	AM Peak	54	7	378	12.1	0.03201	3.30	0.0611	0	0	Congress St @ Franklin St	14.2	0.2629	0	0
			PM Peak	54	5	270	16.1	0.05963	4.10	0.0759	0	0					
			Off-Peak	48	5	240	11.5	0.04792	4.30	0.0896	0	0					
	Outbound *northwest from Design Center*	Drydock Ave @ Design Center Place	AM Peak	54	7	378	18.1	0.04788	4.50	0.0833	0	0					
			PM Peak	54	6	324	22.9	0.07068	7.90	0.1463	0	0	Pearl St @ High St	17.1	0.3166	0	0
			Off-Peak	48	4	192	2.9	0.01510	1.30	0.0271	0	0					
Route 7	**Inbound** *northwest from City Point*	Summer St @ Drydock Ave	AM Peak	54	16	864	623.6	0.72176	48.40	0.8963	0	0	Summer St @ Drydock Ave & Summer St @ D St	48.4	0.8962	0	0
			PM Peak	54	16	864	128.2	0.14838	10.60	0.1963	0	0					
			Off-Peak	48	37	1776	456.1	0.25681	29.70	0.6188	0	0					
	Outbound *southeast from South Station*	Summer St @ Pappas Way	AM Peak	54	15	810	78.0	0.09630	6.90	0.1278	0	0					
			PM Peak	54	18	972	577.8	0.59444	46.80	0.8667	0	0	Summer St Opp Wtc Ave & Summer St @ E St	47.1	0.8722	0	0
			Off-Peak	48	37	1776	396.7	0.22337	27.40	0.5708	0	0					
Route 9	**Inbound** *northwest from City Point*	West Broadway @ F St	AM Peak	54	20	1080	583.3	0.54009	40.60	0.7519	0	0					
			PM Peak	54	14	756	211.6	0.27989	18.60	0.3444	0	0					
			Off-Peak	48	57	2736	748.7	0.27365	34.60	0.7208	0	0	E Berkeley St @ Tremont St	45.3	0.9437	0	0
	Outbound *southeast from Back Bay*	West Broadway @ F St	AM Peak	54	16	864	142.4	0.16481	12.00	0.2222	0	0					
			PM Peak	54	15	810	450.6	0.55630	39.70	0.7352	0	0	W Broadway @ Broadway Station	46.7	0.8648	0	0
			Off-Peak	48	57	2736	779.8	0.28501	27.10	0.5646	0	0					
Route 10	**Inbound** *northwest from City Point*	Dorchester St @ Broadway	AM Peak	54	5	270	40.1	0.14852	10.00	0.1852	0	0					
			PM Peak	54	6	324	53.0	0.16358	10.00	0.1852	0	0	E Newton St @ Harrison Ave	28.3	0.5240	0	0
			Off-Peak	48	30	1440	190.0	0.13194	15.00	0.3125	0	0					
	Outbound *southeast from Arlington*	Dorchester St @ East Broadway	AM Peak	54	4	216	43.3	0.20046	14.20	0.2630	0	0					
			PM Peak	54	6	324	48.2	0.14877	10.70	0.1981	0	0	Massachusetts Ave @ Albany St	33.1	0.6129	0	0
			Off-Peak	48	30	1440	178.5	0.12396	15.20	0.3167	0	0					
Route 11	**Inbound** *northwest from City Point*	West Sixth St @ F St	AM Peak	54	8	432	271.4	0.62824	40.80	0.7556	0	0	W 7th @ B Street & 250 Dorchester Avenue	44.8	0.8296	0	0
			PM Peak	54	8	432	76.6	0.17731	11.20	0.2074	0	0					
			Off-Peak	48	31	1488	296.1	0.19899	23.20	0.4833	0	0					
	Outbound		AM Peak	54	8	432	91.1	0.21088	20.10	0.3722	0	0					

Route	Direction	Stop Closest to RCD Site	Weekday Peak Period	Passenger Crowding Threshold (MBTA SDP)	V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
					Frequency of Service	Total Capacity	Total Ridership	V/C Rate	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold	Stop with Max. Passenger Load across all stops	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold
	southeast from South Station	West Seventh St @ F St	PM Peak	54	8	432	144.2	0.33380	25.50	0.4722	0	0	W Broadway @ Broadway Station	32.6	0.6037	0	0
			Off-Peak	48	31	1488	280.0	0.18817	17.80	0.3708	0	0					
SL1	**Inbound** *southwest from Airport*	Silver Line Way	AM Peak	51	12	612	264.3	0.43186	30.90	0.6059	0	0					
			PM Peak	51	17	867	417.4	0.48143	46.10	0.9039	0	0	Silver Line Way Before Manuli	46.1	0.9039	0	0
			Off-Peak	51	88	4488	1853.8	0.41306	36.60	0.7176	0	0					
	Outbound *northeast from South Station*	Silver Line Way	AM Peak	51	11	561	211.7	0.37736	24.10	0.4725	0	0	South Station Silver Line	42.2	0.8274	0	0
			PM Peak	51	17	867	345.0	0.39792	27.00	0.5294	0	0					
			Off-Peak	51	88	4488	1425.5	0.31762	30.10	0.5902	0	0					
SL2	**Inbound** *northwest from Drydock Ave*	Silver Line Way	AM Peak	74	16	1184	78.1	0.06596	6.20	0.0838	0	0					
			PM Peak	74	15	1110	243.4	0.21928	29.00	0.3919	0	0	Courthouse Inbound	50.5	0.6824	0	0
			Off-Peak	74	67	4958	453.1	0.09139	22.70	0.3068	0	0					
	Outbound *southeast from South Station*	Silver Line Way	AM Peak	74	16	1184	223.7	0.18894	21.70	0.2932	0	0	South Station Silver Line	45.3	0.6121	0	0
			PM Peak	74	14	1036	49.0	0.04730	7.20	0.0973	0	0					
			Off-Peak	74	70	5180	338.3	0.06531	18.30	0.2473	0	0					
SL3	**Inbound** *south from Chelsea*	Silver Line Way	AM Peak	74	12	888	345.3	0.38885	35.60	0.4811	0	0	Eastern Avenue	61.5	0.8310	0	0
			PM Peak	74	14	1036	236.1	0.22790	29.90	0.4041	0	0					
			Off-Peak	74	86	6364	1327.5	0.20860	37.90	0.5122	0	0					
	Outbound *north from South Station*	Silver Line Way	AM Peak	74	12	888	140.5	0.15822	15.00	0.2027	0	0					
			PM Peak	74	15	1110	610.6	0.55009	57.70	0.7797	0	0					
			Off-Peak	74	85	6290	1810.2	0.28779	62.30	0.8419	0	0	Ted Williams Tunnel Ob Entrance & Exit	62.7	0.8472	0	0

Table E-8 Summary of Weekday Load & Capacity Analysis for Identified MBTA Red Line Service at Broadway Station – Existing Conditions

	Service Period	Time	Cars Per Train	Service Headways (minutes)	Trains per Hour	Passenger Crowding Threshold (MBTA SDP)	Passenger Crowding Threshold (MBTA SDP) per Service Period	V/C rate across all trips within service periods at Broadway Station		V/C rate at trip with max. capacity load along all stops across RL		
								Total Ridership	Total V/C Rate	Stop	Ridership	V/C Rate
Northbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	833	0.2890			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	2093	0.2934			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	7346	0.4506	Broadway	4125	0.5060
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	2525	0.7788			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	1456	0.5052			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	3101	0.4304			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	2199	0.2312			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	1807	0.2533			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	3638.5	0.1785			
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	563.5	0.3041			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	700	0.2159			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	887	0.1539			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	522	0.1006			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	126	0.0162			
Southbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	120	0.0416			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	379	0.0531			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	1406	0.0862			
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	660	0.2036			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	728	0.2526			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	2127.5	0.2953			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	1926.5	0.2026			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	2040	0.2860			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	7706	0.3781	Downtown Crossing	4033	0.4947
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	1199	0.6472			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	1555	0.4796			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	2033	0.3527			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	1746	0.3366			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	393	0.0505			

Table E-9 Summary of Weekday Load & Capacity Analysis for Identified MBTA Bus & Silver Line Routes – 2033 No-Build Condition

					V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
Route	**Direction**	**Stop Closest to RCD Site**	**Weekday Peak Period**	**Passenger Crowding Threshold (MBTA SDP)**	**Frequency of Service**	**Total Capacity**	**Total Ridership**	**V/C Rate**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**	**Stop with Max. Passenger Load across all stops**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**
Route 4	**Inbound** *southeast from North Station*	Summer St opp WTC Ave	AM Peak	54	7	378	12.5	0.03300	3.40	0.0630	0	0	Congress St @ Franklin St	14.64	0.2711	0	0
			PM Peak	54	5	270	16.6	0.06148	4.23	0.0783	0	0					
			Off-Peak	48	5	240	11.9	0.04940	4.43	0.0924	0	0					
	Outbound *northwest from Design Center*	Drydock Ave @ Design Center Place	AM Peak	54	7	378	18.7	0.04937	4.64	0.0859	0	0					
			PM Peak	54	6	324	23.6	0.07287	8.15	0.1508	0	0	Pearl St @ High St	17.63	0.3265	0	0
			Off-Peak	48	4	192	3.0	0.01557	1.34	0.0279	0	0					
Route 7	**Inbound** *northwest from City Point*	Summer St @ Drydock Ave	AM Peak	54	16	864	642.9	0.74415	49.90	0.9241	0	0	Summer St @ Drydock Ave & Summer St @ D St	49.90	0.9241	0	0
			PM Peak	54	16	864	132.2	0.15298	10.93	0.2024	0	0					
			Off-Peak	48	37	1776	470.2	0.26478	30.62	0.6379	0	0					
	Outbound *southeast from South Station*	Summer St @ Pappas Way	AM Peak	54	15	810	80.4	0.09928	7.11	0.1317	0	0					
			PM Peak	54	18	972	595.7	0.61288	48.25	0.8936	0	0	Summer St Opp Wtc Ave & Summer St @ E St	48.56	0.8993	0	0
			Off-Peak	48	37	1776	409.0	0.23030	28.25	0.5885	0	0					
Route 9	**Inbound** *northwest from City Point*	West Broadway @ F St	AM Peak	54	20	1080	601.4	0.55685	41.86	0.7752	0	0					
			PM Peak	54	14	756	218.2	0.28858	19.18	0.3551	0	0					
			Off-Peak	48	57	2736	771.9	0.28214	35.67	0.7432	0	0	E Berkeley St @ Tremont St	46.71	0.9731	0	0
	Outbound *southeast from Back Bay*	West Broadway @ F St	AM Peak	54	16	864	146.8	0.16993	12.37	0.2291	0	0					
			PM Peak	54	15	810	464.6	0.57355	40.93	0.7580	0	0	W Broadway @ Broadway Station	48.15	0.8917	0	0
			Off-Peak	48	57	2736	804.0	0.29386	27.94	0.5821	0	0					
Route 10	**Inbound** *northwest from City Point*	Dorchester St @ Broadway	AM Peak	54	5	270	41.3	0.15313	10.31	0.1909	0	0					
			PM Peak	54	6	324	54.6	0.16865	10.31	0.1909	0	0	E Newton St @ Harrison Ave	29.18	0.5404	0	0
			Off-Peak	48	30	1440	195.9	0.13604	15.47	0.3222	0	0					
	Outbound *southeast from Arlington*	Dorchester St @ East Broadway	AM Peak	54	4	216	44.6	0.20668	14.64	0.2711	0	0					
			PM Peak	54	6	324	49.7	0.15338	11.03	0.2043	0	0	Massachusetts Ave @ Albany St	34.13	0.6320	0	0
			Off-Peak	48	30	1440	184.0	0.12780	15.67	0.3265	0	0					
Route 11	**Inbound** *northwest from City Point*	West Sixth St @ F St	AM Peak	54	8	432	279.8	0.64773	42.07	0.7790	0	0	W 7th @ B Street & 250 Dorchester Avenue	46.19	0.8554	0	0
			PM Peak	54	8	432	79.0	0.18282	11.55	0.2138	0	0					
			Off-Peak	48	31	1488	305.3	0.20516	23.92	0.4983	0	0					

Route	Direction	Stop Closest to RCD Site	Weekday Peak Period	Passenger Crowding Threshold (MBTA SDP)	V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
					Frequency of Service	Total Capacity	Total Ridership	V/C Rate	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold	Stop with Max. Passenger Load across all stops	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold
	Outbound *southeast from South Station*	West Seventh St @ F St	AM Peak	54	8	432	93.9	0.21742	20.72	0.3838	0	0					
			PM Peak	54	8	432	148.7	0.34415	26.29	0.4869	0	0	W Broadway @ Broadway Station	33.61	0.6224	0	0
			Off-Peak	48	31	1488	288.7	0.19401	18.35	0.3823	0	0					
SL1	**Inbound** *southwest from Airport*	Silver Line Way	AM Peak	51	12	612	289.8	0.47359	33.89	0.6644	0	0					
			PM Peak	51	17	867	457.7	0.52794	50.55	0.9913	0	0	Silver Line Way Before Manuli	50.55	0.9912	0	0
			Off-Peak	51	88	4488	2032.9	0.45296	40.14	0.7870	0	0					
	Outbound *northeast from South Station*	Silver Line Way	AM Peak	51	11	561	232.2	0.41382	26.43	0.5182	0	0	South Station Silver Line	46.28	0.9075	0	0
			PM Peak	51	17	867	378.3	0.43637	29.61	0.5806	0	0					
			Off-Peak	51	88	4488	1563.2	0.34831	33.01	0.6472	0	0					
SL2	**Inbound** *northwest from Drydock Ave*	Silver Line Way	AM Peak	74	16	1184	85.6	0.07234	6.80	0.0919	0	0					
			PM Peak	74	15	1110	266.9	0.24046	31.80	0.4298	0	0	Courthouse Inbound	55.38	0.7484	0	0
			Off-Peak	74	67	4958	496.9	0.10022	24.89	0.3364	0	0					
	Outbound *southeast from South Station*	Silver Line Way	AM Peak	74	16	1184	245.3	0.20719	23.80	0.3216	0	0	South Station Silver Line	49.68	0.6714	0	0
			PM Peak	74	14	1036	53.7	0.05187	7.90	0.1067	0	0					
			Off-Peak	74	70	5180	371.0	0.07162	20.07	0.2712	0	0					
SL3	**Inbound** *south from Chelsea*	Silver Line Way	AM Peak	74	12	888	378.7	0.42642	39.04	0.5276	0	0	Eastern Avenue	67.44	0.9114	0	0
			PM Peak	74	14	1036	258.9	0.24991	32.79	0.4431	0	0					
			Off-Peak	74	86	6364	1455.8	0.22875	41.56	0.5616	0	0					
	Outbound *north from South Station*	Silver Line Way	AM Peak	74	12	888	154.1	0.17351	16.45	0.2223	0	0					
			PM Peak	74	15	1110	669.6	0.60324	63.27	0.8551	0	0					
			Off-Peak	74	85	6290	1985.1	0.31559	68.32	0.9232	0	0	Ted Williams Tunnel Ob Entrance & Exit	68.76	0.9292	0	0

Table E-10 Summary of Weekday Load & Capacity Analysis for Identified MBTA Red Line Service at Broadway Station – 2033 No-Build Condition

	Service Period	Time	Cars Per Train	Service Headways (minutes)	Trains per Hour	Passenger Crowding Threshold (MBTA SDP)	Passenger Crowding Threshold (MBTA SDP) per Service Period	V/C rate across all trips within service periods at Broadway Station		V/C rate at trip with max. capacity load along all stops across RL		
								Total Ridership	Total V/C Rate	Stop	Ridership	V/C Rate
Northbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	874.37	0.3034			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	2196.94	0.3080			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	7710.83	0.4730	Broadway	4329.86	0.5312
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	2650.40	0.8175			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	1528.31	0.5303			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	3255.01	0.4518			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	2308.21	0.2427			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	1896.74	0.2659			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	3819.20	0.1874			
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	591.49	0.3193			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	734.76	0.2266			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	931.05	0.1615			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	547.92	0.1056			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	132.26	0.0170			
Southbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	125.96	0.0437			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	397.82	0.0558			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	1475.83	0.0905			
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	692.78	0.2137			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	764.15	0.2651			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	2233.16	0.3099			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	2022.18	0.2126			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	2141.31	0.3002			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	8088.70	0.3969	Downtown Crossing	4233.29	0.5193
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	1258.55	0.6793			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	1632.23	0.5034			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	2133.97	0.3702			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	1832.71	0.3533			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	412.52	0.0530			

Table E-11 Summary of Weekday Load & Capacity Analysis for Identified MBTA Bus & Silver Line Routes – 2033 Build Condition

					V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
Route	**Direction**	**Stop Closest to RCD Site**	**Weekday Peak Period**	**Passenger Crowding Threshold (MBTA SDP)**	**Frequency of Service**	**Total Capacity**	**Total Ridership**	**V/C Rate**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**	**Stop with Max. Passenger Load across all stops**	**Max. Passenger Load**	**V/C Rate**	**# of Trips Exceeding Threshold**	**# of Passengers Over Threshold**
Route 4	**Inbound** *southeast from North Station*	Summer St opp WTC Ave	AM Peak	54	7	378	12.5	0.03300	3.40	0.0630	0	0	Congress St @ Franklin St	14.64048	0.2711	0	0
			PM Peak	54	5	270	16.6	0.06148	4.23	0.0783	0	0					
			Off-Peak	48	5	240	11.9	0.04940	4.43	0.0924	0	0					
	Outbound *northwest from Design Center*	Drydock Ave @ Design Center Place	AM Peak	54	7	378	18.7	0.04937	4.64	0.0859	0	0					
			PM Peak	54	6	324	23.6	0.07287	8.15	0.1508	0	0	Pearl St @ High St	17.63043	0.3265	0	0
			Off-Peak	48	4	192	3.0	0.01557	1.34	0.0279	0	0					
Route 7	**Inbound** *northwest from City Point*	Summer St @ Drydock Ave	AM Peak	54	16	864	652.8	0.75550	50.39	0.9332	0	0	Summer St @ Drydock Ave & Summer St @ D St	50.39138	0.9332	0	0
			PM Peak	54	16	864	144.8	0.16757	11.88	0.2200	0	0					
			Off-Peak	48	37	1776	499.8	0.28142	30.97	0.6452	0	0					
	Outbound *southeast from South Station*	Summer St @ Pappas Way	AM Peak	54	15	810	89.7	0.11071	7.69	0.1425	0	0					
			PM Peak	54	18	972	608.2	0.62573	49.15	0.9102	0	0	Summer St Opp Wtc Ave & Summer St @ E St	49.46033	0.9159	0	0
			Off-Peak	48	37	1776	437.2	0.24616	28.64	0.5967	0	0					
Route 9	**Inbound** *northwest from City Point*	West Broadway @ F St	AM Peak	54	20	1080	643.6	0.59593	44.50	0.8241	0	0					
			PM Peak	54	14	756	272.4	0.36031	24.07	0.4457	0	0					
			Off-Peak	48	57	2736	928.4	0.33931	36.80	0.7667	0	0	E Berkeley St @ Tremont St	47.56862	0.9910	0	0
	Outbound *southeast from Back Bay*	West Broadway @ F St	AM Peak	54	16	864	187.8	0.21733	14.93	0.2765	0	0					
			PM Peak	54	15	810	517.2	0.63852	44.91	0.8317	0	0	W Broadway @ Broadway Station	51.13974	0.9470	0	0
			Off-Peak	48	57	2736	955.2	0.34912	31.90	0.6645	0	0					
Route 10	**Inbound** *northwest from City Point*	Dorchester St @ Broadway	AM Peak	54	5	270	62.8	0.23249	14.02	0.2597	0	0					
			PM Peak	54	6	324	82.4	0.25437	16.56	0.3066	0	0	E Newton St @ Harrison Ave	29.17785	0.5403	0	0
			Off-Peak	48	30	1440	261.8	0.18178	19.14	0.3988	0	0					
	Outbound *southeast from Arlington*	Dorchester St @ East Broadway	AM Peak	54	4	216	61.7	0.28557	19.50	0.3612	0	0					
			PM Peak	54	6	324	73.1	0.22552	15.70	0.2907	0	0	Massachusetts Ave @ Albany St	38.82322	0.7189	0	0
			Off-Peak	48	30	1440	255.0	0.17712	17.75	0.3698	0	0					
Route 11	**Inbound** *northwest from City Point*	West Sixth St @ F St	AM Peak	54	8	432	280.5	0.64931	42.15	0.7806	0	0	W 7th @ B Street & 250 Dorchester Avenue	46.24656	0.8564	0	0
			PM Peak	54	8	432	79.9	0.18485	11.65	0.2157	0	0					
			Off-Peak	48	31	1488	307.5	0.20666	23.96	0.4991	0	0					

Route	Direction	Stop Closest to RCD Site	Weekday Peak Period	Passenger Crowding Threshold (MBTA SDP)	V/C rate across all trips within peak periods				V/C rate at trip with max. passenger load within each peak period at stop closest to RCD Site				V/C rate at trip with max. passenger load along all stops across each route				
					Frequency of Service	Total Capacity	Total Ridership	V/C Rate	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold	Stop with Max. Passenger Load across all stops	Max. Passenger Load	V/C Rate	# of Trips Exceeding Threshold	# of Passengers Over Threshold
	Outbound *southeast from South Station*	West Seventh St @ F St	AM Peak	54	8	432	94.6	0.21888	20.80	0.3852	0	0					
			PM Peak	54	8	432	149.5	0.34603	26.38	0.4886	0	0	W Broadway @ Broadway Station	33.70312	0.6241	0	0
			Off-Peak	48	31	1488	290.8	0.19546	18.47	0.3849	0	0					
SL1	**Inbound** *southwest from Airport*	Silver Line Way	AM Peak	51	12	612	317.9	0.51949	36.23	0.7104	0	0					
			PM Peak	51	17	867	493.8	0.56957	52.42	1.0279	1	1.4208	Silver Line Way Before Manuli	52.34877	1.0264	1	2
			Off-Peak	51	88	4488	2136.6	0.47607	40.69	0.7978	0	0					
	Outbound *northeast from South Station*	Silver Line Way	AM Peak	51	11	561	259.6	0.46274	28.92	0.5671	0	0	South Station Silver Line	48.67888	0.9545	0	0
			PM Peak	51	17	867	416.8	0.48074	31.60	0.6196	0	0					
			Off-Peak	51	88	4488	1676.0	0.37345	34.64	0.6792	0	0					
SL2	**Inbound** *northwest from Drydock Ave*	Silver Line Way	AM Peak	74	16	1184	113.8	0.09615	8.56	0.1157	0	0					
			PM Peak	74	15	1110	305.0	0.27473	34.54	0.4668	0	0	Courthouse Inbound	58.01276	0.7840	0	0
			Off-Peak	74	67	4958	598.5	0.12072	27.61	0.3732	0	0					
	Outbound *southeast from South Station*	Silver Line Way	AM Peak	74	16	1184	275.3	0.23248	25.67	0.3469	0	0	South Station Silver Line	51.47792	0.6956	0	0
			PM Peak	74	14	1036	92.2	0.08900	10.08	0.1362	0	0					
			Off-Peak	74	70	5180	481.3	0.09291	22.27	0.3009	0	0					
SL3	**Inbound** *south from Chelsea*	Silver Line Way	AM Peak	74	12	888	418.8	0.47163	42.56	0.5751	0	0	Eastern Avenue	68.5752	0.9267	0	0
			PM Peak	74	14	1036	313.1	0.30219	38.39	0.5188	0	0					
			Off-Peak	74	86	6364	1614.3	0.25367	45.63	0.6167	0	0					
	Outbound *north from South Station*	Silver Line Way	AM Peak	74	12	888	198.4	0.22338	20.13	0.2721	0	0					
			PM Peak	74	15	1110	727.5	0.65537	67.20	0.9081	0	0					
			Off-Peak	74	85	6290	2148.3	0.34154	72.49	0.9796	0	0	Ted Williams Tunnel Ob Entrance & Exit	70.10034	0.9473	0	0

Table E-12 Summary of Weekday Load & Capacity Analysis for Identified MBTA Red Line Service at Broadway Station – 2033 Build Condition

	Service Period	Time	Cars Per Train	Service Headways (minutes)	Trains per Hour	Passenger Crowding Threshold (MBTA SDP)	Passenger Crowding Threshold (MBTA SDP) per Service Period	V/C rate across all trips within service periods at Broadway Station		V/C rate at trip with max. capacity load along all stops across RL		
								Total Ridership	Total V/C Rate	Stop	Ridership	V/C Rate
Northbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	889.43	0.3086			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	2250.59	0.3155			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	7911.08	0.4853	Broadway	4424.784	0.5428
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	2706.00	0.8346			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	1573.19	0.5459			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	3382.66	0.4695			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	2382.73	0.2506			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	1956.28	0.2743			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	4077.48	0.2001			
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	646.73	0.3491			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	825.67	0.2547			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	1046.32	0.1815			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	597.67	0.1152			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	149.65	0.0192			
Southbound	Sunrise	5:00 AM - 5:59 AM	6	9.0	6.7	72	2882	140.59	0.0488			
	Early AM	6:00 AM - 6:59 AM	6	8.0	7.5	159	7133	449.95	0.0631			
	AM Peak	7:00 AM - 8:59 AM	6	7.0	8.6	159	16303	1670.40	0.1025			
	Midday Base (transition 1)	9:00 AM - 9:59 AM	6	8.0	7.5	72	3242	746.80	0.2303			
	Midday Base (transition 2)	10:00 AM - 10:59 AM	6	9.0	6.7	72	2882	807.76	0.2803			
	Midday Base	11:00 AM - 1:29 PM	6	9.0	6.7	72	7205	2357.19	0.3272			
	Midday School	1:30 PM - 2:59 PM	6	9.0	6.7	159	9510	2094.58	0.2203			
	Midday School (transition)	3:00 PM - 3:59 PM	6	8.0	7.5	159	7133	2199.16	0.3083			
	PM Peak	4:00 PM - 6:30 PM	6	7.0	8.6	159	20379	8339.65	0.4092	Downtown Crossing	4328.272	0.5310
	Evening (transition 1)	6:30 PM - 6:59 PM	6	7.0	8.6	72	1853	1312.22	0.7083			
	Evening (transition 2)	7:00 PM - 7:59 PM	6	8.0	7.5	72	3242	1720.55	0.5307			
	Evening	8:00 PM - 9:59 PM	6	9.0	6.7	72	5764	2245.96	0.3897			
	Late Evening	10:00 PM - 11:59 PM	6	10.0	6.0	72	5188	1881.05	0.3626			
	Night	12:00 AM - 2:59 AM	6	10.0	6.0	72	7781	429.41	0.0552			

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-001
Date: 12/16/2025

Data - Total

NS/EW Streets:	S Boston Byp				S Boston Byp				Richards St/Cypher St				Richards St/Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	15	48	30	0	7	16	21	0	5	5	6	0	9	4	6	0	172
6:15 AM	16	45	18	0	20	16	37	0	12	1	4	0	9	2	14	0	194
6:30 AM	14	44	21	0	10	18	29	0	9	3	17	0	10	3	18	0	196
6:45 AM	18	44	25	0	20	25	48	0	10	3	10	0	8	3	19	0	233
7:00 AM	14	41	31	0	13	29	40	0	11	8	9	0	11	6	26	0	239
7:15 AM	21	57	40	0	19	20	46	0	9	7	4	0	17	4	37	0	281
7:30 AM	11	57	31	0	14	22	42	0	9	5	4	0	17	3	36	0	251
7:45 AM	18	59	45	0	24	25	51	0	18	6	3	0	9	13	47	0	318
8:00 AM	23	65	35	0	16	36	54	0	21	10	4	0	12	12	55	0	343
8:15 AM	24	60	37	0	33	22	37	0	18	12	12	0	15	13	59	0	342
8:30 AM	29	48	38	0	28	23	55	0	13	8	6	0	17	11	57	0	333
8:45 AM	24	55	32	0	22	25	55	0	9	11	3	0	14	11	49	0	310
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	227	623	383	0	226	277	515	0	144	79	82	0	148	85	423	0	3212
APPROACH %'s :	18.41%	50.53%	31.06%	0.00%	22.20%	27.21%	50.59%	0.00%	47.21%	25.90%	26.89%	0.00%	22.56%	12.96%	64.48%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	94	232	155	0	101	106	197	0	70	36	25	0	53	49	218	0	1336
PEAK HR FACTOR :	0.810	0.892	0.861	0.000	0.765	0.736	0.895	0.000	0.833	0.750	0.521	0.000	0.779	0.942	0.924	0.000	0.974
	0.978				0.953				0.780				0.920				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	53	19	0	45	88	49	0	22	11	11	0	4	8	13	0	334
4:15 PM	5	73	16	0	67	108	44	0	24	29	8	0	9	9	20	0	412
4:30 PM	6	81	25	0	27	65	28	0	29	16	10	0	15	5	23	0	330
4:45 PM	7	78	20	0	36	74	36	0	23	10	9	0	13	13	24	0	343
5:00 PM	9	97	24	0	44	81	49	0	22	16	10	0	11	5	22	0	390
5:15 PM	14	73	39	0	59	89	55	0	44	22	8	0	8	6	28	0	445
5:30 PM	9	52	22	0	67	74	74	0	24	11	8	0	13	8	15	0	377
5:45 PM	13	68	29	0	60	74	62	0	26	15	17	0	13	4	22	0	403
6:00 PM	16	56	36	0	69	68	63	0	24	16	13	0	10	1	25	0	397
6:15 PM	10	44	28	0	63	79	48	0	23	12	8	0	14	2	32	0	363
6:30 PM	10	52	33	0	69	67	43	0	24	2	12	0	7	6	21	0	346
6:45 PM	12	39	30	0	59	44	55	0	15	7	8	0	5	2	18	0	294
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	122	766	321	0	665	911	606	0	300	167	122	0	122	69	263	0	4434
APPROACH %'s :	10.09%	63.36%	26.55%	0.00%	30.48%	41.75%	27.77%	0.00%	50.93%	28.35%	20.71%	0.00%	26.87%	15.20%	57.93%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	52	249	126	0	255	305	254	0	118	64	46	0	44	19	90	0	1622
PEAK HR FACTOR :	0.813	0.853	0.808	0.000	0.924	0.857	0.858	0.000	0.670	0.727	0.676	0.000	0.846	0.594	0.804	0.000	0.911
	0.847				0.947				0.770				0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-001
Date: 12/16/2025

Data - Cars

NS/EW Streets:	S Boston Byp				S Boston Byp				Richards St/Cypher St				Richards St/Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	15	42	28	0	7	16	20	0	5	5	5	0	8	3	6	0	160
6:15 AM	15	41	12	0	18	15	31	0	10	1	2	0	5	2	14	0	166
6:30 AM	12	34	17	0	9	15	28	0	8	2	15	0	5	2	17	0	164
6:45 AM	17	37	22	0	18	20	44	0	9	2	8	0	7	3	18	0	205
7:00 AM	14	36	26	0	13	27	36	0	9	8	7	0	9	5	23	0	213
7:15 AM	20	53	31	0	19	13	44	0	9	6	3	0	14	3	36	0	251
7:30 AM	11	53	24	0	14	20	38	0	8	4	2	0	9	1	35	0	219
7:45 AM	16	50	38	0	23	22	48	0	16	5	3	0	8	11	44	0	284
8:00 AM	22	58	28	0	14	29	47	0	19	10	3	0	11	12	52	0	305
8:15 AM	24	52	33	0	33	22	36	0	17	12	12	0	9	12	59	0	321
8:30 AM	28	39	34	0	26	19	52	0	12	8	5	0	9	11	55	0	298
8:45 AM	21	49	28	0	19	23	53	0	9	11	3	0	11	7	49	0	283
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	215	544	321	0	213	241	477	0	131	74	68	0	105	72	408	0	2869
APPROACH %'s :	19.91%	50.37%	29.72%	0.00%	22.88%	25.89%	51.24%	0.00%	47.99%	27.11%	24.91%	0.00%	17.95%	12.31%	69.74%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	90	199	133	0	96	92	183	0	64	35	23	0	37	46	210	0	1208
PEAK HR FACTOR :	0.804	0.858	0.875	0.000	0.727	0.793	0.880	0.000	0.842	0.729	0.479	0.000	0.841	0.958	0.890	0.000	0.941
	0.968				0.956				0.744				0.916				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	48	19	0	44	86	49	0	22	11	10	0	3	7	11	0	321
4:15 PM	5	63	15	0	64	103	44	0	23	28	7	0	9	7	20	0	388
4:30 PM	6	77	25	0	27	62	28	0	28	16	9	0	14	4	23	0	319
4:45 PM	7	77	18	0	35	74	34	0	23	10	9	0	10	13	24	0	334
5:00 PM	9	95	24	0	44	76	46	0	21	16	10	0	11	4	22	0	378
5:15 PM	14	71	39	0	58	87	55	0	43	21	8	0	8	6	28	0	438
5:30 PM	9	49	20	0	66	72	72	0	24	10	8	0	13	8	15	0	366
5:45 PM	13	68	29	0	60	71	61	0	25	14	17	0	13	4	22	0	397
6:00 PM	15	55	32	0	69	66	62	0	23	15	13	0	10	1	25	0	386
6:15 PM	9	42	27	0	63	76	46	0	23	11	8	0	12	2	32	0	351
6:30 PM	10	50	32	0	68	66	43	0	24	2	12	0	6	6	21	0	340
6:45 PM	11	35	29	0	58	42	53	0	15	7	7	0	5	2	17	0	281
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	119	730	309	0	656	881	593	0	294	161	118	0	114	64	260	0	4299
APPROACH %'s :	10.28%	63.04%	26.68%	0.00%	30.80%	41.36%	27.84%	0.00%	51.31%	28.10%	20.59%	0.00%	26.03%	14.61%	59.36%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	51	243	120	0	253	296	250	0	115	60	46	0	44	19	90	0	1587
PEAK HR FACTOR :	0.850	0.856	0.769	0.000	0.917	0.851	0.868	0.000	0.669	0.714	0.676	0.000	0.846	0.594	0.804	0.000	0.906
	0.835				0.951				0.767				0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-001
Date: 12/16/2025

Data - Buses

NS/EW Streets:	S Boston Byp				S Boston Byp				Richards St/Cypher St				Richards St/Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
6:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:45 AM	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
8:00 AM	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	3	0	1	2	4	0	2	0	0	0	1	0	0	0	22
APPROACH %'s :	0.00%	75.00%	25.00%	0.00%	14.29%	28.57%	57.14%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	2	1	0	1	0	3	0	1	0	0	0	0	0	0	0	8
PEAK HR FACTOR :	0.000	0.500	0.250	0.000	0.250	0.000	0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
		0.375				0.500				0.250							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	4
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
5:00 PM	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	1	0	5	11	2	0	2	1	0	0	1	0	0	0	27
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	27.78%	61.11%	11.11%	0.00%	66.67%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	1	0	2	2	1	0	1	1	0	0	0	0	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.500	0.500	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.667
		0.250				0.625				0.500							

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-001
Date: 12/16/2025

Data - HT

NS/EW Streets:	S Boston Byp				S Boston Byp				Richards St/Cypher St				Richards St/Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	5	2	0	0	0	1	0	0	0	1	0	1	1	0	0	11
6:15 AM	1	4	6	0	2	1	5	0	2	0	2	0	4	0	0	0	27
6:30 AM	2	7	4	0	1	3	1	0	0	1	2	0	5	1	1	0	28
6:45 AM	1	6	3	0	2	4	4	0	1	1	2	0	1	0	1	0	26
7:00 AM	0	4	4	0	0	2	4	0	2	0	2	0	2	1	3	0	24
7:15 AM	1	3	9	0	0	7	2	0	0	1	1	0	3	1	1	0	29
7:30 AM	0	4	7	0	0	1	4	0	1	1	2	0	7	2	1	0	30
7:45 AM	2	8	7	0	1	3	2	0	1	1	0	0	1	2	3	0	31
8:00 AM	1	6	6	0	1	7	6	0	2	0	1	0	1	0	3	0	34
8:15 AM	0	8	4	0	0	0	0	0	1	0	0	0	6	1	0	0	20
8:30 AM	1	9	4	0	2	4	3	0	1	0	1	0	8	0	2	0	35
8:45 AM	3	6	3	0	3	2	2	0	0	0	0	0	3	4	0	0	26
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	70	59	0	12	34	34	0	11	5	14	0	42	13	15	0	321
APPROACH %'s :	8.51%	49.65%	41.84%	0.00%	15.00%	42.50%	42.50%	0.00%	36.67%	16.67%	46.67%	0.00%	60.00%	18.57%	21.43%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	4	31	21	0	4	14	11	0	5	1	2	0	16	3	8	0	120
PEAK HR FACTOR :	0.500	0.861	0.750	0.000	0.500	0.500	0.458	0.000	0.625	0.250	0.500	0.000	0.500	0.375	0.667	0.000	0.857
	0.824				0.518				0.667				0.675				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	5	0	0	0	1	0	0	0	0	1	0	1	1	2	0	11
4:15 PM	0	8	1	0	3	3	0	0	1	1	1	0	0	2	0	0	20
4:30 PM	0	3	0	0	0	1	0	0	0	0	1	0	1	1	0	0	7
4:45 PM	0	1	2	0	0	0	2	0	0	0	0	0	2	0	0	0	7
5:00 PM	0	2	0	0	0	2	2	0	1	0	0	0	0	1	0	0	8
5:15 PM	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	5
5:30 PM	0	3	1	0	0	2	1	0	0	1	0	0	0	0	0	0	8
5:45 PM	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	4
6:00 PM	1	1	4	0	0	1	1	0	1	1	0	0	0	0	0	0	10
6:15 PM	1	2	1	0	0	2	2	0	0	1	0	0	2	0	0	0	11
6:30 PM	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	5
6:45 PM	1	4	1	0	0	2	2	0	0	0	1	0	0	0	1	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	32	11	0	4	19	11	0	4	5	4	0	7	5	3	0	108
APPROACH %'s :	6.52%	69.57%	23.91%	0.00%	11.76%	55.88%	32.35%	0.00%	30.77%	38.46%	30.77%	0.00%	46.67%	33.33%	20.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	6	5	0	0	7	3	0	2	3	0	0	0	0	0	0	27
PEAK HR FACTOR :	0.250	0.500	0.313	0.000	0.000	0.875	0.750	0.000	0.500	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.675
	0.500				0.833				0.625								

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-001
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	S Boston Byp				S Boston Byp				Richards St/Cypher St				Richards St/Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	7
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	6
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.333	0.000	0.000	0.375
									0.500				0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	5	0	0	0	8	0	0	14
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.500	0.000	0.000	0.583
									0.375				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Boston Byp & Richards St/Cypher St
City: Boston

Project ID: 25-430193-001
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	S Boston Byp		S Boston Byp		Richards St/Cypher St		Richards St/Cypher St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	1	8	0	0	0	0	0	9
7:00 AM	1	1	0	0	0	0	0	0	2
7:15 AM	1	1	0	1	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	1	2	0	0	0	0	4
8:00 AM	0	1	0	2	0	0	0	0	3
8:15 AM	0	2	1	2	0	0	0	0	5
8:30 AM	0	0	0	0	0	1	0	0	1
8:45 AM	1	0	2	2	0	0	0	1	6
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	7	12	9	0	1	0	1	33
APPROACH %'s :	30.00%	70.00%	57.14%	42.86%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	4	2	6	0	1	0	0	13
PEAK HR FACTOR :		0.500	0.500	0.750		0.250			0.650
	0.500		0.667		0.250				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	0	1	1	1	0	0	0	0	3
4:30 PM	1	1	4	0	0	0	0	1	7
4:45 PM	1	0	3	1	0	0	0	0	5
5:00 PM	0	1	2	0	0	0	0	0	3
5:15 PM	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	2	0	0	2
5:45 PM	0	0	1	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	1	0	0	0	0	1
6:30 PM	0	0	1	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	1	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	3	13	4	0	2	0	2	26
APPROACH %'s :	40.00%	60.00%	76.47%	23.53%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	0	0	2	0	0	2	0	0	4
PEAK HR FACTOR :			0.500			0.250			0.500
			0.500		0.250				

Prepared by National Data & Surveying Services

S Boston Byp & Richards St/Cypher St

Peak Hour Turning Movement Count

ID: 25-430193-001
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (S Boston Byp)

AM	197	106	101	0	520	AM
NOON	0	0	0	0	0	NOON
PM	254	305	255	0	457	PM
	0	1	1	0		

EASTBOUND (Richards St/Cypher St)

AM	NOON	PM	
340	0	325	
0	0	0	0
70	0	118	1
36	0	64	1
25	0	46	0
AM	NOON	PM	

WESTBOUND (Richards St/Cypher St)

PM	NOON	AM	
90	0	218	1
19	0	49	1
44	0	53	1
0	0	0	0
445	0	292	
PM	NOON	AM	

CONTROL

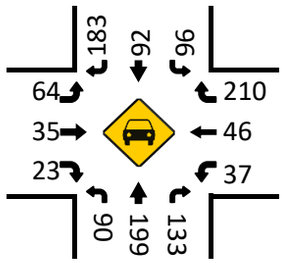
Signalized

TEV	1336 AM	0 NOON	1622 PM
PHF	0.97		0.91

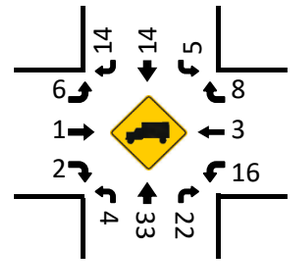
NORTHBOUND (S Boston Byp)

	0	0	1	1		
PM	395	0	52	249	126	PM
NOON	0	0	0	0	0	NOON
AM	184	0	94	232	155	AM

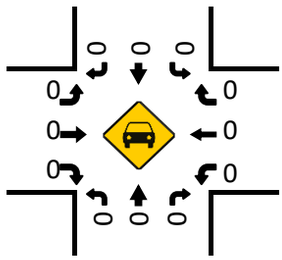
Cars (AM)



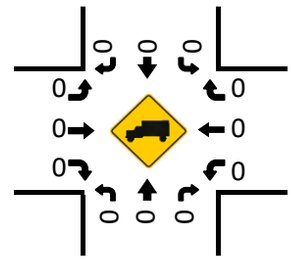
Total Trucks (AM)



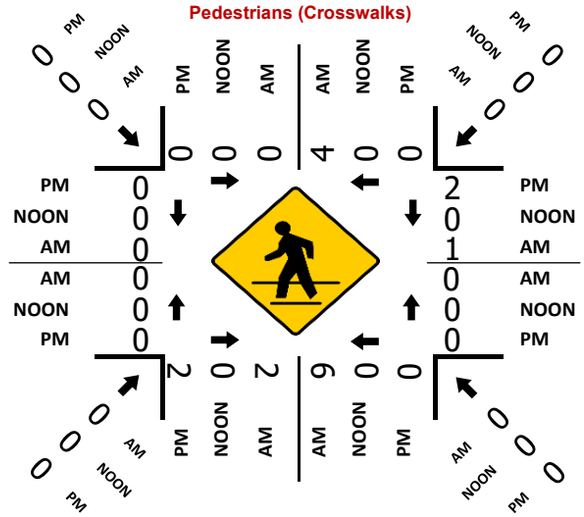
Cars (NOON)



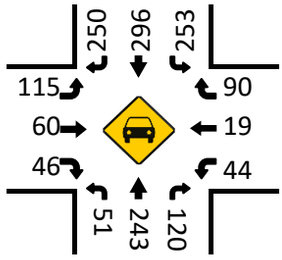
Total Trucks (NOON)



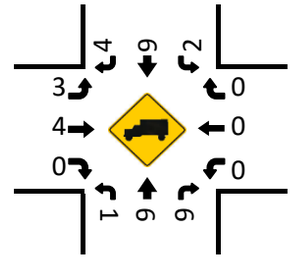
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-001
Location: S Boston Byp & Richards St/Cypher St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	S Boston Byp Northbound						S Boston Byp Southbound						Richards St/Cypher St Eastbound						Richards St/Cypher St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	15	48	30	0	0	93	7	16	21	0	0	44	5	5	6	0	0	16	9	4	6	0	0	19	172
6:15 AM	16	45	18	0	0	79	20	16	37	0	0	73	12	1	4	0	0	17	9	2	14	0	0	25	194
6:30 AM	14	44	21	0	0	79	10	18	29	0	0	57	9	3	17	0	0	29	10	3	18	0	0	31	196
6:45 AM	18	44	25	0	8	87	20	25	48	0	1	93	10	3	10	0	0	23	8	3	19	0	0	30	233
Total	63	181	94	0	8	338	57	75	135	0	1	267	36	12	37	0	0	85	36	12	57	0	0	105	795
7:00 AM	14	41	31	0	0	86	13	29	40	0	2	82	11	8	9	0	0	28	11	6	26	0	0	43	239
7:15 AM	21	57	40	0	1	118	19	20	46	0	2	85	9	7	4	0	0	20	17	4	37	0	0	58	281
7:30 AM	11	57	31	0	0	99	14	22	42	0	0	78	9	5	4	0	0	18	17	3	36	0	0	56	251
7:45 AM	18	59	45	0	3	122	24	25	51	0	1	100	18	6	3	0	0	27	9	13	47	0	0	69	318
Total	64	214	147	0	4	425	70	96	179	0	5	345	47	26	20	0	0	93	54	26	146	0	0	226	1089
8:00 AM	23	65	35	0	2	123	16	36	54	0	1	106	21	10	4	0	0	35	12	12	55	0	0	79	343
8:15 AM	24	60	37	0	3	121	33	22	37	0	2	92	18	12	12	0	0	42	15	13	59	0	0	87	342
8:30 AM	29	48	38	0	0	115	28	23	55	0	0	106	13	8	6	0	0	27	17	11	57	0	1	85	333
8:45 AM	24	55	32	0	4	111	22	25	55	0	1	102	9	11	3	0	1	23	14	11	49	0	0	74	310
Total	100	228	142	0	9	470	99	106	201	0	4	406	61	41	25	0	1	127	58	47	220	0	1	325	1328
BREAK																									
4:00 PM	11	53	19	0	1	83	45	88	49	0	0	182	22	11	11	0	0	44	4	8	13	0	0	25	334
4:15 PM	5	73	16	0	2	94	67	108	44	0	1	219	24	29	8	0	0	61	9	9	20	0	0	38	412
4:30 PM	6	81	25	0	4	112	27	65	28	0	2	120	29	16	10	0	1	55	15	5	23	0	0	43	330
4:45 PM	7	78	20	0	4	105	36	74	36	0	1	146	23	10	9	0	0	42	13	13	24	0	0	50	343
Total	29	285	80	0	11	394	175	335	157	0	4	667	98	66	38	0	1	202	41	35	80	0	0	156	1419
5:00 PM	9	97	24	0	2	130	44	81	49	0	1	174	22	16	10	0	0	48	11	5	22	0	0	38	390
5:15 PM	14	73	39	0	1	126	59	89	55	0	0	203	44	22	8	0	0	74	8	6	28	0	0	42	445
5:30 PM	9	52	22	0	0	83	67	74	74	0	0	215	24	11	8	0	0	43	13	8	15	0	2	36	377
5:45 PM	13	68	29	0	1	110	60	74	62	0	0	196	26	15	17	0	0	58	13	4	22	0	0	39	403
Total	45	290	114	0	4	449	230	318	240	0	1	788	116	64	43	0	0	223	45	23	87	0	2	155	1615
6:00 PM	16	56	36	0	0	108	69	68	63	0	0	200	24	16	13	0	0	53	10	1	25	0	0	36	397
6:15 PM	10	44	28	0	1	82	63	79	48	0	0	190	23	12	8	0	0	43	14	2	32	0	0	48	363
6:30 PM	10	52	33	0	1	95	69	67	43	0	0	179	24	2	12	0	0	38	7	6	21	0	0	34	346
6:45 PM	12	39	30	0	0	81	59	44	55	0	0	158	15	7	8	0	1	30	5	2	18	0	0	25	294
Total	48	191	127	0	2	366	260	258	209	0	0	727	86	37	41	0	1	164	36	11	96	0	0	143	1400
Grand Total	349	1389	704	0	38	2442	891	1188	1121	0	15	3200	444	246	204	0	3	894	270	154	686	0	3	1110	7646
Apprch %	14.3	56.9	28.8	0.0	1.6		27.8	37.1	35.0	0.0	0.5		49.7	27.5	22.8	0.0	0.3		24.3	13.9	61.8	0.0	0.3		
Total %	4.6	18.2	9.2	0.0	0.5	31.9	11.7	15.5	14.7	0.0	0.2	41.9	5.8	3.2	2.7	0.0	0.0	11.7	3.5	2.0	9.0	0.0	0.0	14.5	
Cars, PU, Vans	334	1274	630	0		2238	869	1122	1070	0		3061	425	235	186	0		846	219	136	668	0		1023	7168
% Cars, PU, Vans	95.7	91.7	89.5	0.0		91.6	97.5	94.4	95.5	0.0		95.7	95.7	95.5	91.2	0.0		94.6	81.1	88.3	97.4	0.0		92.2	93.7
Buses	0	13	4	0		17	6	13	6	0		25	4	1	0	0		5	2	0	0	0		2	49
%Buses	0.0	0.9	0.6	0.0		0.7	0.7	1.1	0.5	0.0		0.8	0.9	0.4	0.0	0.0		0.6	0.7	0.0	0.0	0.0		0.2	0.6
Heavy Trucks	15	102	70	0		187	16	53	45	0		114	15	10	18	0		43	49	18	18	0		85	429
%Heavy Trucks	4.3	7.3	9.9	0.0		7.7	1.8	4.5	4.0	0.0		3.6	3.4	4.1	8.8	0.0		4.8	18.1	11.7	2.6	0.0		7.7	5.6

Project ID: 25-430193-001
Location: S Boston Byp & Richards St/Cypher St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	S Boston Byp Northbound					S Boston Byp Southbound					Richards St/Cypher St Eastbound					Richards St/Cypher St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	18	59	45	0	122	24	25	51	0	100	18	6	3	0	27	9	13	47	0	69	318
8:00 AM	23	65	35	0	123	16	36	54	0	106	21	10	4	0	35	12	12	55	0	79	343
8:15 AM	24	60	37	0	121	33	22	37	0	92	18	12	12	0	42	15	13	59	0	87	342
8:30 AM	29	48	38	0	115	28	23	55	0	106	13	8	6	0	27	17	11	57	0	85	333
Total Volume	94	232	155	0	481	101	106	197	0	404	70	36	25	0	131	53	49	218	0	320	1336
% App. Total	19.5	48.2	32.2	0.0	100	25.0	26.2	48.8	0.0	100	53.4	27.5	19.1	0.0	100	16.6	15.3	68.1	0.0	100	
PHF					0.978					0.953					0.780					0.920	0.974
Cars, PU, Vans	90	199	133	0	422	96	92	183	0	371	64	35	23	0	122	37	46	210	0	293	1208
% Cars, PU, Vans	95.7	85.8	85.8	0.0	87.7	95.0	86.8	92.9	0.0	91.8	91.4	97.2	92.0	0.0	93.1	69.8	93.9	96.3	0.0	91.6	90.4
Buses	0	2	1	0	3	1	0	3	0	4	1	0	0	0	1	0	0	0	0	0	8
%Buses	0.0	0.9	0.6	0.0	0.6	1.0	0.0	1.5	0.0	1.0	1.4	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.6
Heavy Trucks	4	31	21	0	56	4	14	11	0	29	5	1	2	0	8	16	3	8	0	27	120
%Heavy Trucks	4.3	13.4	13.5	0.0	11.6	4.0	13.2	5.6	0.0	7.2	7.1	2.8	8.0	0.0	6.1	30.2	6.1	3.7	0.0	8.4	9.0

PM

	S Boston Byp Northbound					S Boston Byp Southbound					Richards St/Cypher St Eastbound					Richards St/Cypher St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	14	73	39	0	126	59	89	55	0	203	44	22	8	0	74	8	6	28	0	42	445
5:30 PM	9	52	22	0	83	67	74	74	0	215	24	11	8	0	43	13	8	15	0	36	377
5:45 PM	13	68	29	0	110	60	74	62	0	196	26	15	17	0	58	13	4	22	0	39	403
6:00 PM	16	56	36	0	108	69	68	63	0	200	24	16	13	0	53	10	1	25	0	36	397
Total Volume	52	249	126	0	427	255	305	254	0	814	118	64	46	0	228	44	19	90	0	153	1622
% App. Total	12.2	58.3	29.5	0.0	100	31.3	37.5	31.2	0.0	100	51.8	28.1	20.2	0.0	100	28.8	12.4	58.8	0.0	100	
PHF					0.847					0.947					0.770					0.911	0.911
Cars, PU, Vans	51	243	120	0	414	253	296	250	0	799	115	60	46	0	221	44	19	90	0	153	1587
% Cars, PU, Vans	98.1	97.6	95.2	0.0	97.0	99.2	97.0	98.4	0.0	98.2	97.5	93.8	100.0	0.0	96.9	100.0	100.0	100.0	0.0	100.0	97.8
Buses	0	0	1	0	1	2	2	1	0	5	1	1	0	0	2	0	0	0	0	0	8
%Buses	0.0	0.0	0.8	0.0	0.2	0.8	0.7	0.4	0.0	0.6	0.8	1.6	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.5
Heavy Trucks	1	6	5	0	12	0	7	3	0	10	2	3	0	0	5	0	0	0	0	0	27
%Heavy Trucks	1.9	2.4	4.0	0.0	2.8	0.0	2.3	1.2	0.0	1.2	1.7	4.7	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	1.7

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-002
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				Cypher St/New Cypher St				Cypher St/New Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	7	9	0	0	0	3	6	0	15	10	18	0	0	1	2	0	71
6:15 AM	10	13	0	0	3	11	1	0	11	11	18	0	0	5	1	0	84
6:30 AM	18	10	0	0	3	16	5	0	7	13	14	0	0	4	1	0	91
6:45 AM	13	19	0	0	3	5	6	0	9	9	17	0	0	2	3	0	86
7:00 AM	14	21	0	0	5	9	9	0	24	14	25	0	1	4	2	0	128
7:15 AM	25	29	0	0	2	6	9	0	14	21	25	0	0	4	2	0	137
7:30 AM	34	30	0	0	6	7	2	0	15	12	27	0	0	4	0	0	137
7:45 AM	31	29	0	0	5	13	8	0	19	20	29	0	0	11	2	0	167
8:00 AM	36	47	0	0	8	7	8	0	16	21	27	0	0	9	2	0	181
8:15 AM	38	39	0	0	5	9	6	0	19	18	42	0	0	6	6	0	188
8:30 AM	38	42	0	0	5	11	7	0	20	23	25	0	0	9	0	0	180
8:45 AM	33	31	0	0	0	9	10	0	18	24	24	0	0	8	2	0	159
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	297	319	0	0	45	106	77	0	187	196	291	0	1	67	23	0	1609
APPROACH %'s :	48.21%	51.79%	0.00%	0.00%	19.74%	46.49%	33.77%	0.00%	27.74%	29.08%	43.18%	0.00%	1.10%	73.63%	25.27%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	143	157	0	0	23	40	29	0	74	82	123	0	0	35	10	0	716
PEAK HR FACTOR :	0.941	0.835	0.000	0.000	0.719	0.769	0.906	0.000	0.925	0.891	0.732	0.000	0.000	0.795	0.417	0.000	0.952
	0.904				0.885				0.883				0.865				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	9	0	0	19	14	2	0	9	31	41	0	0	4	2	0	144
4:15 PM	6	19	0	0	17	17	12	0	13	27	68	0	0	3	0	0	182
4:30 PM	15	16	0	0	15	21	8	0	17	23	32	0	0	4	2	0	153
4:45 PM	20	21	1	0	5	21	9	0	15	17	44	0	0	6	2	0	161
5:00 PM	15	26	0	0	12	23	8	0	9	24	49	0	0	2	0	0	168
5:15 PM	16	18	0	0	5	17	7	0	14	36	66	0	0	5	0	0	184
5:30 PM	10	23	0	0	20	22	13	0	12	34	57	0	0	2	0	0	193
5:45 PM	12	12	0	0	16	27	10	0	10	33	66	0	0	3	0	0	189
6:00 PM	16	17	0	0	18	25	7	0	16	42	70	0	1	2	1	0	215
6:15 PM	15	20	0	0	11	21	8	0	14	32	56	0	0	8	0	0	185
6:30 PM	12	16	0	0	5	15	3	0	11	34	59	0	0	3	1	0	159
6:45 PM	8	16	1	0	2	12	5	0	9	33	58	0	0	1	1	0	146
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	158	213	2	0	145	235	92	0	149	366	666	0	1	43	9	0	2079
APPROACH %'s :	42.36%	57.10%	0.54%	0.00%	30.72%	49.79%	19.49%	0.00%	12.62%	30.99%	56.39%	0.00%	1.89%	81.13%	16.98%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	53	72	0	0	65	95	38	0	52	141	249	0	1	15	1	0	782
PEAK HR FACTOR :	0.828	0.783	0.000	0.000	0.813	0.880	0.731	0.000	0.813	0.839	0.889	0.000	0.250	0.469	0.250	0.000	0.909
	0.893				0.900				0.863				0.531				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-002
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				Cypher St/New Cypher St				Cypher St/New Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	6	7	0	0	0	3	5	0	14	10	17	0	0	1	2	0	65
6:15 AM	7	10	0	0	3	7	1	0	11	7	14	0	0	4	1	0	65
6:30 AM	15	10	0	0	3	12	5	0	6	10	11	0	0	0	1	0	73
6:45 AM	11	16	0	0	3	5	5	0	9	8	14	0	0	2	3	0	76
7:00 AM	11	19	0	0	5	8	6	0	24	13	20	0	1	4	2	0	113
7:15 AM	25	27	0	0	2	5	7	0	10	18	23	0	0	4	1	0	122
7:30 AM	33	28	0	0	6	5	0	0	13	11	21	0	0	2	0	0	119
7:45 AM	28	28	0	0	5	9	5	0	17	17	27	0	0	11	2	0	149
8:00 AM	35	42	0	0	7	5	7	0	15	17	24	0	0	9	2	0	163
8:15 AM	35	37	0	0	5	5	5	0	17	16	40	0	0	4	6	0	170
8:30 AM	36	42	0	0	5	10	6	0	20	20	22	0	0	5	0	0	166
8:45 AM	33	29	0	0	0	9	7	0	17	23	21	0	0	4	2	0	145
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	275	295	0	0	44	83	59	0	173	170	254	0	1	50	22	0	1426
APPROACH %'s :	48.25%	51.75%	0.00%	0.00%	23.66%	44.62%	31.72%	0.00%	28.98%	28.48%	42.55%	0.00%	1.37%	68.49%	30.14%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	134	149	0	0	22	29	23	0	69	70	113	0	0	29	10	0	648
PEAK HR FACTOR :	0.931	0.887	0.000	0.000	0.786	0.725	0.821	0.000	0.863	0.875	0.706	0.000	0.000	0.659	0.417	0.000	0.953
	0.907				0.881				0.863				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	9	0	0	19	13	2	0	9	30	39	0	0	3	2	0	137
4:15 PM	6	18	0	0	17	16	10	0	13	23	68	0	0	3	0	0	174
4:30 PM	14	16	0	0	15	21	6	0	17	23	32	0	0	4	2	0	150
4:45 PM	19	19	1	0	5	20	8	0	15	15	43	0	0	6	2	0	153
5:00 PM	14	24	0	0	12	23	8	0	9	24	49	0	0	2	0	0	165
5:15 PM	16	18	0	0	5	17	7	0	14	36	64	0	0	5	0	0	182
5:30 PM	8	22	0	0	20	21	13	0	11	32	56	0	0	2	0	0	185
5:45 PM	11	12	0	0	16	27	10	0	10	32	66	0	0	3	0	0	187
6:00 PM	16	16	0	0	18	25	7	0	15	41	67	0	1	2	1	0	209
6:15 PM	15	20	0	0	11	21	8	0	13	31	55	0	0	6	0	0	180
6:30 PM	11	16	0	0	4	14	3	0	11	34	58	0	0	3	1	0	155
6:45 PM	8	16	1	0	2	12	5	0	9	31	57	0	0	1	1	0	143
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	149	206	2	0	144	230	87	0	146	352	654	0	1	40	9	0	2020
APPROACH %'s :	41.74%	57.70%	0.56%	0.00%	31.24%	49.89%	18.87%	0.00%	12.67%	30.56%	56.77%	0.00%	2.00%	80.00%	18.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	50	70	0	0	65	94	38	0	49	136	244	0	1	13	1	0	761
PEAK HR FACTOR :	0.781	0.795	0.000	0.000	0.813	0.870	0.731	0.000	0.817	0.829	0.910	0.000	0.250	0.542	0.250	0.000	0.910
	0.857				0.912				0.872				0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-002
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				Cypher St/New Cypher St				Cypher St/New Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	4	0	0	1	0	3	0	0	0	0	0	9
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	25.00%	0.00%	75.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.625
						0.375				0.250							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	3	0	0	0	4	3	0	0	0	0	0	11
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	57.14%	42.86%	0.00%					
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.333
						0.250				0.375							

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-002
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				Cypher St/New Cypher St				Cypher St/New Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	1	2	0	0	0	0	1	0	1	0	1	0	0	0	0	0	6
6:15 AM	3	3	0	0	0	3	0	0	0	4	4	0	0	1	0	0	18
6:30 AM	3	0	0	0	0	4	0	0	1	3	3	0	0	4	0	0	18
6:45 AM	2	3	0	0	0	0	1	0	0	1	3	0	0	0	0	0	10
7:00 AM	3	2	0	0	0	1	3	0	0	1	4	0	0	0	0	0	14
7:15 AM	0	2	0	0	0	1	2	0	4	3	2	0	0	0	1	0	15
7:30 AM	0	2	0	0	0	2	2	0	2	1	6	0	0	2	0	0	17
7:45 AM	3	1	0	0	0	2	3	0	2	3	2	0	0	0	0	0	16
8:00 AM	1	5	0	0	1	2	1	0	0	4	2	0	0	0	0	0	16
8:15 AM	3	2	0	0	0	3	1	0	2	2	2	0	0	2	0	0	17
8:30 AM	2	0	0	0	0	1	1	0	0	3	3	0	0	4	0	0	14
8:45 AM	0	2	0	0	0	0	3	0	1	1	2	0	0	4	0	0	13
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	24	0	0	1	19	18	0	13	26	34	0	0	17	1	0	174
APPROACH %'s :	46.67%	53.33%	0.00%	0.00%	2.63%	50.00%	47.37%	0.00%	17.81%	35.62%	46.58%	0.00%	0.00%	94.44%	5.56%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	9	8	0	0	1	8	6	0	4	12	9	0	0	6	0	0	63
PEAK HR FACTOR :	0.750	0.400	0.000	0.000	0.250	0.667	0.500	0.000	0.500	0.750	0.750	0.000	0.000	0.375	0.000	0.000	0.926
	0.708				0.750				0.893				0.375				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	2	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	5
4:15 PM	0	1	0	0	0	1	2	0	0	4	0	0	0	0	0	0	8
4:30 PM	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	2	0	0	0	1	1	0	0	1	1	0	0	0	0	0	6
5:00 PM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	5
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	1	0	0	0	0	0	0	1	1	3	0	0	0	0	0	6
6:15 PM	0	0	0	0	0	0	0	0	1	1	1	0	0	2	0	0	5
6:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3
6:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	7	0	0	1	2	5	0	3	10	9	0	0	3	0	0	48
APPROACH %'s :	53.33%	46.67%	0.00%	0.00%	12.50%	25.00%	62.50%	0.00%	13.64%	45.45%	40.91%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	3	2	0	0	0	0	0	0	3	3	4	0	0	2	0	0	17
PEAK HR FACTOR :	0.375	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.750	0.333	0.000	0.000	0.250	0.000	0.000	0.708
	0.417								0.500				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston
Control: Signalized

Project ID: 25-430193-002
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				Cypher St/New Cypher St				Cypher St/New Cypher St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	3	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	8
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	18	1	0	0	0	0	0	2	0	0	0	0	0	2	0	28
APPROACH %'s :	20.83%	75.00%	4.17%	0.00%					100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	4	8	0	0	0	0	0	0	2	0	0	0	0	0	1	0	15
PEAK HR FACTOR :	0.333	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.469
	0.500				0.000				0.500				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	4
4:45 PM	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	3	1	0	0	1	1	0	0	0	0	0	7
5:30 PM	0	1	0	0	0	4	0	0	0	1	0	0	0	0	0	0	6
5:45 PM	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
6:00 PM	1	1	0	0	0	3	1	0	0	0	0	0	1	0	0	0	7
6:15 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
6:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
6:45 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	7	0	0	0	22	5	0	0	3	4	0	1	1	0	0	45
APPROACH %'s :	22.22%	77.78%	0.00%	0.00%	0.00%	81.48%	18.52%	0.00%	0.00%	42.86%	57.14%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	2	4	0	0	0	13	1	0	0	1	0	0	1	0	0	0	22
PEAK HR FACTOR :	0.500	1.000	0.000	0.000	0.000	0.813	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.786
	0.750				0.875				0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Cypher St/New Cypher St
City: Boston

Project ID: 25-430193-002
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		Cypher St/New Cypher St		Cypher St/New Cypher St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	1	0	0	1
6:15 AM	0	0	0	0	2	0	0	0	2
6:30 AM	0	1	0	0	3	3	1	1	9
6:45 AM	0	0	0	0	3	4	5	1	13
7:00 AM	0	0	0	0	2	1	1	1	5
7:15 AM	0	0	0	1	6	3	2	0	12
7:30 AM	0	0	0	1	2	0	3	1	7
7:45 AM	0	1	0	1	11	3	2	0	18
8:00 AM	0	1	0	0	16	0	2	0	19
8:15 AM	1	1	0	1	10	1	6	0	20
8:30 AM	1	0	0	0	13	0	3	0	17
8:45 AM	0	1	1	0	8	3	3	2	18
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	5	1	4	76	19	28	6	141
APPROACH %'s :	28.57%	71.43%	20.00%	80.00%	80.00%	20.00%	82.35%	17.65%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	2	3	0	2	50	4	13	0	74
PEAK HR FACTOR :	0.500	0.750		0.500	0.781	0.333	0.542		0.925
	0.625		0.500		0.844		0.542		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	3	0	0	0	3	4	3	2	15
4:15 PM	0	1	0	0	2	2	0	4	9
4:30 PM	1	2	0	0	6	9	1	3	22
4:45 PM	0	0	0	0	0	6	1	5	12
5:00 PM	0	0	0	0	0	4	3	6	13
5:15 PM	0	0	0	0	0	6	2	2	10
5:30 PM	2	0	0	0	3	8	2	5	20
5:45 PM	0	0	1	0	2	7	0	3	13
6:00 PM	0	1	2	0	9	11	0	5	28
6:15 PM	0	1	0	1	1	5	1	4	13
6:30 PM	0	0	0	0	1	3	4	1	9
6:45 PM	0	0	1	0	0	5	0	2	8
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	5	4	1	27	70	17	42	172
APPROACH %'s :	54.55%	45.45%	80.00%	20.00%	27.84%	72.16%	28.81%	71.19%	
PEAK HR :	**05:30 PM - 06:30 PM**								TOTAL
PEAK HR VOL :	2	2	3	1	15	31	3	17	74
PEAK HR FACTOR :	0.250	0.500	0.375	0.250	0.417	0.705	0.375	0.850	0.661
	0.500		0.500		0.575		0.714		

Prepared by National Data & Surveying Services

D St & Cypher St/New Cypher St

Peak Hour Turning Movement Count

ID: 25-430193-002
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:30 PM - 06:30 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (D St)

AM	29	40	23	0	241	AM
NOON	0	0	0	0	0	NOON
PM	38	95	65	0	125	PM

EASTBOUND (Cypher St/New Cypher St)

AM	NOON	PM	
207	0	106	
0	0	0	0
74	0	52	0
82	0	141	1
123	0	249	1
AM	NOON	PM	

WESTBOUND (Cypher St/New Cypher St)

PM	NOON	AM	
1	0	10	0
15	0	35	1
1	0	0	0
0	0	0	0
206	0	105	
PM	NOON	AM	

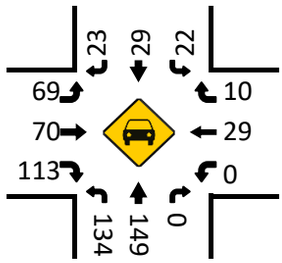
NORTHBOUND (D St)

PM	345	0	53	72	0	PM
NOON	0	0	0	0	0	NOON
AM	163	0	143	157	0	AM

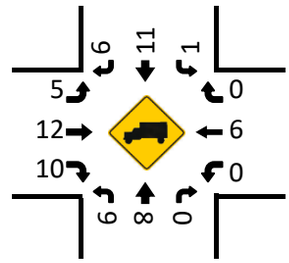
CONTROL: Signalized

TEV	716 AM	0 NOON	782 PM
PHF	0.95		0.91

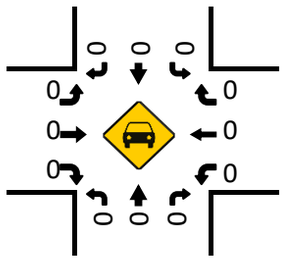
Cars (AM)



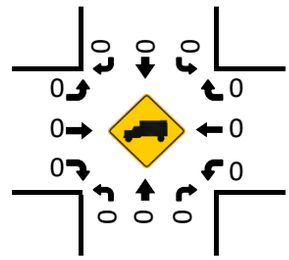
Total Trucks (AM)



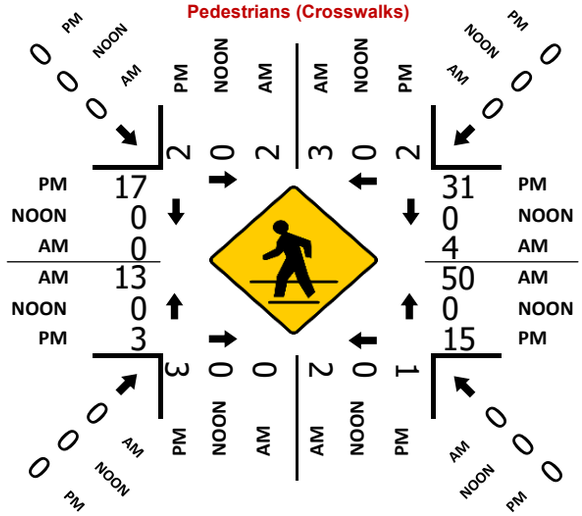
Cars (NOON)



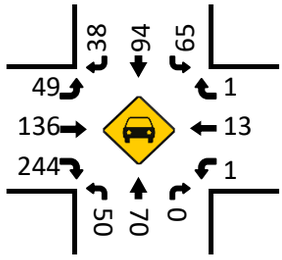
Total Trucks (NOON)



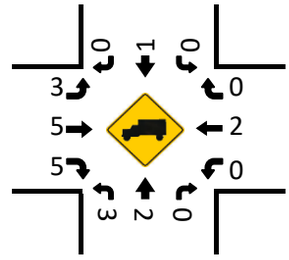
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-002
Location: D St & Cypher St/New Cypher St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						Cypher St/New Cypher St Eastbound						Cypher St/New Cypher St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	7	9	0	0	0	16	0	3	6	0	0	9	15	10	18	0	0	43	0	1	2	0	1	3	71
6:15 AM	10	13	0	0	0	23	3	11	1	0	0	15	11	11	18	0	0	40	0	5	1	0	2	6	84
6:30 AM	18	10	0	0	0	28	3	16	5	0	1	24	7	13	14	0	2	34	0	4	1	0	6	5	91
6:45 AM	13	19	0	0	0	32	3	5	6	0	0	14	9	9	17	0	6	35	0	2	3	0	7	5	86
Total	48	51	0	0	0	99	9	35	18	0	1	62	42	43	67	0	8	152	0	12	7	0	16	19	332
7:00 AM	14	21	0	0	0	35	5	9	9	0	0	23	24	14	25	0	2	63	1	4	2	0	3	7	128
7:15 AM	25	29	0	0	1	54	2	6	9	0	0	17	14	21	25	0	2	60	0	4	2	0	9	6	137
7:30 AM	34	30	0	0	1	64	6	7	2	0	0	15	15	12	27	0	4	54	0	4	0	0	2	4	137
7:45 AM	31	29	0	0	1	60	5	13	8	0	1	26	19	20	29	0	2	68	0	11	2	0	14	13	167
Total	104	109	0	0	3	213	18	35	28	0	1	81	72	67	106	0	10	245	1	23	6	0	28	30	569
8:00 AM	36	47	0	0	0	83	8	7	8	0	1	23	16	21	27	0	2	64	0	9	2	0	16	11	181
8:15 AM	38	39	0	0	1	77	5	9	6	0	2	20	19	18	42	0	6	79	0	6	6	0	11	12	188
8:30 AM	38	42	0	0	0	80	5	11	7	0	1	23	20	23	25	0	3	68	0	9	0	0	13	9	180
8:45 AM	33	31	0	0	1	64	0	9	10	0	1	19	18	24	24	0	5	66	0	8	2	0	11	10	159
Total	145	159	0	0	2	304	18	36	31	0	5	85	73	86	118	0	16	277	0	32	10	0	51	42	708
BREAK																									
4:00 PM	13	9	0	0	0	22	19	14	2	0	3	35	9	31	41	0	5	81	0	4	2	0	7	6	144
4:15 PM	6	19	0	0	0	25	17	17	12	0	1	46	13	27	68	0	4	108	0	3	0	0	4	3	182
4:30 PM	15	16	0	0	0	31	15	21	8	0	3	44	17	23	32	0	4	72	0	4	2	0	15	6	153
4:45 PM	20	21	1	0	0	42	5	21	9	0	0	35	15	17	44	0	6	76	0	6	2	0	6	8	161
Total	54	65	1	0	0	120	56	73	31	0	7	160	54	98	185	0	19	337	0	17	6	0	32	23	640
5:00 PM	15	26	0	0	0	41	12	23	8	0	0	43	9	24	49	0	9	82	0	2	0	0	4	2	168
5:15 PM	16	18	0	0	0	34	5	17	7	0	0	29	14	36	66	0	4	116	0	5	0	0	6	5	184
5:30 PM	10	23	0	0	0	33	20	22	13	0	2	55	12	34	57	0	7	103	0	2	0	0	11	2	193
5:45 PM	12	12	0	0	1	24	16	27	10	0	0	53	10	33	66	0	3	109	0	3	0	0	9	3	189
Total	53	79	0	0	1	132	53	89	38	0	2	180	45	127	238	0	23	410	0	12	0	0	30	12	734
6:00 PM	16	17	0	0	2	33	18	25	7	0	1	50	16	42	70	0	5	128	1	2	1	0	20	4	215
6:15 PM	15	20	0	0	1	35	11	21	8	0	1	40	14	32	56	0	5	102	0	8	0	0	6	8	185
6:30 PM	12	16	0	0	0	28	5	15	3	0	0	23	11	34	59	0	5	104	0	3	1	0	4	4	159
6:45 PM	8	16	1	0	1	25	2	12	5	0	0	19	9	33	58	0	2	100	0	1	1	0	5	2	146
Total	51	69	1	0	4	121	36	73	23	0	2	132	50	141	243	0	17	434	1	14	3	0	35	18	705
Grand Total	455	532	2	0	10	989	190	341	169	0	18	700	336	562	957	0	93	1855	2	110	32	0	192	144	3688
Apprch %	46.0	53.8	0.2	0.0	1.0		27.1	48.7	24.1	0.0	2.6		18.1	30.3	51.6	0.0	5.0		1.4	76.4	22.2	0.0	133.3		
Total %	12.3	14.4	0.1	0.0	0.3	26.8	5.2	9.2	4.6	0.0	0.5	19.0	9.1	15.2	25.9	0.0	2.5	50.3	0.1	3.0	0.9	0.0	5.2	3.9	
Cars, PU, Vans	424	501	2	0		927	188	313	146	0		647	319	522	908	0		1749	2	90	31	0		123	3446
% Cars, PU, Vans	93.2	94.2	100.0	0.0		93.7	98.9	91.8	86.4	0.0		92.4	94.9	92.9	94.9	0.0		94.3	100.0	81.8	96.9	0.0		85.4	93.4
Buses	2	0	0	0		2	0	7	0	0		7	1	4	6	0		11	0	0	0	0		0	20
%Buses	0.4	0.0	0.0	0.0		0.2	0.0	2.1	0.0	0.0		1.0	0.3	0.7	0.6	0.0		0.6	0.0	0.0	0.0	0.0		0.0	0.5
Heavy Trucks	29	31	0	0		60	2	21	23	0		46	16	36	43	0		95	0	20	1	0		21	222
%Heavy Trucks	6.4	5.8	0.0	0.0		6.1	1.1	6.2	13.6	0.0		6.6	4.8	6.4	4.5	0.0		5.1	0.0	18.2	3.1	0.0		14.6	6.0

Project ID: 25-430193-002
Location: D St & Cypher St/New Cypher St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					Cypher St/New Cypher St Eastbound					Cypher St/New Cypher St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	31	29	0	0	60	5	13	8	0	26	19	20	29	0	68	0	11	2	0	13	167
8:00 AM	36	47	0	0	83	8	7	8	0	23	16	21	27	0	64	0	9	2	0	11	181
8:15 AM	38	39	0	0	77	5	9	6	0	20	19	18	42	0	79	0	6	6	0	12	188
8:30 AM	38	42	0	0	80	5	11	7	0	23	20	23	25	0	68	0	9	0	0	9	180
Total Volume	143	157	0	0	300	23	40	29	0	92	74	82	123	0	279	0	35	10	0	45	716
% App. Total	47.7	52.3	0.0	0.0	100	25.0	43.5	31.5	0.0	100	26.5	29.4	44.1	0.0	100	0.0	77.8	22.2	0.0	100	
PHF					0.904					0.885					0.883					0.865	0.952
Cars, PU, Vans	134	149	0	0	283	22	29	23	0	74	69	70	113	0	252	0	29	10	0	39	648
% Cars, PU, Vans	93.7	94.9	0.0	0.0	94.3	95.7	72.5	79.3	0.0	80.4	93.2	85.4	91.9	0.0	90.3	0.0	82.9	100.0	0.0	86.7	90.5
Buses	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	0	0	0	0	0	5
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	3.3	1.4	0.0	0.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
Heavy Trucks	9	8	0	0	17	1	8	6	0	15	4	12	9	0	25	0	6	0	0	6	63
%Heavy Trucks	6.3	5.1	0.0	0.0	5.7	4.3	20.0	20.7	0.0	16.3	5.4	14.6	7.3	0.0	9.0	0.0	17.1	0.0	0.0	13.3	8.8

PM

	D St Northbound					D St Southbound					Cypher St/New Cypher St Eastbound					Cypher St/New Cypher St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
5:30 PM	10	23	0	0	33	20	22	13	0	55	12	34	57	0	103	0	2	0	0	2	193
5:45 PM	12	12	0	0	24	16	27	10	0	53	10	33	66	0	109	0	3	0	0	3	189
6:00 PM	16	17	0	0	33	18	25	7	0	50	16	42	70	0	128	1	2	1	0	4	215
6:15 PM	15	20	0	0	35	11	21	8	0	40	14	32	56	0	102	0	8	0	0	8	185
Total Volume	53	72	0	0	125	65	95	38	0	198	52	141	249	0	442	1	15	1	0	17	782
% App. Total	42.4	57.6	0.0	0.0	100	32.8	48.0	19.2	0.0	100	11.8	31.9	56.3	0.0	100	5.9	88.2	5.9	0.0	100	
PHF					0.893					0.900					0.863					0.531	0.909
Cars, PU, Vans	50	70	0	0	120	65	94	38	0	197	49	136	244	0	429	1	13	1	0	15	761
% Cars, PU, Vans	94.3	97.2	0.0	0.0	96.0	100.0	98.9	100.0	0.0	99.5	94.2	96.5	98.0	0.0	97.1	100.0	86.7	100.0	0.0	88.2	97.3
Buses	0	0	0	0	0	0	1	0	0	1	0	2	1	0	3	0	0	0	0	0	4
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.5	0.0	1.4	0.4	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.5
Heavy Trucks	3	2	0	0	5	0	0	0	0	0	3	3	4	0	10	0	2	0	0	2	17
%Heavy Trucks	5.7	2.8	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	5.8	2.1	1.6	0.0	2.3	0.0	13.3	0.0	0.0	11.8	2.2

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston
Control: Signalized

Project ID: 25-430193-003
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	9	4	0	15	0	6	0	0	7	0	0	0	9	7	0	59
6:15 AM	4	10	6	0	16	0	13	0	1	8	0	0	0	14	12	0	84
6:30 AM	2	10	3	0	16	0	12	0	2	6	0	0	0	13	17	0	81
6:45 AM	1	15	7	0	16	0	8	0	2	4	0	0	0	17	16	0	86
7:00 AM	1	16	3	0	32	0	3	0	1	7	0	0	0	12	16	0	91
7:15 AM	1	20	9	0	19	1	11	0	2	15	0	0	0	29	34	0	141
7:30 AM	1	22	8	0	24	0	9	0	6	11	0	0	0	26	35	0	142
7:45 AM	0	25	8	0	34	0	8	0	1	18	0	0	0	24	34	0	152
8:00 AM	2	36	9	0	28	0	6	0	3	17	0	0	0	39	45	0	185
8:15 AM	0	31	7	0	42	0	10	0	3	12	0	0	0	42	45	0	192
8:30 AM	2	32	6	0	26	0	10	0	1	16	0	0	0	38	46	0	177
8:45 AM	3	19	6	0	26	0	6	0	2	11	0	0	1	38	41	0	153
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	245	76	0	294	1	102	0	24	132	0	0	1	301	348	0	1543
APPROACH %'s :	5.59%	72.06%	22.35%	0.00%	74.06%	0.25%	25.69%	0.00%	15.38%	84.62%	0.00%	0.00%	0.15%	46.31%	53.54%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	7	118	28	0	122	0	32	0	9	56	0	0	1	157	177	0	707
PEAK HR FACTOR :	0.583	0.819	0.778	0.000	0.726	0.000	0.800	0.000	0.750	0.824	0.000	0.000	0.250	0.935	0.962	0.000	0.921
	0.814				0.740				0.813				0.963				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	13	5	0	41	0	13	0	0	18	0	0	0	22	11	0	123
4:15 PM	2	11	14	0	67	1	17	0	3	10	0	0	0	22	10	0	157
4:30 PM	0	10	14	0	34	1	19	0	1	28	0	0	0	18	20	1	146
4:45 PM	3	15	8	0	46	0	17	0	4	23	0	0	0	25	22	0	163
5:00 PM	5	23	10	0	49	1	22	0	3	9	0	0	0	38	15	1	176
5:15 PM	2	17	6	0	66	0	19	0	2	24	0	0	0	26	15	0	177
5:30 PM	0	13	10	0	56	3	20	0	3	19	0	0	0	23	17	0	164
5:45 PM	3	11	13	0	65	1	27	0	1	16	0	0	0	20	13	0	170
6:00 PM	0	16	11	0	63	0	32	0	2	17	0	0	0	26	16	0	183
6:15 PM	1	15	21	0	59	0	19	0	1	9	0	0	1	26	17	0	169
6:30 PM	3	13	5	0	59	0	15	0	0	5	0	0	0	30	15	0	145
6:45 PM	2	13	7	0	56	3	11	0	0	19	0	0	0	19	12	0	142
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	170	124	0	661	10	231	0	20	197	0	0	1	295	183	2	1915
APPROACH %'s :	6.67%	53.97%	39.37%	0.00%	73.28%	1.11%	25.61%	0.00%	9.22%	90.78%	0.00%	0.00%	0.21%	61.33%	38.05%	0.42%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	5	57	40	0	250	4	98	0	8	76	0	0	0	95	61	0	694
PEAK HR FACTOR :	0.417	0.838	0.769	0.000	0.947	0.333	0.766	0.000	0.667	0.792	0.000	0.000	0.000	0.913	0.897	0.000	0.948
	0.944				0.926				0.808				0.929				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston
Control: Signalized

Project ID: 25-430193-003
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	9	4	0	14	0	6	0	0	4	0	0	0	6	4	0	48
6:15 AM	4	9	6	0	11	0	10	0	1	4	0	0	0	12	7	0	64
6:30 AM	2	9	3	0	12	0	10	0	2	5	0	0	0	10	15	0	68
6:45 AM	1	15	6	0	14	0	6	0	2	3	0	0	0	15	11	0	73
7:00 AM	1	16	3	0	26	0	3	0	1	4	0	0	0	8	11	0	73
7:15 AM	1	20	8	0	18	1	9	0	2	10	0	0	0	26	32	0	127
7:30 AM	1	22	5	0	19	0	6	0	5	8	0	0	0	22	32	0	120
7:45 AM	0	25	6	0	29	0	8	0	0	17	0	0	0	24	31	0	140
8:00 AM	2	36	7	0	24	0	4	0	2	16	0	0	0	37	41	0	169
8:15 AM	0	31	6	0	38	0	8	0	3	10	0	0	0	39	40	0	175
8:30 AM	2	32	6	0	24	0	8	0	1	16	0	0	0	35	44	0	168
8:45 AM	3	19	5	0	26	0	4	0	2	10	0	0	1	35	39	0	144
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	18	243	65	0	255	1	82	0	21	107	0	0	1	269	307	0	1369
APPROACH %'s :	5.52%	74.54%	19.94%	0.00%	75.44%	0.30%	24.26%	0.00%	16.41%	83.59%	0.00%	0.00%	0.17%	46.62%	53.21%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	7	118	24	0	112	0	24	0	8	52	0	0	1	146	164	0	656
PEAK HR FACTOR :	0.583	0.819	0.857	0.000	0.737	0.000	0.750	0.000	0.667	0.813	0.000	0.000	0.250	0.936	0.932	0.000	0.937
	0.828				0.739				0.833				0.984				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	12	5	0	39	0	12	0	0	17	0	0	0	21	10	0	116
4:15 PM	2	11	13	0	67	1	16	0	3	10	0	0	0	21	9	0	153
4:30 PM	0	10	14	0	34	1	19	0	1	27	0	0	0	18	19	1	144
4:45 PM	3	13	8	0	45	0	16	0	4	22	0	0	0	24	21	0	156
5:00 PM	5	21	10	0	49	1	22	0	3	9	0	0	0	36	14	1	171
5:15 PM	2	17	6	0	64	0	19	0	2	24	0	0	0	26	15	0	175
5:30 PM	0	12	10	0	54	3	20	0	3	19	0	0	0	23	15	0	159
5:45 PM	3	11	13	0	65	1	27	0	1	16	0	0	0	19	12	0	168
6:00 PM	0	16	10	0	61	0	32	0	2	15	0	0	0	26	15	0	177
6:15 PM	1	15	20	0	57	0	19	0	1	9	0	0	1	26	17	0	166
6:30 PM	3	13	5	0	58	0	14	0	0	5	0	0	0	28	14	0	140
6:45 PM	2	13	7	0	55	3	11	0	0	17	0	0	0	17	12	0	137
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	164	121	0	648	10	227	0	20	190	0	0	1	285	173	2	1862
APPROACH %'s :	6.86%	53.59%	39.54%	0.00%	73.22%	1.13%	25.65%	0.00%	9.52%	90.48%	0.00%	0.00%	0.22%	61.82%	37.53%	0.43%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	5	56	39	0	244	4	98	0	8	74	0	0	0	94	57	0	679
PEAK HR FACTOR :	0.417	0.824	0.750	0.000	0.938	0.333	0.766	0.000	0.667	0.771	0.000	0.000	0.000	0.904	0.950	0.000	0.959
	0.926				0.930				0.788				0.921				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston
Control: Signalized

Project ID: 25-430193-003
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	5
6:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	1	0	0	5
7:15 AM	0	0	1	0	0	0	0	0	0	5	0	0	0	0	0	0	6
7:30 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	1	0	4
7:45 AM	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	4	0	6	0	0	0	0	22	0	0	0	5	1	0	38
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	2	0	0	0	0	2	0	0	0	4	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.333	0.000	0.000	0.667
					0.500				0.500				0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	1	0	4	0	2	0	0	1	0	0	0	4	0	0	13
APPROACH %'s :	0.00%	50.00%	50.00%	0.00%	66.67%	0.00%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375
					0.375												

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston
Control: Signalized

Project ID: 25-430193-003
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	3	3	0	8
6:15 AM	0	1	0	0	4	0	3	0	0	0	0	0	0	2	5	0	15
6:30 AM	0	1	0	0	4	0	2	0	0	0	0	0	0	3	2	0	12
6:45 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	2	5	0	11
7:00 AM	0	0	0	0	5	0	0	0	0	0	0	0	0	3	5	0	13
7:15 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	3	2	0	8
7:30 AM	0	0	2	0	5	0	3	0	1	1	0	0	0	4	2	0	18
7:45 AM	0	0	1	0	3	0	0	0	1	0	0	0	0	0	3	0	8
8:00 AM	0	0	2	0	3	0	2	0	1	0	0	0	0	2	4	0	14
8:15 AM	0	0	1	0	3	0	2	0	0	1	0	0	0	3	5	0	15
8:30 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	2	2	0	8
8:45 AM	0	0	1	0	0	0	2	0	0	1	0	0	0	0	2	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	2	7	0	33	0	20	0	3	3	0	0	0	27	40	0	136
APPROACH %'s :	10.00%	20.00%	70.00%	0.00%	62.26%	0.00%	37.74%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	40.30%	59.70%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	4	0	8	0	8	0	1	2	0	0	0	7	13	0	43
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.667	0.000	1.000	0.000	0.250	0.500	0.000	0.000	0.000	0.583	0.650	0.000	0.717
	0.500				0.800				0.750				0.625				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	1	0	0	0	0	1	0	0	0	1	1	0	5
4:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
4:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	1	1	0	6
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0	5
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
6:00 PM	0	0	1	0	2	0	0	0	0	2	0	0	0	0	1	0	6
6:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
6:45 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	2	0	9	0	2	0	0	6	0	0	0	6	10	0	40
APPROACH %'s :	0.00%	71.43%	28.57%	0.00%	81.82%	0.00%	18.18%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	37.50%	62.50%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	1	1	0	3	0	0	0	0	2	0	0	0	1	4	0	12
PEAK HR FACTOR :	0.000	0.250	0.250	0.000	0.375	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.500
	0.500				0.375				0.250				0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston
Control: Signalized

Project ID: 25-430193-003
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
7:45 AM	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	1	0	2	0	7
8:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	19	4	1	0	0	0	0	0	0	0	0	2	1	4	0	31
APPROACH %'s :	0.00%	79.17%	16.67%	4.17%									28.57%	14.29%	57.14%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	7	2	0	0	0	0	0	0	0	0	0	2	0	3	0	14
PEAK HR FACTOR :	0.000	0.438	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.375	0.000	0.500
		0.563												0.417			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1	0	1	0	1	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	4
4:45 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	0	5
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	1	0	0	0	4	1	0	0	0	0	0	0	0	0	0	6
5:45 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	1	1	0	6
6:00 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
6:15 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4
6:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	8	0	0	2	24	1	0	0	1	0	0	2	3	1	0	42
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	7.41%	88.89%	3.70%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	50.00%	16.67%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	14	1	0	0	0	0	0	0	1	1	0	22
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.875	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.917
		0.625				0.750								0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & W First St
City: Boston

Project ID: 25-430193-003
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		W First St		W First St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	1	0	0	0	1
6:15 AM	1	0	0	0	1	0	0	0	2
6:30 AM	1	0	2	0	3	3	2	1	12
6:45 AM	0	0	0	0	3	4	4	0	11
7:00 AM	0	0	0	0	2	1	1	0	4
7:15 AM	0	1	1	1	5	1	0	0	9
7:30 AM	0	0	0	0	1	0	1	1	3
7:45 AM	1	0	1	0	9	1	3	0	15
8:00 AM	0	0	1	0	16	0	2	0	19
8:15 AM	0	1	2	0	12	0	5	0	20
8:30 AM	0	1	2	1	12	1	8	0	25
8:45 AM	0	0	0	0	7	4	2	2	15
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	3	9	2	72	15	28	4	136
APPROACH %'s :	50.00%	50.00%	81.82%	18.18%	82.76%	17.24%	87.50%	12.50%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	2	5	1	47	5	17	2	79
PEAK HR FACTOR :		0.500	0.625	0.250	0.734	0.313	0.531	0.250	
	0.500		0.500		0.813		0.594		0.790

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	1	0	3	4	3	3	14
4:15 PM	0	0	3	0	1	4	0	6	14
4:30 PM	0	0	1	1	5	8	1	1	17
4:45 PM	0	0	2	1	0	3	0	8	14
5:00 PM	0	0	0	0	0	6	3	5	14
5:15 PM	0	0	2	0	1	5	2	5	15
5:30 PM	0	1	0	1	3	7	2	7	21
5:45 PM	0	0	0	0	3	6	1	4	14
6:00 PM	0	0	0	0	6	10	0	4	20
6:15 PM	0	2	0	3	1	4	2	9	21
6:30 PM	0	0	0	1	1	2	4	2	10
6:45 PM	0	1	1	2	0	6	0	2	12
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	4	10	9	24	65	18	56	186
APPROACH %'s :	0.00%	100.00%	52.63%	47.37%	26.97%	73.03%	24.32%	75.68%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	0	1	2	1	13	28	5	20	70
PEAK HR FACTOR :		0.250	0.250	0.250	0.542	0.700	0.625	0.714	
	0.250		0.375		0.641		0.694		0.833

Prepared by National Data & Surveying Services

D St & W First St

Peak Hour Turning Movement Count

ID: 25-430193-003
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (D St)

AM	32	0	122	0	304	AM
NOON	0	0	0	0	0	NOON
PM	98	4	250	0	126	PM

EASTBOUND (W First St)

AM	NOON	PM	
196	0	198	⇦
0	0	0	↶ 0
9	0	8	↱ 1
56	0	76	→ 1
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND (W First St)

PM	NOON	AM	
61	0	177	1 ↰
95	0	157	1 ←
0	0	1	0 ↙
0	0	0	0 ↶
366	0	206	⇨
PM	NOON	AM	

NORTHBOUND (D St)

PM	4	0	5	57	40	PM
NOON	0	0	0	0	0	NOON
AM	1	0	7	118	28	AM

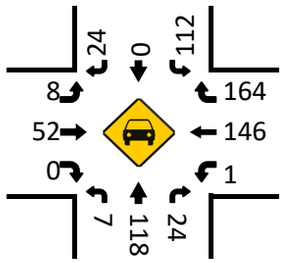
CONTROL

Signalized

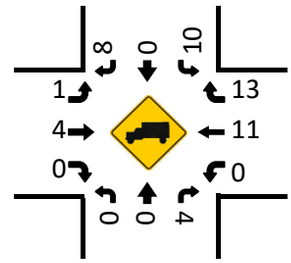
TEV	707 AM	0 NOON	694 PM
PHF	0.92		0.95

Turning movements (1 0 1 0 / 0 0.5 0.5 1)

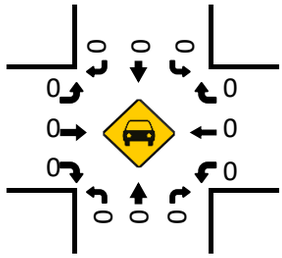
Cars (AM)



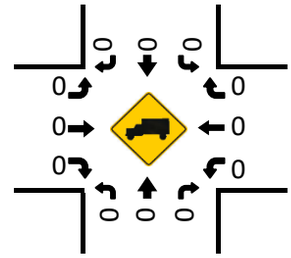
Total Trucks (AM)



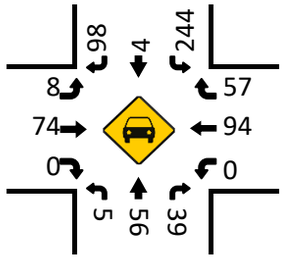
Cars (NOON)



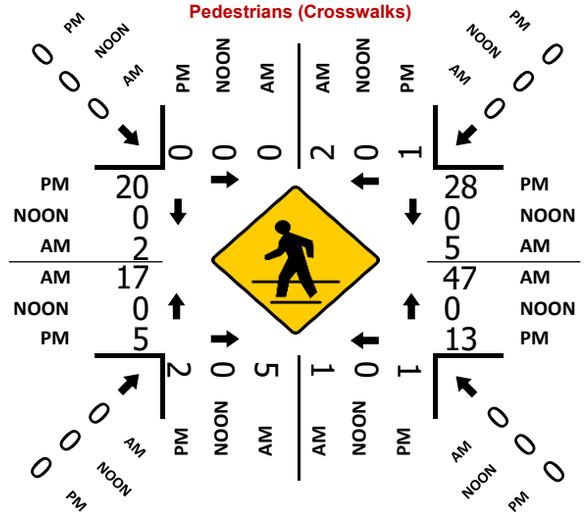
Total Trucks (NOON)



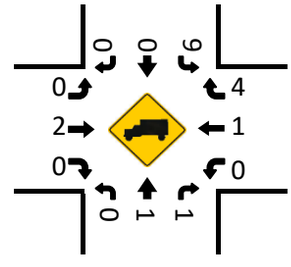
Cars (PM)



Pedestrians (Crosswalks)



Total Trucks (PM)



Project ID: 25-430193-003
Location: D St & W First St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						W First St Eastbound						W First St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	2	9	4	0	0	15	15	0	6	0	0	21	0	7	0	0	0	7	0	9	7	0	1	16	59
6:15 AM	4	10	6	0	0	20	16	0	13	0	1	29	1	8	0	0	0	9	0	14	12	0	1	26	84
6:30 AM	2	10	3	0	2	15	16	0	12	0	1	28	2	6	0	0	3	8	0	13	17	0	6	30	81
6:45 AM	1	15	7	0	0	23	16	0	8	0	0	24	2	4	0	0	4	6	0	17	16	0	7	33	86
Total	9	44	20	0	2	73	63	0	39	0	2	102	5	25	0	0	7	30	0	53	52	0	15	105	310
7:00 AM	1	16	3	0	0	20	32	0	3	0	0	35	1	7	0	0	1	8	0	12	16	0	3	28	91
7:15 AM	1	20	9	0	2	30	19	1	11	0	1	31	2	15	0	0	0	17	0	29	34	0	6	63	141
7:30 AM	1	22	8	0	0	31	24	0	9	0	0	33	6	11	0	0	2	17	0	26	35	0	1	61	142
7:45 AM	0	25	8	0	1	33	34	0	8	0	1	42	1	18	0	0	3	19	0	24	34	0	10	58	152
Total	3	83	28	0	3	114	109	1	31	0	2	141	10	51	0	0	6	61	0	91	119	0	20	210	526
8:00 AM	2	36	9	0	1	47	28	0	6	0	0	34	3	17	0	0	2	20	0	39	45	0	16	84	185
8:15 AM	0	31	7	0	2	38	42	0	10	0	1	52	3	12	0	0	5	15	0	42	45	0	12	87	192
8:30 AM	2	32	6	0	3	40	26	0	10	0	1	36	1	16	0	0	8	17	0	38	46	0	13	84	177
8:45 AM	3	19	6	0	0	28	26	0	6	0	0	32	2	11	0	0	4	13	1	38	41	0	11	80	153
Total	7	118	28	0	6	153	122	0	32	0	2	154	9	56	0	0	19	65	1	157	177	0	52	335	707
BREAK																									
4:00 PM	0	13	5	0	1	18	41	0	13	0	0	54	0	18	0	0	6	18	0	22	11	0	7	33	123
4:15 PM	2	11	14	0	3	27	67	1	17	0	0	85	3	10	0	0	6	13	0	22	10	0	5	32	157
4:30 PM	0	10	14	0	2	24	34	1	19	0	0	54	1	28	0	0	2	29	0	18	20	1	13	39	146
4:45 PM	3	15	8	0	3	26	46	0	17	0	0	63	4	23	0	0	8	27	0	25	22	0	3	47	163
Total	5	49	41	0	9	95	188	2	66	0	0	256	8	79	0	0	22	87	0	87	63	1	28	151	589
5:00 PM	5	23	10	0	0	38	49	1	22	0	0	72	3	9	0	0	8	12	0	38	15	1	6	54	176
5:15 PM	2	17	6	0	2	25	66	0	19	0	0	85	2	24	0	0	7	26	0	26	15	0	6	41	177
5:30 PM	0	13	10	0	1	23	56	3	20	0	1	79	3	19	0	0	9	22	0	23	17	0	10	40	164
5:45 PM	3	11	13	0	0	27	65	1	27	0	0	93	1	16	0	0	5	17	0	20	13	0	9	33	170
Total	10	64	39	0	3	113	236	5	88	0	1	329	9	68	0	0	29	77	0	107	60	1	31	168	687
6:00 PM	0	16	11	0	0	27	63	0	32	0	0	95	2	17	0	0	4	19	0	26	16	0	16	42	183
6:15 PM	1	15	21	0	3	37	59	0	19	0	2	78	1	9	0	0	11	10	1	26	17	0	5	44	169
6:30 PM	3	13	5	0	1	21	59	0	15	0	0	74	0	5	0	0	6	5	0	30	15	0	3	45	145
6:45 PM	2	13	7	0	3	22	56	3	11	0	1	70	0	19	0	0	2	19	0	19	12	0	6	31	142
Total	6	57	44	0	7	107	237	3	77	0	3	317	3	50	0	0	23	53	1	101	60	0	30	162	639
Grand Total	40	415	200	0	30	655	955	11	333	0	10	1299	44	329	0	0	106	373	2	596	531	2	176	1131	3458
Apprch %	6.1	63.4	30.5	0.0	4.6		73.5	0.8	25.6	0.0	0.8		11.8	88.2	0.0	0.0	28.4		0.2	52.7	46.9	0.2	15.6		
Total %	1.2	12.0	5.8	0.0	0.9	18.9	27.6	0.3	9.6	0.0	0.3	37.6	1.3	9.5	0.0	0.0	3.1	10.8	0.1	17.2	15.4	0.1	5.1	32.7	
Cars, PU, Vans	39	407	186	0		632	903	11	309	0		1223	41	297	0	0		338	2	554	480	2		1038	3231
% Cars, PU, Vans	97.5	98.1	93.0	0.0		96.5	94.6	100.0	92.8	0.0		94.1	93.2	90.3	0.0	0.0		90.6	100.0	93.0	90.4	100.0		91.8	93.4
Buses	0	1	5	0		6	10	0	2	0		12	0	23	0	0		23	0	9	1	0		10	51
%Buses	0.0	0.2	2.5	0.0		0.9	1.0	0.0	0.6	0.0		0.9	0.0	7.0	0.0	0.0		6.2	0.0	1.5	0.2	0.0		0.9	1.5
Heavy Trucks	1	7	9	0		17	42	0	22	0		64	3	9	0	0		12	0	33	50	0		83	176
%Heavy Trucks	2.5	1.7	4.5	0.0		2.6	4.4	0.0	6.6	0.0		4.9	6.8	2.7	0.0	0.0		3.2	0.0	5.5	9.4	0.0		7.3	5.1

Project ID: 25-430193-003
Location: D St & W First St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	2	36	9	0	47	28	0	6	0	34	3	17	0	0	20	0	39	45	0	84	185
8:15 AM	0	31	7	0	38	42	0	10	0	52	3	12	0	0	15	0	42	45	0	87	192
8:30 AM	2	32	6	0	40	26	0	10	0	36	1	16	0	0	17	0	38	46	0	84	177
8:45 AM	3	19	6	0	28	26	0	6	0	32	2	11	0	0	13	1	38	41	0	80	153
Total Volume	7	118	28	0	153	122	0	32	0	154	9	56	0	0	65	1	157	177	0	335	707
% App. Total	4.6	77.1	18.3	0.0	100	79.2	0.0	20.8	0.0	100	13.8	86.2	0.0	0.0	100	0.3	46.9	52.8	0.0	100	
PHF					0.814					0.740					0.813					0.963	0.921
Cars, PU, Vans	7	118	24	0	149	112	0	24	0	136	8	52	0	0	60	1	146	164	0	311	656
% Cars, PU, Vans	100.0	100.0	85.7	0.0	97.4	91.8	0.0	75.0	0.0	88.3	88.9	92.9	0.0	0.0	92.3	100.0	93.0	92.7	0.0	92.8	92.8
Buses	0	0	0	0	0	2	0	0	0	2	0	2	0	0	2	0	4	0	0	4	8
%Buses	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.3	0.0	3.6	0.0	0.0	3.1	0.0	2.5	0.0	0.0	1.2	1.1
Heavy Trucks	0	0	4	0	4	8	0	8	0	16	1	2	0	0	3	0	7	13	0	20	43
%Heavy Trucks	0.0	0.0	14.3	0.0	2.6	6.6	0.0	25.0	0.0	10.4	11.1	3.6	0.0	0.0	4.6	0.0	4.5	7.3	0.0	6.0	6.1

PM

	D St Northbound					D St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	2	17	6	0	25	66	0	19	0	85	2	24	0	0	26	0	26	15	0	41	177
5:30 PM	0	13	10	0	23	56	3	20	0	79	3	19	0	0	22	0	23	17	0	40	164
5:45 PM	3	11	13	0	27	65	1	27	0	93	1	16	0	0	17	0	20	13	0	33	170
6:00 PM	0	16	11	0	27	63	0	32	0	95	2	17	0	0	19	0	26	16	0	42	183
Total Volume	5	57	40	0	102	250	4	98	0	352	8	76	0	0	84	0	95	61	0	156	694
% App. Total	4.9	55.9	39.2	0.0	100	71.0	1.1	27.8	0.0	100	9.5	90.5	0.0	0.0	100	0.0	60.9	39.1	0.0	100	
PHF					0.944					0.926					0.808					0.929	0.948
Cars, PU, Vans	5	56	39	0	100	244	4	98	0	346	8	74	0	0	82	0	94	57	0	151	679
% Cars, PU, Vans	100.0	98.2	97.5	0.0	98.0	97.6	100.0	100.0	0.0	98.3	100.0	97.4	0.0	0.0	97.6	0.0	98.9	93.4	0.0	96.8	97.8
Buses	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
%Buses	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Heavy Trucks	0	1	1	0	2	3	0	0	0	3	0	2	0	0	2	0	1	4	0	5	12
%Heavy Trucks	0.0	1.8	2.5	0.0	2.0	1.2	0.0	0.0	0.0	0.9	0.0	2.6	0.0	0.0	2.4	0.0	1.1	6.6	0.0	3.2	1.7

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston
Control: 3-Way Stop(SB/EB/WB)

Project ID: 25-430193-004
Date: 12/16/2025

Data - Total

NS/EW Streets:	E St				E St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	1	6	0	0	2	19	2	0	9	15	4	0	58
6:15 AM	0	0	0	0	6	10	2	0	1	24	5	0	7	25	5	0	85
6:30 AM	0	0	0	0	5	16	4	0	1	12	11	0	10	27	13	0	99
6:45 AM	0	0	0	0	5	8	0	0	3	20	4	0	12	29	11	1	93
7:00 AM	0	0	0	0	8	23	1	0	1	35	9	0	16	27	9	0	129
7:15 AM	0	0	0	0	6	20	4	0	3	29	9	0	22	59	20	0	172
7:30 AM	0	0	0	0	6	24	4	0	3	25	13	0	11	58	20	0	164
7:45 AM	0	0	0	0	14	19	5	0	3	44	11	0	12	54	25	0	187
8:00 AM	0	0	0	0	13	36	4	0	6	43	13	0	16	81	19	0	231
8:15 AM	0	0	0	0	9	27	1	0	2	42	17	0	19	86	22	0	225
8:30 AM	0	0	0	0	10	36	4	0	4	32	11	0	14	79	21	0	211
8:45 AM	0	0	0	0	14	29	1	0	3	30	9	0	13	78	15	0	192
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	97	254	30	0	32	355	114	0	161	618	184	1	1846
APPROACH %'s :					25.46%	66.67%	7.87%	0.00%	6.39%	70.86%	22.75%	0.00%	16.70%	64.11%	19.09%	0.10%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	46	128	10	0	15	147	50	0	62	324	77	0	859
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.821	0.889	0.625	0.000	0.625	0.855	0.735	0.000	0.816	0.942	0.875	0.000	0.930
					0.868				0.855				0.911				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	11	78	5	0	3	36	27	0	9	30	4	0	203
4:15 PM	0	0	0	0	11	74	4	0	1	53	33	0	14	31	6	0	227
4:30 PM	0	0	0	0	25	54	3	0	3	59	18	0	11	36	8	0	217
4:45 PM	0	0	0	0	10	59	3	0	2	49	25	0	9	43	4	0	204
5:00 PM	0	0	0	0	15	71	4	0	2	43	25	0	25	47	5	0	237
5:15 PM	0	0	0	0	22	55	1	0	1	62	32	0	15	39	7	0	234
5:30 PM	0	0	0	0	15	96	4	0	3	53	30	0	12	37	3	0	253
5:45 PM	0	0	0	0	20	82	1	0	6	48	35	0	18	31	5	0	246
6:00 PM	0	0	0	0	15	88	2	0	3	48	38	0	26	39	5	0	264
6:15 PM	0	0	0	0	17	78	1	0	6	66	26	0	14	48	3	0	259
6:30 PM	0	0	0	0	17	61	3	0	0	39	30	0	13	37	5	0	205
6:45 PM	0	0	0	0	11	48	3	0	2	51	27	0	19	29	3	0	193
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	189	844	34	0	32	607	346	0	185	447	58	0	2742
APPROACH %'s :					17.71%	79.10%	3.19%	0.00%	3.25%	61.62%	35.13%	0.00%	26.81%	64.78%	8.41%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	67	344	8	0	18	215	129	0	70	155	16	0	1022
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.838	0.896	0.500	0.000	0.750	0.814	0.849	0.000	0.673	0.807	0.800	0.000	0.968
					0.911				0.923				0.861				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston
Control: 3-Way Stop(SB/EB/WB)

Project ID: 25-430193-004
Date: 12/16/2025

Data - Cars

NS/EW Streets:	E St				E St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	1	6	0	0	2	15	2	0	9	9	4	0	48
6:15 AM	0	0	0	0	6	9	1	0	0	17	4	0	7	17	5	0	66
6:30 AM	0	0	0	0	4	15	1	0	1	7	10	0	8	23	12	0	81
6:45 AM	0	0	0	0	5	8	0	0	2	17	3	0	11	24	11	1	82
7:00 AM	0	0	0	0	8	22	0	0	1	26	9	0	13	20	9	0	108
7:15 AM	0	0	0	0	5	19	2	0	2	23	9	0	18	55	17	0	150
7:30 AM	0	0	0	0	6	23	3	0	3	16	11	0	11	53	16	0	142
7:45 AM	0	0	0	0	14	17	5	0	3	37	10	0	12	51	25	0	174
8:00 AM	0	0	0	0	13	35	2	0	5	37	12	0	15	77	19	0	215
8:15 AM	0	0	0	0	8	27	0	0	1	36	17	0	19	79	22	0	209
8:30 AM	0	0	0	0	10	36	2	0	3	32	11	0	14	76	18	0	202
8:45 AM	0	0	0	0	14	29	1	0	2	29	9	0	13	73	14	0	184
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	94	246	17	0	25	292	107	0	150	557	172	1	1661
APPROACH %'s :					26.33%	68.91%	4.76%	0.00%	5.90%	68.87%	25.24%	0.00%	17.05%	63.30%	19.55%	0.11%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	45	127	5	0	11	134	49	0	61	305	73	0	810
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.804	0.882	0.625	0.000	0.550	0.905	0.721	0.000	0.803	0.965	0.830	0.000	0.942
						0.885				0.898				0.915			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	11	78	4	0	1	36	25	0	9	29	3	0	196
4:15 PM	0	0	0	0	11	72	2	0	1	51	33	0	14	30	6	0	220
4:30 PM	0	0	0	0	25	52	3	0	3	58	18	0	11	35	8	0	213
4:45 PM	0	0	0	0	9	58	2	0	2	46	25	0	9	41	4	0	196
5:00 PM	0	0	0	0	15	71	4	0	1	43	25	0	24	46	5	0	234
5:15 PM	0	0	0	0	22	55	1	0	1	61	31	0	15	39	6	0	231
5:30 PM	0	0	0	0	14	95	3	0	3	52	30	0	12	35	3	0	247
5:45 PM	0	0	0	0	19	82	1	0	6	47	35	0	18	29	5	0	242
6:00 PM	0	0	0	0	15	88	1	0	3	45	37	0	26	39	4	0	258
6:15 PM	0	0	0	0	17	78	1	0	4	65	26	0	14	47	3	0	255
6:30 PM	0	0	0	0	17	61	2	0	0	39	30	0	13	34	5	0	201
6:45 PM	0	0	0	0	11	48	3	0	2	50	26	0	19	26	3	0	188
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	186	838	27	0	27	593	341	0	184	430	55	0	2681
APPROACH %'s :					17.70%	79.73%	2.57%	0.00%	2.81%	61.71%	35.48%	0.00%	27.50%	64.28%	8.22%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	65	343	6	0	16	209	128	0	70	150	15	0	1002
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.855	0.903	0.500	0.000	0.667	0.804	0.865	0.000	0.673	0.798	0.750	0.000	0.971
						0.924				0.929				0.851			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston
Control: 3-Way Stop(SB/EB/WB)

Project ID: 25-430193-004
Date: 12/16/2025

Data - Buses

NS/EW Streets:	E St				E St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
6:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	29	3	0	0	6	0	0	38
APPROACH %'s :									0.00%	90.63%	9.38%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	1	0	0	4	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.000	0.000	0.333	0.000	0.000	0.667
										0.500				0.333			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	1	0	0	1	3	2	0	0	6	0	0	14
APPROACH %'s :					50.00%	50.00%	0.00%	0.00%	16.67%	50.00%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	1	2	0	0	0	1	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.625
					0.250					0.750				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston
Control: 3-Way Stop(SB/EB/WB)

Project ID: 25-430193-004
Date: 12/16/2025

Data - HT

NS/EW Streets:	E St				E St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7
6:15 AM	0	0	0	0	0	1	1	0	1	4	0	0	0	8	0	0	15
6:30 AM	0	0	0	0	1	1	3	0	0	3	1	0	2	4	1	0	16
6:45 AM	0	0	0	0	0	0	0	0	1	1	1	0	1	5	0	0	9
7:00 AM	0	0	0	0	0	1	1	0	0	5	0	0	3	6	0	0	16
7:15 AM	0	0	0	0	1	1	2	0	1	2	0	0	4	4	3	0	18
7:30 AM	0	0	0	0	0	1	1	0	0	5	2	0	0	4	4	0	17
7:45 AM	0	0	0	0	0	2	0	0	0	3	0	0	0	3	0	0	8
8:00 AM	0	0	0	0	0	1	2	0	1	5	0	0	1	4	0	0	14
8:15 AM	0	0	0	0	1	0	1	0	1	4	0	0	0	7	0	0	14
8:30 AM	0	0	0	0	0	0	2	0	1	0	0	0	0	2	3	0	8
8:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	8	13	0	7	34	4	0	11	55	12	0	147
APPROACH %'s :					12.50%	33.33%	54.17%	0.00%	15.56%	75.56%	8.89%	0.00%	14.10%	70.51%	15.38%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	1	5	0	4	10	0	0	1	15	4	0	41
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.625	0.000	1.000	0.500	0.000	0.000	0.250	0.536	0.333	0.000	0.732
					0.583				0.583				0.714				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	2	0	1	0	0	1	1	0	6
4:15 PM	0	0	0	0	0	2	2	0	0	2	0	0	0	1	0	0	7
4:30 PM	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	1	0	1	0	0	3	0	0	0	2	0	0	7
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	4
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
6:00 PM	0	0	0	0	0	0	1	0	0	3	1	0	0	0	1	0	6
6:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	5	7	0	4	11	3	0	1	11	3	0	47
APPROACH %'s :					14.29%	35.71%	50.00%	0.00%	22.22%	61.11%	16.67%	0.00%	6.67%	73.33%	20.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	1	2	0	1	4	1	0	0	4	1	0	15
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.500	0.000	0.250	0.333	0.250	0.000	0.000	0.500	0.250	0.000	0.625
					0.500				0.375				0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston
Control: 3-Way Stop(SB/EB/WB)

Project ID: 25-430193-004
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	E St				E St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	1	0	3	0	0	0	0	7	1	0	13
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	87.50%	12.50%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	1	0	2	0	0	0	0	4	1	0	9
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.563
	0.250				0.250				0.500				0.625				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	4
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	4	3	0	1	3	0	0	0	3	0	0	16
APPROACH %'s :					22.22%	44.44%	33.33%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	1	0	0	1	1	0	0	0	2	0	0	6
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.375
					0.500				0.500				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & W First St
City: Boston

Project ID: 25-430193-004
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	E St		E St		W First St		W First St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	2	1	0	0	3	1	0	0	7
6:30 AM	3	0	0	0	0	1	0	0	4
6:45 AM	0	0	1	0	1	0	1	0	3
7:00 AM	0	0	1	1	1	0	0	0	3
7:15 AM	0	2	2	0	2	0	0	0	6
7:30 AM	0	0	0	0	2	1	2	0	5
7:45 AM	0	1	0	0	2	0	0	0	3
8:00 AM	0	0	1	0	1	0	0	0	2
8:15 AM	0	2	0	1	4	0	1	0	8
8:30 AM	0	1	0	1	6	0	3	0	11
8:45 AM	0	1	0	0	3	2	2	0	8
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	5	8	5	3	25	5	9	0	60
APPROACH %'s :	38.46%	61.54%	62.50%	37.50%	83.33%	16.67%	100.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	4	1	2	14	2	6	0	29
PEAK HR FACTOR :		0.500	0.250	0.500	0.583	0.250	0.500		0.659
	0.500		0.750		0.667		0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	1	1
4:15 PM	0	1	3	0	1	2	0	2	9
4:30 PM	1	0	1	2	0	0	1	3	8
4:45 PM	1	0	3	1	3	3	0	1	12
5:00 PM	1	0	1	1	1	1	1	1	7
5:15 PM	2	0	1	0	1	8	0	2	14
5:30 PM	0	2	1	0	1	0	0	1	5
5:45 PM	2	0	1	0	1	1	0	2	7
6:00 PM	1	0	1	3	1	3	2	0	11
6:15 PM	0	3	0	5	0	4	0	0	12
6:30 PM	1	0	2	0	0	0	0	1	4
6:45 PM	1	3	1	1	2	4	0	1	13
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	10	9	15	13	11	26	4	15	103
APPROACH %'s :	52.63%	47.37%	53.57%	46.43%	29.73%	70.27%	21.05%	78.95%	
PEAK HR :	05:30 PM - 06:30 PM								TOTAL
PEAK HR VOL :	3	5	3	8	3	8	2	3	35
PEAK HR FACTOR :	0.375	0.417	0.750	0.400	0.750	0.500	0.250	0.375	0.729
	0.667		0.550		0.688		0.625		

Prepared by National Data & Surveying Services

E St & W First St

Peak Hour Turning Movement Count

ID: 25-430193-004
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:30 PM - 06:30 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (E St)

AM	10	128	46	0	92	AM
NOON	0	0	0	0	0	NOON
PM	8	344	67	0	34	PM

EASTBOUND (W First St)

AM	NOON	PM	
334	0	163	
0	0	0	0
15	0	18	0
147	0	215	1
50	0	129	0

WESTBOUND (W First St)

PM	NOON	AM	
16	0	77	0
155	0	324	1
70	0	62	0
0	0	0	0
282	0	193	

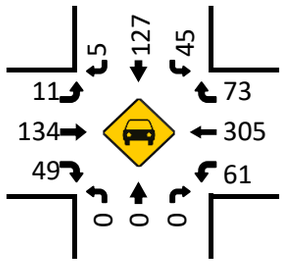
NORTHBOUND (E St)

PM	543	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	240	0	0	0	0	AM

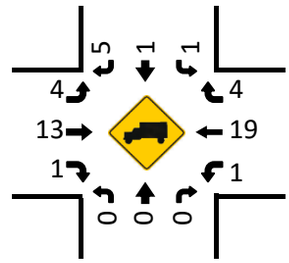
CONTROL: 3-Way Stop(SB/EB/WB)

	AM	NOON	PM
TEV	859	0	1022
PHF	0.93		0.97

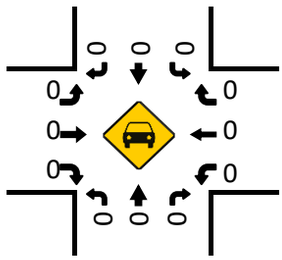
Cars (AM)



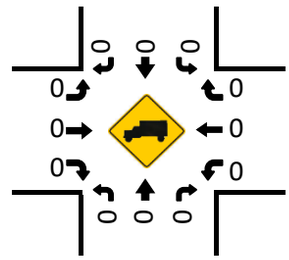
Total Trucks (AM)



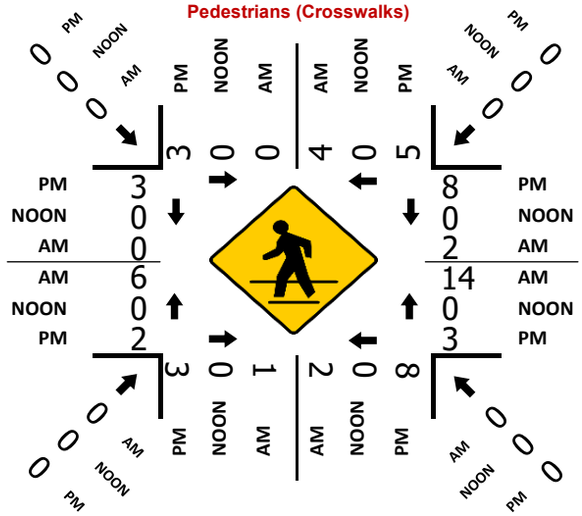
Cars (NOON)



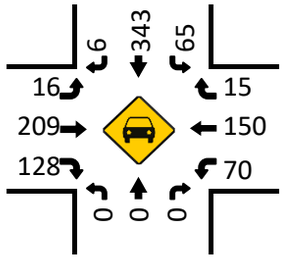
Total Trucks (NOON)



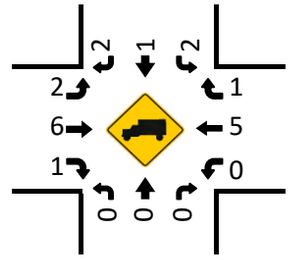
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-004
Location: E St & W First St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	E St Northbound						E St Southbound						W First St Eastbound						W First St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	1	6	0	0	0	7	2	19	2	0	0	23	9	15	4	0	0	28	58
6:15 AM	0	0	0	0	0	0	6	10	2	0	3	18	1	24	5	0	0	30	7	25	5	0	4	37	85
6:30 AM	0	0	0	0	0	0	5	16	4	0	3	25	1	12	11	0	0	24	10	27	13	0	1	50	99
6:45 AM	0	0	0	0	1	0	5	8	0	0	0	13	3	20	4	0	1	27	12	29	11	1	1	53	93
Total	0	0	0	0	1	0	17	40	6	0	6	63	7	75	22	0	1	104	38	96	33	1	6	168	335
7:00 AM	0	0	0	0	2	0	8	23	1	0	0	32	1	35	9	0	0	45	16	27	9	0	1	52	129
7:15 AM	0	0	0	0	2	0	6	20	4	0	2	30	3	29	9	0	0	41	22	59	20	0	2	101	172
7:30 AM	0	0	0	0	0	0	6	24	4	0	0	34	3	25	13	0	2	41	11	58	20	0	3	89	164
7:45 AM	0	0	0	0	0	0	14	19	5	0	1	38	3	44	11	0	0	58	12	54	25	0	2	91	187
Total	0	0	0	0	4	0	34	86	14	0	3	134	10	133	42	0	2	185	61	198	74	0	8	333	652
8:00 AM	0	0	0	0	1	0	13	36	4	0	0	53	6	43	13	0	0	62	16	81	19	0	1	116	231
8:15 AM	0	0	0	0	1	0	9	27	1	0	2	37	2	42	17	0	1	61	19	86	22	0	4	127	225
8:30 AM	0	0	0	0	1	0	10	36	4	0	1	50	4	32	11	0	3	47	14	79	21	0	6	114	211
8:45 AM	0	0	0	0	0	0	14	29	1	0	1	44	3	30	9	0	2	42	13	78	15	0	5	106	192
Total	0	0	0	0	3	0	46	128	10	0	4	184	15	147	50	0	6	212	62	324	77	0	16	463	859
BREAK																									
4:00 PM	0	0	0	0	0	0	11	78	5	0	0	94	3	36	27	0	1	66	9	30	4	0	0	43	203
4:15 PM	0	0	0	0	3	0	11	74	4	0	1	89	1	53	33	0	2	87	14	31	6	0	3	51	227
4:30 PM	0	0	0	0	3	0	25	54	3	0	1	82	3	59	18	0	4	80	11	36	8	0	0	55	217
4:45 PM	0	0	0	0	4	0	10	59	3	0	1	72	2	49	25	0	1	76	9	43	4	0	6	56	204
Total	0	0	0	0	10	0	57	265	15	0	3	337	9	197	103	0	8	309	43	140	22	0	9	205	851
5:00 PM	0	0	0	0	2	0	15	71	4	0	1	90	2	43	25	0	2	70	25	47	5	0	2	77	237
5:15 PM	0	0	0	0	1	0	22	55	1	0	2	78	1	62	32	0	2	95	15	39	7	0	9	61	234
5:30 PM	0	0	0	0	1	0	15	96	4	0	2	115	3	53	30	0	1	86	12	37	3	0	1	52	253
5:45 PM	0	0	0	0	1	0	20	82	1	0	2	103	6	48	35	0	2	89	18	31	5	0	2	54	246
Total	0	0	0	0	5	0	72	304	10	0	7	386	12	206	122	0	7	340	70	154	20	0	14	244	970
6:00 PM	0	0	0	0	4	0	15	88	2	0	1	105	3	48	38	0	2	89	26	39	5	0	4	70	264
6:15 PM	0	0	0	0	5	0	17	78	1	0	3	96	6	66	26	0	0	98	14	48	3	0	4	65	259
6:30 PM	0	0	0	0	2	0	17	61	3	0	1	81	0	39	30	0	1	69	13	37	5	0	0	55	205
6:45 PM	0	0	0	0	2	0	11	48	3	0	4	62	2	51	27	0	1	80	19	29	3	0	6	51	193
Total	0	0	0	0	13	0	60	275	9	0	9	344	11	204	121	0	4	336	72	153	16	0	14	241	921
Grand Total	0	0	0	0	36	0	286	1098	64	0	32	1448	64	962	460	0	28	1486	346	1065	242	1	67	1654	4588
Apprch %	0.0	0.0	0.0	0.0	0.0		19.8	75.8	4.4	0.0	2.2		4.3	64.7	31.0	0.0	1.9		20.9	64.4	14.6	0.1	4.1		
Total %	0.0	0.0	0.0	0.0	0.8	0.0	6.2	23.9	1.4	0.0	0.7	31.6	1.4	21.0	10.0	0.0	0.6	32.4	7.5	23.2	5.3	0.0	1.5	36.1	
Cars, PU, Vans	0	0	0	0		0	280	1084	44	0		1408	52	885	448	0		1385	334	987	227	1		1549	4342
% Cars, PU, Vans	0.0	0.0	0.0	0.0		0.0	97.9	98.7	68.8	0.0		97.2	81.3	92.0	97.4	0.0		93.2	96.5	92.7	93.8	100.0		93.7	94.6
Buses	0	0	0	0		0	1	1	0	0		2	1	32	5	0		38	0	12	0	0		12	52
%Buses	0.0	0.0	0.0	0.0		0.0	0.3	0.1	0.0	0.0		0.1	1.6	3.3	1.1	0.0		2.6	0.0	1.1	0.0	0.0		0.7	1.1
Heavy Trucks	0	0	0	0		0	5	13	20	0		38	11	45	7	0		63	12	66	15	0		93	194
%Heavy Trucks	0.0	0.0	0.0	0.0		0.0	1.7	1.2	31.3	0.0		2.6	17.2	4.7	1.5	0.0		4.2	3.5	6.2	6.2	0.0		5.6	4.2

Project ID: 25-430193-004
Location: E St & W First St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	E St Northbound					E St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	0	0	0	0	0	13	36	4	0	53	6	43	13	0	62	16	81	19	0	116	231
8:15 AM	0	0	0	0	0	9	27	1	0	37	2	42	17	0	61	19	86	22	0	127	225
8:30 AM	0	0	0	0	0	10	36	4	0	50	4	32	11	0	47	14	79	21	0	114	211
8:45 AM	0	0	0	0	0	14	29	1	0	44	3	30	9	0	42	13	78	15	0	106	192
Total Volume	0	0	0	0	0	46	128	10	0	184	15	147	50	0	212	62	324	77	0	463	859
% App. Total	0.0	0.0	0.0	0.0	0	25.0	69.6	5.4	0.0	100	7.1	69.3	23.6	0.0	100	13.4	70.0	16.6	0.0	100	
PHF										0.868					0.855					0.911	0.930
Cars, PU, Vans	0	0	0	0	0	45	127	5	0	177	11	134	49	0	194	61	305	73	0	439	810
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	97.8	99.2	50.0	0.0	96.2	73.3	91.2	98.0	0.0	91.5	98.4	94.1	94.8	0.0	94.8	94.3
Buses	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	4	0	0	4	8
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	1.9	0.0	1.2	0.0	0.0	0.9	0.9
Heavy Trucks	0	0	0	0	0	1	1	5	0	7	4	10	0	0	14	1	15	4	0	20	41
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	2.2	0.8	50.0	0.0	3.8	26.7	6.8	0.0	0.0	6.6	1.6	4.6	5.2	0.0	4.3	4.8

PM

	E St Northbound					E St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
5:30 PM	0	0	0	0	0	15	96	4	0	115	3	53	30	0	86	12	37	3	0	52	253
5:45 PM	0	0	0	0	0	20	82	1	0	103	6	48	35	0	89	18	31	5	0	54	246
6:00 PM	0	0	0	0	0	15	88	2	0	105	3	48	38	0	89	26	39	5	0	70	264
6:15 PM	0	0	0	0	0	17	78	1	0	96	6	66	26	0	98	14	48	3	0	65	259
Total Volume	0	0	0	0	0	67	344	8	0	419	18	215	129	0	362	70	155	16	0	241	1022
% App. Total	0.0	0.0	0.0	0.0	0	16.0	82.1	1.9	0.0	100	5.0	59.4	35.6	0.0	100	29.0	64.3	6.6	0.0	100	
PHF										0.911					0.923					0.861	0.968
Cars, PU, Vans	0	0	0	0	0	65	343	6	0	414	16	209	128	0	353	70	150	15	0	235	1002
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	97.0	99.7	75.0	0.0	98.8	88.9	97.2	99.2	0.0	97.5	100.0	96.8	93.8	0.0	97.5	98.0
Buses	0	0	0	0	0	1	0	0	0	1	1	2	0	0	3	0	1	0	0	1	5
%Buses	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.2	5.6	0.9	0.0	0.0	0.8	0.0	0.6	0.0	0.0	0.4	0.5
Heavy Trucks	0	0	0	0	0	1	1	2	0	4	1	4	1	0	6	0	4	1	0	5	15
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	1.5	0.3	25.0	0.0	1.0	5.6	1.9	0.8	0.0	1.7	0.0	2.6	6.3	0.0	2.1	1.5

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston
Control: No Control

Project ID: 25-430193-005
Date: 12/16/2025

Data - Total

NS/EW Streets:	E St				E St				New Cypher St/W.B. Mason S Dwy				New Cypher St/W.B. Mason S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	5	0	0	0	4	1	0	3	4	3	0	0	1	0	0	22
6:15 AM	3	3	0	0	1	9	2	0	3	4	8	0	1	1	0	0	35
6:30 AM	2	11	1	0	0	15	1	0	7	1	7	0	3	2	0	0	50
6:45 AM	4	9	1	0	1	8	1	0	4	1	7	0	0	1	0	0	37
7:00 AM	1	6	3	0	1	20	4	0	4	1	12	0	1	0	0	0	53
7:15 AM	5	14	2	0	0	16	1	0	5	5	12	0	0	0	1	0	61
7:30 AM	2	21	2	0	2	26	0	0	6	1	13	0	1	2	1	0	77
7:45 AM	12	15	1	0	0	11	0	0	5	1	18	0	6	1	0	0	70
8:00 AM	7	18	2	0	1	21	2	0	12	3	15	0	16	2	2	0	101
8:15 AM	6	16	2	0	0	18	2	1	5	0	18	0	2	4	0	0	74
8:30 AM	4	18	2	0	0	32	4	0	7	2	18	0	1	0	0	0	88
8:45 AM	6	12	1	0	2	24	3	0	7	2	15	0	3	1	0	0	76
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	53	148	17	0	8	204	21	1	68	25	146	0	34	15	4	0	744
APPROACH %'s :	24.31%	67.89%	7.80%	0.00%	3.42%	87.18%	8.97%	0.43%	28.45%	10.46%	61.09%	0.00%	64.15%	28.30%	7.55%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	23	64	7	0	3	95	11	1	31	7	66	0	22	7	2	0	339
PEAK HR FACTOR :	0.821	0.889	0.875	0.000	0.375	0.742	0.688	0.250	0.646	0.583	0.917	0.000	0.344	0.438	0.250	0.000	0.839
	0.870				0.764				0.867				0.388				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	6	2	0	0	42	2	0	2	1	45	0	8	1	3	0	113
4:15 PM	1	5	3	0	0	45	2	0	4	0	40	0	2	0	3	0	105
4:30 PM	2	7	2	0	1	46	4	0	3	2	35	0	3	1	1	0	107
4:45 PM	3	2	0	0	0	53	3	0	4	2	17	0	3	1	0	0	88
5:00 PM	1	4	2	0	0	55	1	0	2	0	30	0	2	0	0	0	97
5:15 PM	2	3	3	0	1	49	3	0	4	2	35	0	0	0	0	0	102
5:30 PM	1	3	2	0	0	56	1	0	0	2	55	0	4	0	1	0	125
5:45 PM	4	6	1	0	1	55	0	0	5	1	44	0	0	0	0	0	117
6:00 PM	2	4	2	0	1	57	3	0	6	1	52	1	1	0	0	0	130
6:15 PM	2	6	1	0	1	54	2	0	2	1	40	0	0	3	0	0	112
6:30 PM	2	2	0	0	0	44	2	0	4	2	32	0	1	0	0	0	89
6:45 PM	0	4	1	0	0	28	1	0	5	0	31	0	3	1	1	0	75
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	52	19	0	5	584	24	0	41	14	456	1	27	7	9	0	1260
APPROACH %'s :	22.83%	56.52%	20.65%	0.00%	0.82%	95.27%	3.92%	0.00%	8.01%	2.73%	89.06%	0.20%	62.79%	16.28%	20.93%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	9	19	6	0	3	222	6	0	13	5	191	1	5	3	1	0	484
PEAK HR FACTOR :	0.563	0.792	0.750	0.000	0.750	0.974	0.500	0.000	0.542	0.625	0.868	0.250	0.313	0.250	0.250	0.000	0.931
	0.773				0.947				0.875				0.450				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston
Control: No Control

Project ID: 25-430193-005
Date: 12/16/2025

Data - Cars

NS/EW Streets:	E St				E St				New Cypher St/W.B. Mason S Dwy				New Cypher St/W.B. Mason S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	5	0	0	0	4	1	0	3	4	3	0	0	1	0	0	22
6:15 AM	3	2	0	0	1	9	1	0	3	2	6	0	0	1	0	0	28
6:30 AM	1	10	1	0	0	11	0	0	5	1	6	0	3	0	0	0	38
6:45 AM	4	9	0	0	1	8	1	0	3	1	7	0	0	1	0	0	35
7:00 AM	1	6	3	0	1	19	4	0	4	1	11	0	0	0	0	0	50
7:15 AM	4	12	1	0	0	13	1	0	4	4	11	0	0	0	0	0	50
7:30 AM	2	17	2	0	1	25	0	0	5	1	13	0	0	0	0	0	66
7:45 AM	12	14	1	0	0	11	0	0	4	1	16	0	6	1	0	0	66
8:00 AM	7	17	2	0	1	19	2	0	9	2	14	0	16	2	2	0	93
8:15 AM	6	16	1	0	0	18	2	1	4	0	17	0	1	2	0	0	68
8:30 AM	3	16	1	0	0	31	1	0	5	2	17	0	1	0	0	0	77
8:45 AM	5	11	1	0	1	24	1	0	6	2	15	0	3	0	0	0	69
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	49	135	13	0	6	192	14	1	55	21	136	0	30	8	2	0	662
APPROACH %'s :	24.87%	68.53%	6.60%	0.00%	2.82%	90.14%	6.57%	0.47%	25.94%	9.91%	64.15%	0.00%	75.00%	20.00%	5.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	21	60	5	0	2	92	6	1	24	6	63	0	21	4	2	0	307
PEAK HR FACTOR :	0.750	0.882	0.625	0.000	0.500	0.742	0.750	0.250	0.667	0.750	0.926	0.000	0.328	0.500	0.250	0.000	0.825
	0.827				0.789				0.930				0.338				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	4	0	0	0	42	2	0	2	0	45	0	7	0	3	0	106
4:15 PM	1	5	3	0	0	43	2	0	3	0	38	0	2	0	3	0	100
4:30 PM	2	7	2	0	1	45	4	0	3	2	34	0	3	1	1	0	105
4:45 PM	3	2	0	0	0	52	3	0	3	2	16	0	2	1	0	0	84
5:00 PM	1	4	1	0	0	55	1	0	2	0	30	0	2	0	0	0	96
5:15 PM	2	3	2	0	1	49	3	0	4	2	35	0	0	0	0	0	101
5:30 PM	1	3	2	0	0	55	1	0	0	1	54	0	3	0	1	0	121
5:45 PM	4	6	1	0	1	54	0	0	4	1	44	0	0	0	0	0	115
6:00 PM	2	3	2	0	1	56	3	0	5	1	52	1	1	0	0	0	127
6:15 PM	2	5	0	0	1	54	1	0	2	0	40	0	0	2	0	0	107
6:30 PM	2	2	0	0	0	44	2	0	3	2	32	0	0	0	0	0	87
6:45 PM	0	4	1	0	0	28	1	0	4	0	30	0	3	1	1	0	73
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	48	14	0	5	577	23	0	35	11	450	1	23	5	9	0	1222
APPROACH %'s :	25.30%	57.83%	16.87%	0.00%	0.83%	95.37%	3.80%	0.00%	7.04%	2.21%	90.54%	0.20%	62.16%	13.51%	24.32%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	9	17	5	0	3	219	5	0	11	3	190	1	4	2	1	0	470
PEAK HR FACTOR :	0.563	0.708	0.625	0.000	0.750	0.978	0.417	0.000	0.550	0.750	0.880	0.250	0.333	0.250	0.250	0.000	0.925
	0.705				0.946				0.869				0.438				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston
Control: No Control

Project ID: 25-430193-005
Date: 12/16/2025

Data - Buses

NS/EW Streets:	E St				E St				New Cypher St/W.B. Mason S Dwy				New Cypher St/W.B. Mason S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	2	0	2	0	0	0	0	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%					50.00%	0.00%	50.00%	0.00%					
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	
	0.250								0.500								0.750

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston
Control: No Control

Project ID: 25-430193-005
Date: 12/16/2025

Data - HT

NS/EW Streets:	E St				E St				New Cypher St/W.B. Mason S Dwy				New Cypher St/W.B. Mason S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	1	0	0	2	2	0	1	0	0	0	7
6:30 AM	1	1	0	0	0	4	1	0	2	0	1	0	0	2	0	0	12
6:45 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	3
7:15 AM	1	2	1	0	0	3	0	0	1	1	1	0	0	0	1	0	11
7:30 AM	0	4	0	0	1	1	0	0	1	0	0	0	1	2	1	0	11
7:45 AM	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	4
8:00 AM	0	1	0	0	0	2	0	0	3	1	1	0	0	0	0	0	8
8:15 AM	0	0	1	0	0	0	0	0	1	0	1	0	1	2	0	0	6
8:30 AM	1	2	1	0	0	1	3	0	2	0	1	0	0	0	0	0	11
8:45 AM	1	1	0	0	1	0	2	0	1	0	0	0	0	1	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	13	4	0	2	12	7	0	13	4	10	0	4	7	2	0	82
APPROACH %'s :	19.05%	61.90%	19.05%	0.00%	9.52%	57.14%	33.33%	0.00%	48.15%	14.81%	37.04%	0.00%	30.77%	53.85%	15.38%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	4	2	0	1	3	5	0	7	1	3	0	1	3	0	0	32
PEAK HR FACTOR :	0.500	0.500	0.500	0.000	0.250	0.375	0.417	0.000	0.583	0.250	0.750	0.000	0.250	0.375	0.000	0.000	0.727
	0.500				0.563				0.550				0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	2	0	0	0	0	0	0	1	0	0	1	1	0	0	7
4:15 PM	0	0	0	0	0	2	0	0	1	0	2	0	0	0	0	0	5
4:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	3
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	3
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3
6:15 PM	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	4
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	5	0	0	7	1	0	4	3	4	0	4	2	0	0	33
APPROACH %'s :	0.00%	37.50%	62.50%	0.00%	0.00%	87.50%	12.50%	0.00%	36.36%	27.27%	36.36%	0.00%	66.67%	33.33%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	1	1	0	0	3	1	0	1	2	0	0	1	1	0	0	11
PEAK HR FACTOR :	0.000	0.250	0.250	0.000	0.000	0.750	0.250	0.000	0.250	0.500	0.000	0.000	0.250	0.250	0.000	0.000	0.688
	0.500				1.000				0.750				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston
Control: No Control

Project ID: 25-430193-005
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	E St				E St				New Cypher St/W.B. Mason S Dwy				New Cypher St/W.B. Mason S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	7
APPROACH %'s :	40.00%	60.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.500	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
	1.000				0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	6	1	0	0	0	3	0	0	1	0	0	12
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	85.71%	14.29%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	4
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.500
	0.250				0.250				0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston

Project ID: 25-430193-005
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	E St		E St		New Cypher St/W.B. Mason S Dwy		New Cypher St/W.B. Mason S Dwy				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	2	0	0	0	0	0	2
6:30 AM	0	0	0	0	1	1	0	0	0	0	2
6:45 AM	0	0	1	0	0	0	1	0	0	0	2
7:00 AM	0	0	0	0	3	0	0	0	0	0	3
7:15 AM	0	0	0	0	3	0	0	0	0	0	3
7:30 AM	0	0	0	1	1	1	1	0	0	0	4
7:45 AM	0	0	0	0	1	0	1	0	0	1	3
8:00 AM	0	0	0	2	1	0	0	0	0	0	3
8:15 AM	0	0	1	2	1	0	2	0	1	0	7
8:30 AM	0	0	0	2	7	0	1	0	0	0	10
8:45 AM	0	0	2	1	2	0	5	2	0	0	12
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	0	0	4	8	22	2	11	2	1	1	51
APPROACH %'s :			33.33%	66.67%	91.67%	8.33%	84.62%	15.38%	50.00%	50.00%	
PEAK HR :	**08:00 AM - 09:00 AM**										TOTAL
PEAK HR VOL :	0	0	3	7	11	0	8	2	1	0	32
PEAK HR FACTOR :			0.375	0.875	0.393		0.400	0.250	0.250		0.667
			0.833		0.393		0.357		0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
4:00 PM	0	0	0	1	0	1	0	1	0	0	3
4:15 PM	0	0	0	1	2	3	0	1	0	1	8
4:30 PM	0	0	0	0	0	1	0	3	0	0	4
4:45 PM	0	0	2	1	1	3	0	0	0	0	7
5:00 PM	0	0	0	0	1	4	1	0	0	0	6
5:15 PM	0	1	0	3	1	6	1	0	0	0	12
5:30 PM	0	0	0	1	0	1	1	1	0	0	4
5:45 PM	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	1	0	1	0	1	0	0	0	3
6:15 PM	0	0	1	0	1	3	1	0	0	0	6
6:30 PM	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	0	5	0	0	0	0	5
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	0	1	4	7	7	27	5	8	0	1	60
APPROACH %'s :	0.00%	100.00%	36.36%	63.64%	20.59%	79.41%	38.46%	61.54%	0.00%	100.00%	
PEAK HR :	**05:30 PM - 06:30 PM**										TOTAL
PEAK HR VOL :	0	0	2	1	2	4	3	2	0	0	14
PEAK HR FACTOR :			0.500	0.250	0.500	0.333	0.750	0.500			0.583
			0.750		0.375		0.625				

Prepared by National Data & Surveying Services

E St & New Cypher St/W.B. Mason S Dwy

Peak Hour Turning Movement Count

ID: 25-430193-005
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:30 PM - 06:30 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (E St)

AM	11	95	3	1	98	AM
NOON	0	0	0	0	0	NOON
PM	6	222	3	0	33	PM
	0	1	0	0		

EASTBOUND (New Cypher St/W.B. Mason S Dwy)

AM	NOON	PM	
41	0	19	
0	0	1	0
31	0	13	0
7	0	5	1
66	0	191	0
AM	NOON	PM	

WESTBOUND (New Cypher St/W.B. Mason S Dwy)

	PM	NOON	AM
0	1	0	2
1	3	0	7
0	5	0	22
0	0	0	0
	14	0	17
	PM	NOON	AM

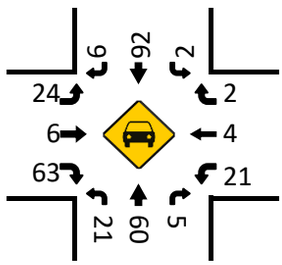
CONTROL: No Control

TEV	339 AM	0 NOON	484 PM
PHF	0.84		0.93

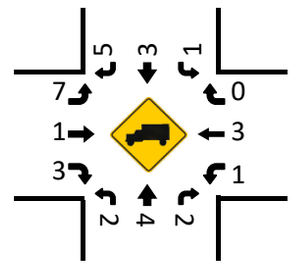
NORTHBOUND (E St)

	0	0	1	0		
PM	418	0	9	19	6	PM
NOON	0	0	0	0	0	NOON
AM	183	0	23	64	7	AM

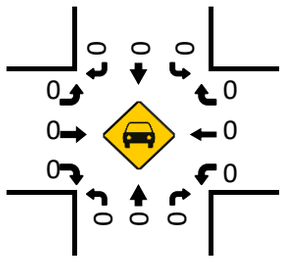
Cars (AM)



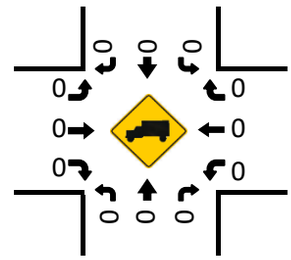
Total Trucks (AM)



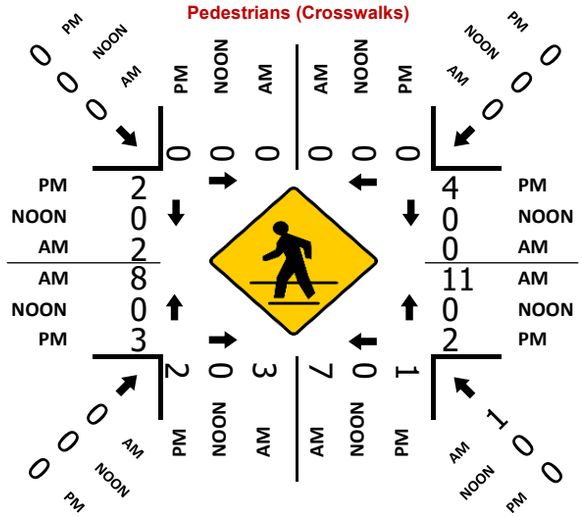
Cars (NOON)



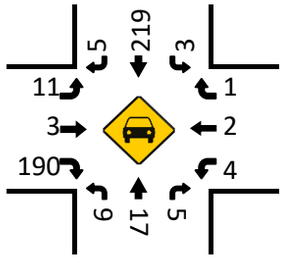
Total Trucks (NOON)



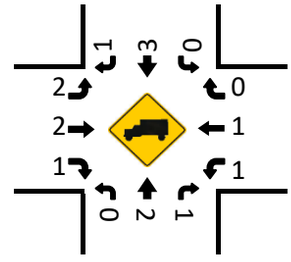
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-005
Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	E St Northbound						E St Southbound						New Cypher St/W.B. Mason S Dwy Eastbound						New Cypher St/W.B. Mason S Dwy Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	1	5	0	0	0	6	0	4	1	0	0	5	3	4	3	0	0	10	0	1	0	0	0	1	22
6:15 AM	3	3	0	0	0	6	1	9	2	0	0	12	3	4	8	0	0	15	1	1	0	0	2	2	35
6:30 AM	2	11	1	0	0	14	0	15	1	0	0	16	7	1	7	0	0	15	3	2	0	0	2	5	50
6:45 AM	4	9	1	0	1	14	1	8	1	0	0	10	4	1	7	0	1	12	0	1	0	0	0	1	37
Total	10	28	2	0	1	40	2	36	5	0	0	43	17	10	25	0	1	52	4	5	0	0	4	9	144
7:00 AM	1	6	3	0	0	10	1	20	4	0	0	25	4	1	12	0	0	17	1	0	0	0	3	1	53
7:15 AM	5	14	2	0	0	21	0	16	1	0	0	17	5	5	12	0	0	22	0	0	1	0	3	1	61
7:30 AM	2	21	2	0	1	25	2	26	0	0	0	28	6	1	13	0	1	20	1	2	1	0	2	4	77
7:45 AM	12	15	1	0	0	28	0	11	0	0	0	11	5	1	18	0	1	24	6	1	0	0	1	7	70
Total	20	56	8	0	1	84	3	73	5	0	0	81	20	8	55	0	2	83	8	3	2	0	9	13	261
8:00 AM	7	18	2	0	2	27	1	21	2	0	0	24	12	3	15	0	0	30	16	2	2	0	1	20	101
8:15 AM	6	16	2	0	3	24	0	18	2	1	0	21	5	0	18	0	2	23	2	4	0	0	1	6	74
8:30 AM	4	18	2	0	2	24	0	32	4	0	0	36	7	2	18	0	1	27	1	0	0	0	7	1	88
8:45 AM	6	12	1	0	3	19	2	24	3	0	0	29	7	2	15	0	7	24	3	1	0	0	2	4	76
Total	23	64	7	0	10	94	3	95	11	1	0	110	31	7	66	0	10	104	22	7	2	0	11	31	339
BREAK																									
4:00 PM	1	6	2	0	1	9	0	42	2	0	0	44	2	1	45	0	1	48	8	1	3	0	1	12	113
4:15 PM	1	5	3	0	1	9	0	45	2	0	0	47	4	0	40	0	1	44	2	0	3	0	5	5	105
4:30 PM	2	7	2	0	0	11	1	46	4	0	0	51	3	2	35	0	3	40	3	1	1	0	1	5	107
4:45 PM	3	2	0	0	3	5	0	53	3	0	0	56	4	2	17	0	0	23	3	1	0	0	4	4	88
Total	7	20	7	0	5	34	1	186	11	0	0	198	13	5	137	0	5	155	16	3	7	0	11	26	413
5:00 PM	1	4	2	0	0	7	0	55	1	0	0	56	2	0	30	0	1	32	2	0	0	0	5	2	97
5:15 PM	2	3	3	0	3	8	1	49	3	0	1	53	4	2	35	0	1	41	0	0	0	0	7	0	102
5:30 PM	1	3	2	0	1	6	0	56	1	0	0	57	0	2	55	0	2	57	4	0	1	0	1	5	125
5:45 PM	4	6	1	0	0	11	1	55	0	0	0	56	5	1	44	0	1	50	0	0	0	0	0	0	117
Total	8	16	8	0	4	32	2	215	5	0	1	222	11	5	164	0	5	180	6	0	1	0	13	7	441
6:00 PM	2	4	2	0	1	8	1	57	3	0	0	61	6	1	52	1	1	60	1	0	0	0	1	1	130
6:15 PM	2	6	1	0	1	9	1	54	2	0	0	57	2	1	40	0	1	43	0	3	0	0	4	3	112
6:30 PM	2	2	0	0	0	4	0	44	2	0	0	46	4	2	32	0	1	38	1	0	0	0	0	1	89
6:45 PM	0	4	1	0	0	5	0	28	1	0	0	29	5	0	31	0	0	36	3	1	1	0	5	5	75
Total	6	16	4	0	2	26	2	183	8	0	0	193	17	4	155	1	3	177	5	4	1	0	10	10	406
Grand Total	74	200	36	0	23	310	13	788	45	1	1	847	109	39	602	1	26	751	61	22	13	0	58	96	2004
Apprch %	23.9	64.5	11.6	0.0	7.4		1.5	93.0	5.3	0.1	0.1		14.5	5.2	80.2	0.1	3.5		63.5	22.9	13.5	0.0	60.4		
Total %	3.7	10.0	1.8	0.0	1.1	15.5	0.6	39.3	2.2	0.0	0.0	42.3	5.4	1.9	30.0	0.0	1.3	37.5	3.0	1.1	0.6	0.0	2.9	4.8	
Cars, PU, Vans	70	183	27	0		280	11	769	37	1		818	90	32	586	1		709	53	13	11	0		77	1884
% Cars, PU, Vans	94.6	91.5	75.0	0.0		90.3	84.6	97.6	82.2	100.0		96.6	82.6	82.1	97.3	100.0		94.4	86.9	59.1	84.6	0.0		80.2	94.0
Buses	0	1	0	0		1	0	0	0	0		0	2	0	2	0		4	0	0	0	0		0	5
%Buses	0.0	0.5	0.0	0.0		0.3	0.0	0.0	0.0	0.0		0.0	1.8	0.0	0.3	0.0		0.5	0.0	0.0	0.0	0.0		0.0	0.2
Heavy Trucks	4	16	9	0		29	2	19	8	0		29	17	7	14	0		38	8	9	2	0		19	115
%Heavy Trucks	5.4	8.0	25.0	0.0		9.4	15.4	2.4	17.8	0.0		3.4	15.6	17.9	2.3	0.0		5.1	13.1	40.9	15.4	0.0		19.8	5.7

Project ID: 25-430193-005
Location: E St & New Cypher St/W.B. Mason S Dwy
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	E St Northbound					E St Southbound					New Cypher St/W.B. Mason S Dwy Eastbound					New Cypher St/W.B. Mason S Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	7	18	2	0	27	1	21	2	0	24	12	3	15	0	30	16	2	2	0	20	101
8:15 AM	6	16	2	0	24	0	18	2	1	21	5	0	18	0	23	2	4	0	0	6	74
8:30 AM	4	18	2	0	24	0	32	4	0	36	7	2	18	0	27	1	0	0	0	1	88
8:45 AM	6	12	1	0	19	2	24	3	0	29	7	2	15	0	24	3	1	0	0	4	76
Total Volume	23	64	7	0	94	3	95	11	1	110	31	7	66	0	104	22	7	2	0	31	339
% App. Total	24.5	68.1	7.4	0.0	100	2.7	86.4	10.0	0.9	100	29.8	6.7	63.5	0.0	100	71.0	22.6	6.5	0.0	100	
PHF					0.870					0.764					0.867					0.388	0.839
Cars, PU, Vans	21	60	5	0	86	2	92	6	1	101	24	6	63	0	93	21	4	2	0	27	307
% Cars, PU, Vans	91.3	93.8	71.4	0.0	91.5	66.7	96.8	54.5	100.0	91.8	77.4	85.7	95.5	0.0	89.4	95.5	57.1	100.0	0.0	87.1	90.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Trucks	2	4	2	0	8	1	3	5	0	9	7	1	3	0	11	1	3	0	0	4	32
%Heavy Trucks	8.7	6.3	28.6	0.0	8.5	33.3	3.2	45.5	0.0	8.2	22.6	14.3	4.5	0.0	10.6	4.5	42.9	0.0	0.0	12.9	9.4

PM

	E St Northbound					E St Southbound					New Cypher St/W.B. Mason S Dwy Eastbound					New Cypher St/W.B. Mason S Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
5:30 PM	1	3	2	0	6	0	56	1	0	57	0	2	55	0	57	4	0	1	0	5	125
5:45 PM	4	6	1	0	11	1	55	0	0	56	5	1	44	0	50	0	0	0	0	0	117
6:00 PM	2	4	2	0	8	1	57	3	0	61	6	1	52	1	60	1	0	0	0	1	130
6:15 PM	2	6	1	0	9	1	54	2	0	57	2	1	40	0	43	0	3	0	0	3	112
Total Volume	9	19	6	0	34	3	222	6	0	231	13	5	191	1	210	5	3	1	0	9	484
% App. Total	26.5	55.9	17.6	0.0	100	1.3	96.1	2.6	0.0	100	6.2	2.4	91.0	0.5	100	55.6	33.3	11.1	0.0	100	
PHF					0.773					0.947					0.875					0.450	0.931
Cars, PU, Vans	9	17	5	0	31	3	219	5	0	227	11	3	190	1	205	4	2	1	0	7	470
% Cars, PU, Vans	100.0	89.5	83.3	0.0	91.2	100.0	98.6	83.3	0.0	98.3	84.6	60.0	99.5	100.0	97.6	80.0	66.7	100.0	0.0	77.8	97.1
Buses	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	3
%Buses	0.0	5.3	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.6
Heavy Trucks	0	1	1	0	2	0	3	1	0	4	1	2	0	0	3	1	1	0	0	2	11
%Heavy Trucks	0.0	5.3	16.7	0.0	5.9	0.0	1.4	16.7	0.0	1.7	7.7	40.0	0.0	0.0	1.4	20.0	33.3	0.0	0.0	22.2	2.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-006
Date: 12/16/2025

Data - Total

NS/EW Streets:	F St				F St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	4	0	8	0	0	0	0	0	0	21	0	0	0	24	0	1	58
6:15 AM	2	0	3	0	0	0	0	0	0	26	0	0	0	35	0	0	66
6:30 AM	6	0	10	0	0	0	0	0	0	16	0	0	0	47	0	0	79
6:45 AM	7	0	10	0	0	0	0	0	0	23	0	0	0	45	0	0	85
7:00 AM	5	0	2	0	0	0	0	0	0	42	0	0	0	50	0	0	99
7:15 AM	10	0	10	0	0	0	0	0	0	35	0	0	0	89	0	0	144
7:30 AM	16	0	14	0	0	0	0	0	0	31	0	0	0	77	0	0	138
7:45 AM	17	0	14	0	0	0	0	0	0	57	0	0	0	67	0	0	155
8:00 AM	11	0	4	0	0	0	0	0	0	56	0	0	0	111	0	0	182
8:15 AM	22	0	13	0	0	0	0	0	0	44	0	0	0	106	0	0	185
8:30 AM	18	0	14	0	0	0	0	0	0	45	0	0	0	97	0	1	175
8:45 AM	6	0	13	0	0	0	0	0	0	41	0	0	0	92	0	0	152
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	124	0	115	0	0	0	0	0	0	437	0	0	0	840	0	2	1518
APPROACH %'s :	51.88%	0.00%	48.12%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	99.76%	0.00%	0.24%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	68	0	45	0	0	0	0	0	0	202	0	0	0	381	0	1	697
PEAK HR FACTOR :	0.773	0.000	0.804	0.000	0.000	0.000	0.000	0.000	0.000	0.886	0.000	0.000	0.000	0.858	0.000	0.250	0.942
	0.807				0.886								0.860				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	0	12	0	0	0	0	0	0	45	0	0	0	38	0	0	101
4:15 PM	12	0	13	0	0	0	0	0	0	62	0	1	0	35	0	0	123
4:30 PM	7	0	10	0	0	0	0	0	0	88	0	0	0	50	0	0	155
4:45 PM	5	0	20	0	0	0	0	0	0	63	0	0	0	47	0	1	136
5:00 PM	11	0	14	0	0	0	0	0	0	57	0	0	0	64	0	0	146
5:15 PM	7	0	18	0	0	0	0	0	0	86	0	0	0	55	0	0	166
5:30 PM	4	0	14	0	0	0	0	0	0	68	0	0	0	50	0	0	136
5:45 PM	8	0	14	0	0	0	0	0	0	67	0	0	0	43	0	0	132
6:00 PM	7	0	12	0	0	0	0	0	0	68	0	0	0	67	0	0	154
6:15 PM	10	0	22	0	0	0	0	0	0	84	0	0	0	56	0	0	172
6:30 PM	8	0	11	0	0	0	0	0	0	54	0	0	0	46	0	1	120
6:45 PM	9	0	9	0	0	0	0	0	0	62	0	0	0	41	0	0	121
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	94	0	169	0	0	0	0	0	0	804	0	1	0	592	0	2	1662
APPROACH %'s :	35.74%	0.00%	64.26%	0.00%					0.00%	99.88%	0.00%	0.12%	0.00%	99.66%	0.00%	0.34%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	30	0	62	0	0	0	0	0	0	294	0	0	0	216	0	1	603
PEAK HR FACTOR :	0.682	0.000	0.775	0.000	0.000	0.000	0.000	0.000	0.000	0.835	0.000	0.000	0.000	0.844	0.000	0.250	0.908
	0.920								0.835				0.848				

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-006
Date: 12/16/2025

Data - Cars

NS/EW Streets:	F St				F St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	4	0	7	0	0	0	0	0	0	17	0	0	0	18	0	1	47
6:15 AM	2	0	3	0	0	0	0	0	0	20	0	0	0	27	0	0	52
6:30 AM	5	0	9	0	0	0	0	0	0	9	0	0	0	41	0	0	64
6:45 AM	7	0	9	0	0	0	0	0	0	20	0	0	0	39	0	0	75
7:00 AM	5	0	2	0	0	0	0	0	0	33	0	0	0	40	0	0	80
7:15 AM	10	0	10	0	0	0	0	0	0	28	0	0	0	78	0	0	126
7:30 AM	16	0	14	0	0	0	0	0	0	22	0	0	0	68	0	0	120
7:45 AM	17	0	13	0	0	0	0	0	0	50	0	0	0	64	0	0	144
8:00 AM	11	0	4	0	0	0	0	0	0	50	0	0	0	105	0	0	170
8:15 AM	22	0	13	0	0	0	0	0	0	37	0	0	0	100	0	0	172
8:30 AM	18	0	13	0	0	0	0	0	0	45	0	0	0	91	0	1	168
8:45 AM	6	0	13	0	0	0	0	0	0	40	0	0	0	86	0	0	145
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	123	0	110	0	0	0	0	0	0	371	0	0	0	757	0	2	1363
APPROACH %'s :	52.79%	0.00%	47.21%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	99.74%	0.00%	0.26%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	68	0	43	0	0	0	0	0	0	182	0	0	0	360	0	1	654
PEAK HR FACTOR :	0.773	0.000	0.827	0.000	0.000	0.000	0.000	0.000	0.000	0.910	0.000	0.000	0.000	0.857	0.000	0.250	0.951
	0.793								0.910				0.860				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	5	0	12	0	0	0	0	0	0	45	0	0	0	37	0	0	99
4:15 PM	12	0	12	0	0	0	0	0	0	60	0	1	0	34	0	0	119
4:30 PM	7	0	10	0	0	0	0	0	0	87	0	0	0	48	0	0	152
4:45 PM	5	0	20	0	0	0	0	0	0	59	0	0	0	46	0	1	131
5:00 PM	11	0	14	0	0	0	0	0	0	57	0	0	0	62	0	0	144
5:15 PM	6	0	18	0	0	0	0	0	0	85	0	0	0	55	0	0	164
5:30 PM	3	0	14	0	0	0	0	0	0	66	0	0	0	49	0	0	132
5:45 PM	8	0	14	0	0	0	0	0	0	66	0	0	0	41	0	0	129
6:00 PM	7	0	12	0	0	0	0	0	0	64	0	0	0	66	0	0	149
6:15 PM	10	0	22	0	0	0	0	0	0	83	0	0	0	55	0	0	170
6:30 PM	8	0	11	0	0	0	0	0	0	54	0	0	0	43	0	1	117
6:45 PM	9	0	9	0	0	0	0	0	0	61	0	0	0	38	0	0	117
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	91	0	168	0	0	0	0	0	0	787	0	1	0	574	0	2	1623
APPROACH %'s :	35.14%	0.00%	64.86%	0.00%					0.00%	99.87%	0.00%	0.13%	0.00%	99.65%	0.00%	0.35%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	29	0	62	0	0	0	0	0	0	288	0	0	0	211	0	1	591
PEAK HR FACTOR :	0.659	0.000	0.775	0.000	0.000	0.000	0.000	0.000	0.000	0.828	0.000	0.000	0.000	0.851	0.000	0.250	0.901
	0.910								0.828				0.855				

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-006
Date: 12/16/2025

Data - Buses

NS/EW Streets:	F St				F St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	29	0	0	0	6	0	0	35
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	0	1	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.000	0.000	0.250	0.000	0.000	0.500
										0.438				0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	10
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-006
Date: 12/16/2025

Data - HT

NS/EW Streets:	F St				F St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	6	0	0	8
6:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	0	12
6:30 AM	1	0	1	0	0	0	0	0	0	4	0	0	0	6	0	0	12
6:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	6	0	0	8
7:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	9	0	0	14
7:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	11	0	0	14
7:30 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	8	0	0	13
7:45 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0	0	7
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11
8:15 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	6
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	5	0	0	0	0	0	0	37	0	0	0	77	0	0	120
APPROACH %'s :	16.67%	0.00%	83.33%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	0	0	13	0	0	0	20	0	0	35
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.000	0.000	0.000	0.833	0.000	0.000	0.795
	0.500				0.000				0.650				0.833				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
4:15 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:15 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	1	0	0	0	0	0	0	13	0	0	0	12	0	0	29
APPROACH %'s :	75.00%	0.00%	25.00%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	6	0	0	0	5	0	0	12
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.625	0.000	0.000	0.600
	0.250				0.000				0.375				0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-006
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	F St				F St				W First St				W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	2	0	0	0	0	0	0	0	0	0	1	6	0	0	11
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%									14.29%	85.71%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.625
	0.250												0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	3	2	0	0	3	0	0	8
APPROACH %'s :									0.00%	60.00%	40.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.500
									0.500								

National Data & Surveying Services

Intersection Turning Movement Count

Location: F St & W First St
City: Boston

Project ID: 25-430193-006
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	F St		F St		W First St		W First St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	1	0	0	0	0	0	0	1
6:15 AM	1	1	1	0	2	0	0	2	7
6:30 AM	4	1	0	0	0	0	0	0	5
6:45 AM	0	0	1	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	2	0	0	0	1	0	5
7:30 AM	1	0	0	1	0	0	0	0	2
7:45 AM	1	2	0	2	0	0	0	0	5
8:00 AM	0	4	1	2	1	0	1	0	9
8:15 AM	1	3	0	0	0	0	0	1	5
8:30 AM	0	1	0	3	0	0	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	8	15	5	8	3	0	2	3	44
APPROACH %'s :	34.78%	65.22%	38.46%	61.54%	100.00%	0.00%	40.00%	60.00%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	2	10	1	7	1	0	1	1	23
PEAK HR FACTOR :	0.500	0.625	0.250	0.583	0.250		0.250	0.250	
	0.750		0.667		0.250		0.500		0.639

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	1
4:15 PM	1	3	2	1	1	1	0	1	10
4:30 PM	2	0	0	1	0	0	1	0	4
4:45 PM	2	1	3	1	0	0	0	0	7
5:00 PM	2	2	1	0	0	0	0	2	7
5:15 PM	2	0	1	0	0	0	1	0	4
5:30 PM	1	1	0	0	0	0	0	0	2
5:45 PM	1	0	1	1	0	1	0	0	4
6:00 PM	1	2	1	2	0	0	0	0	6
6:15 PM	1	4	0	4	0	0	0	2	11
6:30 PM	1	1	4	2	0	1	0	0	9
6:45 PM	3	2	0	1	1	0	0	0	7
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	17	16	13	13	2	4	2	5	72
APPROACH %'s :	51.52%	48.48%	50.00%	50.00%	33.33%	66.67%	28.57%	71.43%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	8	3	5	2	0	0	2	2	22
PEAK HR FACTOR :	1.000	0.375	0.417	0.500			0.500	0.250	
	0.688		0.438				0.500		0.786

Prepared by National Data & Surveying Services

F St & W First St

Peak Hour Turning Movement Count

ID: 25-430193-006
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 07:00 PM

CONTROL: 1-Way Stop(NB)

	AM	NOON	PM
TEV	697	0	603
PHF	0.94		0.91

SOUTHBOUND (F St)

	L	T	R	U	Total	
AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (W First St)

	L	T	R	U	Total	
AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

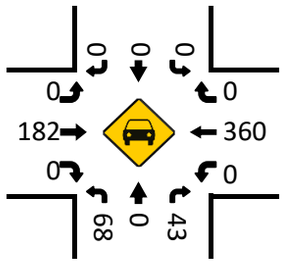
WESTBOUND (W First St)

	L	T	R	U	Total	
AM	449	0	246	0	695	AM
NOON	0	0	0	1	1	NOON
PM	202	0	294	0	496	PM

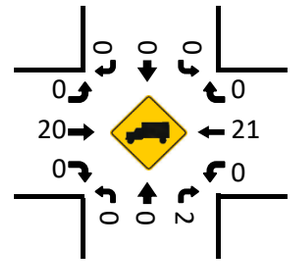
NORTHBOUND (F St)

	L	T	R	U	Total	
AM	0	0	68	0	68	AM
NOON	0	0	0	0	0	NOON
PM	0	0	30	0	30	PM

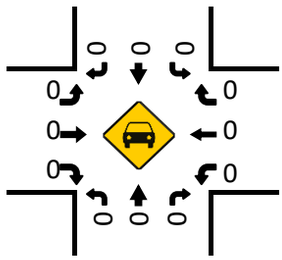
Cars (AM)



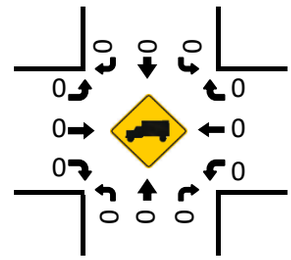
Total Trucks (AM)



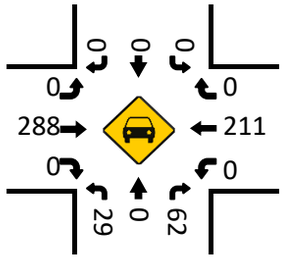
Cars (NOON)



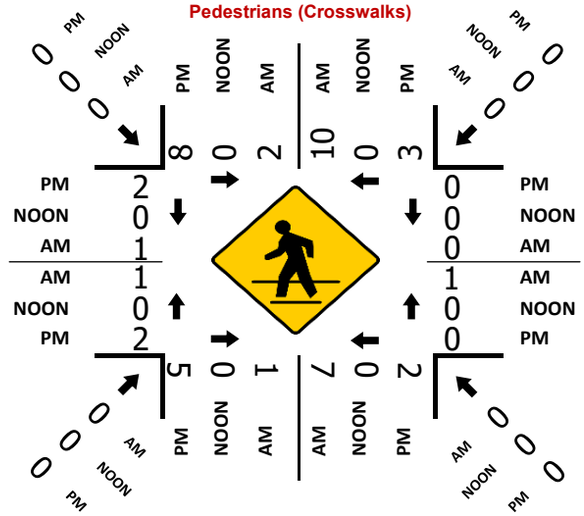
Total Trucks (NOON)



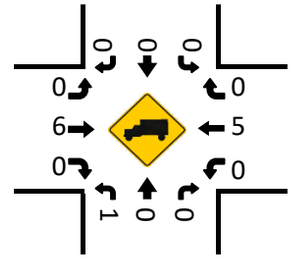
Cars (PM)



Pedestrians (Crosswalks)



Total Trucks (PM)



Project ID: 25-430193-006
Location: F St & W First St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	F St Northbound						F St Southbound						W First St Eastbound						W First St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	4	0	8	0	0	12	0	0	0	0	1	0	0	21	0	0	0	21	0	24	0	1	0	25	58
6:15 AM	2	0	3	0	1	5	0	0	0	0	2	0	0	26	0	0	2	26	0	35	0	0	2	35	66
6:30 AM	6	0	10	0	0	16	0	0	0	0	5	0	0	16	0	0	0	16	0	47	0	0	0	47	79
6:45 AM	7	0	10	0	1	17	0	0	0	0	0	0	0	23	0	0	0	23	0	45	0	0	0	45	85
Total	19	0	31	0	2	50	0	0	0	0	8	0	0	86	0	0	2	86	0	151	0	1	2	152	288
7:00 AM	5	0	2	0	0	7	0	0	0	0	0	0	0	42	0	0	0	42	0	50	0	0	0	50	99
7:15 AM	10	0	10	0	2	20	0	0	0	0	2	0	0	35	0	0	1	35	0	89	0	0	0	89	144
7:30 AM	16	0	14	0	1	30	0	0	0	0	1	0	0	31	0	0	0	31	0	77	0	0	0	77	138
7:45 AM	17	0	14	0	2	31	0	0	0	0	3	0	0	57	0	0	0	57	0	67	0	0	0	67	155
Total	48	0	40	0	5	88	0	0	0	0	6	0	0	165	0	0	1	165	0	283	0	0	0	283	536
8:00 AM	11	0	4	0	3	15	0	0	0	0	4	0	0	56	0	0	1	56	0	111	0	0	1	111	182
8:15 AM	22	0	13	0	0	35	0	0	0	0	4	0	0	44	0	0	1	44	0	106	0	0	0	106	185
8:30 AM	18	0	14	0	3	32	0	0	0	0	1	0	0	45	0	0	0	45	0	97	0	1	0	98	175
8:45 AM	6	0	13	0	0	19	0	0	0	0	0	0	0	41	0	0	0	41	0	92	0	0	0	92	152
Total	57	0	44	0	6	101	0	0	0	0	9	0	0	186	0	0	2	186	0	406	0	1	1	407	694
BREAK																									
4:00 PM	6	0	12	0	0	18	0	0	0	0	0	0	0	45	0	0	0	45	0	38	0	0	1	38	101
4:15 PM	12	0	13	0	3	25	0	0	0	0	4	0	0	62	0	1	1	63	0	35	0	0	2	35	123
4:30 PM	7	0	10	0	1	17	0	0	0	0	2	0	0	88	0	0	1	88	0	50	0	0	0	50	155
4:45 PM	5	0	20	0	4	25	0	0	0	0	3	0	0	63	0	0	0	63	0	47	0	1	0	48	136
Total	30	0	55	0	8	85	0	0	0	0	9	0	0	258	0	1	2	259	0	170	0	1	3	171	515
5:00 PM	11	0	14	0	1	25	0	0	0	0	4	0	0	57	0	0	2	57	0	64	0	0	0	64	146
5:15 PM	7	0	18	0	1	25	0	0	0	0	2	0	0	86	0	0	1	86	0	55	0	0	0	55	166
5:30 PM	4	0	14	0	0	18	0	0	0	0	2	0	0	68	0	0	0	68	0	50	0	0	0	50	136
5:45 PM	8	0	14	0	2	22	0	0	0	0	1	0	0	67	0	0	0	67	0	43	0	0	1	43	132
Total	30	0	60	0	4	90	0	0	0	0	9	0	0	278	0	0	3	278	0	212	0	0	1	212	580
6:00 PM	7	0	12	0	3	19	0	0	0	0	3	0	0	68	0	0	0	68	0	67	0	0	0	67	154
6:15 PM	10	0	22	0	4	32	0	0	0	0	5	0	0	84	0	0	2	84	0	56	0	0	0	56	172
6:30 PM	8	0	11	0	6	19	0	0	0	0	2	0	0	54	0	0	0	54	0	46	0	1	1	47	120
6:45 PM	9	0	9	0	1	18	0	0	0	0	5	0	0	62	0	0	0	62	0	41	0	0	1	41	121
Total	34	0	54	0	14	88	0	0	0	0	15	0	0	268	0	0	2	268	0	210	0	1	2	211	567
Grand Total	218	0	284	0	39	502	0	0	0	0	56	0	0	1241	0	1	12	1242	0	1432	0	4	9	1436	3180
Apprch %	43.4	0.0	56.6	0.0	7.8		0.0	0.0	0.0	0.0	0.0		0.0	99.9	0.0	0.1	1.0		0.0	99.7	0.0	0.3	0.6		
Total %	6.9	0.0	8.9	0.0	1.2	15.8	0.0	0.0	0.0	0.0	1.8	0.0	0.0	39.0	0.0	0.0	0.4	39.1	0.0	45.0	0.0	0.1	0.3	45.2	
Cars, PU, Vans	214	0	278	0		492	0	0	0	0		0	0	1158	0	1		1159	0	1331	0	4		1335	2986
% Cars, PU, Vans	98.2	0.0	97.9	0.0		98.0	0.0	0.0	0.0	0.0		0.0	0.0	93.3	0.0	100.0		93.3	0.0	92.9	0.0	100.0		93.0	93.9
Buses	0	0	0	0		0	0	0	0	0		0	0	33	0	0		33	0	12	0	0		12	45
%Buses	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	2.7	0.0	0.0		2.7	0.0	0.8	0.0	0.0		0.8	1.4
Heavy Trucks	4	0	6	0		10	0	0	0	0		0	0	50	0	0		50	0	89	0	0		89	149
%Heavy Trucks	1.8	0.0	2.1	0.0		2.0	0.0	0.0	0.0	0.0		0.0	0.0	4.0	0.0	0.0		4.0	0.0	6.2	0.0	0.0		6.2	4.7

Project ID: 25-430193-006
Location: F St & W First St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	F St Northbound					F St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	17	0	14	0	31	0	0	0	0	0	0	57	0	0	57	0	67	0	0	67	155
8:00 AM	11	0	4	0	15	0	0	0	0	0	0	56	0	0	56	0	111	0	0	111	182
8:15 AM	22	0	13	0	35	0	0	0	0	0	0	44	0	0	44	0	106	0	0	106	185
8:30 AM	18	0	14	0	32	0	0	0	0	0	0	45	0	0	45	0	97	0	1	98	175
Total Volume	68	0	45	0	113	0	0	0	0	0	0	202	0	0	202	0	381	0	1	382	697
% App. Total	60.2	0.0	39.8	0.0	100	0.0	0.0	0.0	0.0	0	0.0	100.0	0.0	0.0	100	0.0	99.7	0.0	0.3	100	
PHF					0.807										0.886					0.860	0.942
Cars, PU, Vans	68	0	43	0	111	0	0	0	0	0	0	182	0	0	182	0	360	0	1	361	654
% Cars, PU, Vans	100.0	0.0	95.6	0.0	98.2	0.0	0.0	0.0	0.0	0.0	0.0	90.1	0.0	0.0	90.1	0.0	94.5	0.0	100.0	94.5	93.8
Buses	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	0	1	0	0	1	8
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.3	0.0	0.0	0.3	1.1
Heavy Trucks	0	0	2	0	2	0	0	0	0	0	0	13	0	0	13	0	20	0	0	20	35
%Heavy Trucks	0.0	0.0	4.4	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	6.4	0.0	5.2	0.0	0.0	5.2	5.0

PM

	F St Northbound					F St Southbound					W First St Eastbound					W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	7	0	10	0	17	0	0	0	0	0	0	88	0	0	88	0	50	0	0	50	155
4:45 PM	5	0	20	0	25	0	0	0	0	0	0	63	0	0	63	0	47	0	1	48	136
5:00 PM	11	0	14	0	25	0	0	0	0	0	0	57	0	0	57	0	64	0	0	64	146
5:15 PM	7	0	18	0	25	0	0	0	0	0	0	86	0	0	86	0	55	0	0	55	166
Total Volume	30	0	62	0	92	0	0	0	0	0	0	294	0	0	294	0	216	0	1	217	603
% App. Total	32.6	0.0	67.4	0.0	100	0.0	0.0	0.0	0.0	0	0.0	100.0	0.0	0.0	100	0.0	99.5	0.0	0.5	100	
PHF					0.920										0.835					0.848	0.908
Cars, PU, Vans	29	0	62	0	91	0	0	0	0	0	0	288	0	0	288	0	211	0	1	212	591
% Cars, PU, Vans	96.7	0.0	100.0	0.0	98.9	0.0	0.0	0.0	0.0	0.0	0.0	98.0	0.0	0.0	98.0	0.0	97.7	0.0	100.0	97.7	98.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Trucks	1	0	0	0	1	0	0	0	0	0	0	6	0	0	6	0	5	0	0	5	12
%Heavy Trucks	3.3	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.3	0.0	0.0	2.3	2.0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston
Control: 4-Way Stop

Project ID: 25-430193-007
Date: 12/16/2025

Data - Total

NS/EW Streets:	Pappas Way/ W First St				Pappas Way/ W First St				E/W First St				E/W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	3	13	0	0	16	0	3	0	6	22	0	0	0	18	11	0	92
6:15 AM	6	7	1	0	13	0	7	0	6	26	0	0	0	23	9	0	98
6:30 AM	13	7	1	0	18	0	5	0	9	16	0	1	0	27	12	0	109
6:45 AM	15	3	2	0	23	0	6	0	7	26	0	2	0	18	16	0	118
7:00 AM	11	9	0	0	22	0	10	0	6	34	0	1	0	27	16	0	136
7:15 AM	20	4	4	0	19	0	12	0	7	35	0	1	0	57	29	0	188
7:30 AM	17	13	0	0	24	0	12	0	7	37	0	0	0	44	17	0	171
7:45 AM	23	4	1	0	24	0	8	0	12	59	0	0	0	44	22	0	197
8:00 AM	26	9	0	0	37	0	2	0	4	57	0	0	0	79	26	0	240
8:15 AM	30	7	1	0	25	0	14	0	12	51	0	0	0	56	22	0	218
8:30 AM	21	6	2	0	26	0	4	0	8	50	0	0	0	76	22	0	215
8:45 AM	28	12	2	0	32	0	7	0	6	44	0	0	0	53	19	0	203
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	213	94	14	0	279	0	90	0	90	457	0	5	0	522	221	0	1985
APPROACH %'s :	66.36%	29.28%	4.36%	0.00%	75.61%	0.00%	24.39%	0.00%	16.30%	82.79%	0.00%	0.91%	0.00%	70.26%	29.74%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	105	34	5	0	120	0	27	0	30	202	0	0	0	264	89	0	876
PEAK HR FACTOR :	0.875	0.708	0.625	0.000	0.811	0.000	0.482	0.000	0.625	0.886	0.000	0.000	0.000	0.835	0.856	0.000	0.913
	0.857				0.942				0.921				0.840				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	5	4	0	64	0	8	0	3	54	0	0	0	26	14	0	183
4:15 PM	4	2	5	0	64	0	8	0	3	68	0	0	0	25	5	0	184
4:30 PM	8	7	4	0	72	0	8	0	4	93	0	1	0	33	10	1	241
4:45 PM	8	6	4	0	58	0	11	0	8	75	0	0	0	30	5	0	205
5:00 PM	13	5	2	0	57	0	12	0	8	65	0	0	0	38	11	0	211
5:15 PM	10	5	3	0	75	0	12	0	10	92	0	0	0	32	8	0	247
5:30 PM	11	4	3	0	85	0	9	0	4	78	0	0	0	31	10	0	235
5:45 PM	9	2	6	0	65	0	8	0	5	72	0	0	0	28	5	0	200
6:00 PM	17	3	4	0	61	0	10	0	9	70	0	2	0	37	11	0	224
6:15 PM	11	6	3	0	62	0	14	0	4	98	0	1	0	33	9	0	241
6:30 PM	14	3	6	0	50	0	8	0	5	60	0	0	0	27	10	0	183
6:45 PM	8	5	6	0	41	0	14	0	3	69	0	0	0	19	9	0	174
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	118	53	50	0	754	0	122	0	66	894	0	4	0	359	107	1	2528
APPROACH %'s :	53.39%	23.98%	22.62%	0.00%	86.07%	0.00%	13.93%	0.00%	6.85%	92.74%	0.00%	0.41%	0.00%	76.87%	22.91%	0.21%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	47	14	16	0	286	0	39	0	28	312	0	2	0	128	34	0	906
PEAK HR FACTOR :	0.691	0.700	0.667	0.000	0.841	0.000	0.813	0.000	0.700	0.848	0.000	0.250	0.000	0.865	0.773	0.000	0.917
	0.802				0.864				0.838				0.844				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston
Control: 4-Way Stop

Project ID: 25-430193-007
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Pappas Way/ W First St				Pappas Way/ W First St				E/W First St				E/W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	3	12	0	0	15	0	3	0	5	18	0	0	0	13	11	0	80
6:15 AM	6	6	1	0	13	0	6	0	4	22	0	0	0	16	9	0	83
6:30 AM	13	7	1	0	17	0	1	0	6	11	0	1	0	25	12	0	94
6:45 AM	14	3	2	0	20	0	4	0	7	22	0	2	0	15	16	0	105
7:00 AM	11	8	0	0	19	0	3	0	5	27	0	1	0	23	14	0	111
7:15 AM	19	4	4	0	15	0	7	0	6	29	0	1	0	53	29	0	167
7:30 AM	17	13	0	0	23	0	5	0	6	28	0	0	0	42	17	0	151
7:45 AM	23	4	1	0	20	0	7	0	11	53	0	0	0	42	22	0	183
8:00 AM	26	9	0	0	34	0	0	0	4	51	0	0	0	73	25	0	222
8:15 AM	29	7	1	0	20	0	11	0	11	45	0	0	0	55	20	0	199
8:30 AM	21	6	2	0	25	0	3	0	7	49	0	0	0	71	22	0	206
8:45 AM	28	11	2	0	30	0	4	0	6	43	0	0	0	50	18	0	192
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	210	90	14	0	251	0	54	0	78	398	0	5	0	478	215	0	1793
APPROACH %'s :	66.88%	28.66%	4.46%	0.00%	82.30%	0.00%	17.70%	0.00%	16.22%	82.74%	0.00%	1.04%	0.00%	68.98%	31.02%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	104	33	5	0	109	0	18	0	28	188	0	0	0	249	85	0	819
PEAK HR FACTOR :	0.897	0.750	0.625	0.000	0.801	0.000	0.409	0.000	0.636	0.922	0.000	0.000	0.000	0.853	0.850	0.000	0.922
	0.866				0.934				0.964				0.852				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	5	4	0	64	0	7	0	3	54	0	0	0	26	14	0	182
4:15 PM	4	2	5	0	63	0	7	0	0	68	0	0	0	25	5	0	179
4:30 PM	7	7	4	0	72	0	7	0	4	92	0	1	0	33	10	1	238
4:45 PM	7	6	4	0	58	0	11	0	7	72	0	0	0	30	5	0	200
5:00 PM	13	5	2	0	57	0	11	0	8	65	0	0	0	37	11	0	209
5:15 PM	10	4	3	0	75	0	12	0	10	91	0	0	0	32	8	0	245
5:30 PM	11	4	3	0	85	0	8	0	4	76	0	0	0	31	9	0	231
5:45 PM	9	2	6	0	64	0	7	0	5	71	0	0	0	27	5	0	196
6:00 PM	16	3	4	0	61	0	10	0	7	68	0	2	0	37	11	0	219
6:15 PM	11	6	3	0	62	0	14	0	4	97	0	1	0	32	9	0	239
6:30 PM	14	3	6	0	49	0	8	0	5	60	0	0	0	24	10	0	179
6:45 PM	8	5	6	0	41	0	13	0	3	68	0	0	0	17	9	0	170
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	115	52	50	0	751	0	115	0	60	882	0	4	0	351	106	1	2487
APPROACH %'s :	53.00%	23.96%	23.04%	0.00%	86.72%	0.00%	13.28%	0.00%	6.34%	93.23%	0.00%	0.42%	0.00%	76.64%	23.14%	0.22%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	46	13	16	0	285	0	37	0	26	306	0	2	0	127	33	0	891
PEAK HR FACTOR :	0.719	0.813	0.667	0.000	0.838	0.000	0.771	0.000	0.650	0.841	0.000	0.250	0.000	0.858	0.750	0.000	0.909
	0.815				0.866				0.827				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston
Control: 4-Way Stop

Project ID: 25-430193-007
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Pappas Way/ W First St				Pappas Way/ W First St				E/W First St				E/W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
6:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	5
7:30 AM	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	4	0	4	25	0	0	0	3	1	0	37
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	13.79%	86.21%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	0	4	0	0	0	3	1	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.375	0.250	0.000	0.625
					0.250				0.500				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	4	0	0	0	5	0	0	10
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.375
									0.375								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston
Control: 4-Way Stop

Project ID: 25-430193-007
Date: 12/16/2025

Data - HT

NS/EW Streets:	Pappas Way/ W First St				Pappas Way/ W First St				E/W First St				E/W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	1	0	0	1	0	0	0	1	1	0	0	0	5	0	0	9
6:15 AM	0	1	0	0	0	0	1	0	1	3	0	0	0	7	0	0	13
6:30 AM	0	0	0	0	1	0	4	0	2	3	0	0	0	2	0	0	12
6:45 AM	1	0	0	0	3	0	2	0	0	2	0	0	0	3	0	0	11
7:00 AM	0	1	0	0	3	0	6	0	0	5	0	0	0	4	2	0	21
7:15 AM	1	0	0	0	4	0	5	0	0	2	0	0	0	4	0	0	16
7:30 AM	0	0	0	0	1	0	6	0	1	5	0	0	0	2	0	0	15
7:45 AM	0	0	0	0	4	0	1	0	1	3	0	0	0	2	0	0	11
8:00 AM	0	0	0	0	3	0	2	0	0	4	0	0	0	6	1	0	16
8:15 AM	1	0	0	0	5	0	3	0	1	5	0	0	0	1	1	0	17
8:30 AM	0	0	0	0	1	0	1	0	1	0	0	0	0	4	0	0	7
8:45 AM	0	1	0	0	2	0	1	0	0	1	0	0	0	1	1	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	4	0	0	28	0	32	0	8	34	0	0	0	41	5	0	155
APPROACH %'s :	42.86%	57.14%	0.00%	0.00%	46.67%	0.00%	53.33%	0.00%	19.05%	80.95%	0.00%	0.00%	0.00%	89.13%	10.87%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	1	1	0	0	11	0	7	0	2	10	0	0	0	12	3	0	47
PEAK HR FACTOR :	0.250	0.250	0.000	0.000	0.550	0.000	0.583	0.000	0.500	0.500	0.000	0.000	0.000	0.500	0.750	0.000	0.691
	0.500				0.563				0.500				0.536				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	5
4:30 PM	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
4:45 PM	1	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
5:15 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
5:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	3
6:00 PM	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	5
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	1	0	0	3	0	6	0	6	8	0	0	0	3	1	0	31
APPROACH %'s :	75.00%	25.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	42.86%	57.14%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	1	0	0	1	0	2	0	2	3	0	0	0	1	1	0	12
PEAK HR FACTOR :	0.250	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.375	0.000	0.000	0.000	0.250	0.250	0.000	0.600
	0.500				0.375				0.313				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston
Control: 4-Way Stop

Project ID: 25-430193-007
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Pappas Way/ W First St				Pappas Way/ W First St				E/W First St				E/W First St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	0	1	0	2	0	0	0	0	4	2	0	12
APPROACH %'s :	66.67%	33.33%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	6
PEAK HR FACTOR :	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.500
	0.375												0.375				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	3
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	4
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	3
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
6:15 PM	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	3
6:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	0	0	9	0	1	0	0	3	0	4	0	1	2	1	23
APPROACH %'s :	50.00%	50.00%	0.00%	0.00%	90.00%	0.00%	10.00%	0.00%	0.00%	42.86%	0.00%	57.14%	0.00%	25.00%	50.00%	25.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	3	0	1	0	0	0	0	2	0	1	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.583
					0.500				0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way/ W First St & E/W First St
City: Boston

Project ID: 25-430193-007
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Pappas Way/ W First St		Pappas Way/ W First St		E/W First St		E/W First St						
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	EB	WB	TOTAL
6:00 AM	0	1	2	0	2	1	0	0	0	0	1	0	7
6:15 AM	2	1	0	0	2	0	0	0	1	0	0	0	6
6:30 AM	5	1	0	2	0	3	0	0	0	2	0	0	13
6:45 AM	0	0	2	2	1	1	0	0	0	0	1	0	7
7:00 AM	0	1	1	3	1	1	0	0	0	0	1	0	8
7:15 AM	1	0	1	1	0	0	0	0	0	0	3	0	6
7:30 AM	1	1	4	3	6	1	0	0	0	0	0	1	17
7:45 AM	0	0	5	0	3	0	0	0	0	0	2	1	11
8:00 AM	0	0	2	1	7	0	0	0	0	0	0	0	10
8:15 AM	1	0	2	3	7	3	0	0	1	0	0	1	18
8:30 AM	1	2	2	1	8	1	0	0	0	0	0	0	15
8:45 AM	0	0	0	2	4	0	0	0	0	0	1	1	8
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	11	7	21	18	41	11	0	0	2	2	9	4	126
APPROACH %'s :	61.11%	38.89%	53.85%	46.15%	78.85%	21.15%			50.00%	50.00%	69.23%	30.77%	
PEAK HR :	**08:00 AM - 09:00 AM**												TOTAL
PEAK HR VOL :	2	2	6	7	26	4	0	0	1	0	1	2	51
PEAK HR FACTOR :	0.500	0.250	0.750	0.583	0.813	0.333			0.250		0.250	0.500	0.708
	0.333		0.650		0.750				0.250		0.375		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	EB	WB	TOTAL
4:00 PM	1	0	1	5	0	5	0	0	0	0	0	0	12
4:15 PM	1	3	2	6	1	6	0	0	0	0	1	0	20
4:30 PM	1	0	0	5	0	5	0	1	0	0	0	0	12
4:45 PM	0	0	1	1	2	2	2	0	0	1	0	0	9
5:00 PM	2	1	0	3	1	3	0	0	0	0	1	0	11
5:15 PM	2	0	3	3	1	3	0	0	0	0	2	0	14
5:30 PM	0	2	2	3	3	6	0	0	0	0	0	0	16
5:45 PM	1	1	5	7	3	10	0	0	0	0	0	0	27
6:00 PM	1	3	4	4	4	4	0	0	1	0	1	0	22
6:15 PM	0	7	2	8	0	8	0	0	0	1	1	0	27
6:30 PM	2	2	1	3	4	3	0	0	0	0	0	0	15
6:45 PM	4	2	3	6	4	8	0	0	0	1	0	0	28
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	15	21	24	54	23	63	2	1	1	3	6	0	213
APPROACH %'s :	41.67%	58.33%	30.77%	69.23%	26.74%	73.26%	66.67%	33.33%	25.00%	75.00%	100.00%	0.00%	
PEAK HR :	**05:15 PM - 06:15 PM**												TOTAL
PEAK HR VOL :	4	6	14	17	11	23	0	0	1	0	3	0	79
PEAK HR FACTOR :	0.500	0.500	0.700	0.607	0.688	0.575			0.250		0.375		0.731
	0.625		0.646		0.654				0.250		0.375		

Prepared by National Data & Surveying Services

Pappas Way/ W First St & E/W First St

Peak Hour Turning Movement Count

ID: 25-430193-007
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND — Pappas Way/ W First St

AM	27	0	120	0	153	AM
NOON	0	0	0	0	0	NOON
PM	39	0	286	0	76	PM

EASTBOUND — E/W First St

AM	NOON	PM	
396	0	216	⇦
0	0	2	↶ 0
30	0	28	↱ 0
202	0	312	→ 1
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND — E/W First St

PM	NOON	AM	
34	0	89	0 ↰
128	0	264	1 ←
0	0	0	0 ↙
0	0	0	0 ↶
614	0	327	⇨
PM	NOON	AM	

NORTHBOUND — Pappas Way/ W First St

PM	0	0	47	14	16	PM
NOON	0	0	0	0	0	NOON
AM	0	0	105	34	5	AM

0 0 1 0

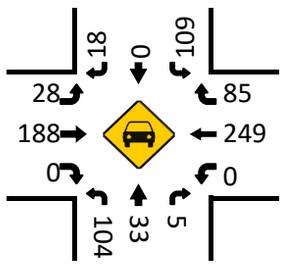
CONTROL

4-Way Stop

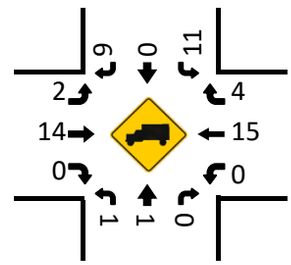
TEV	876 AM	0 NOON	906 PM
PHF	0.91		0.92

0 1 0 0

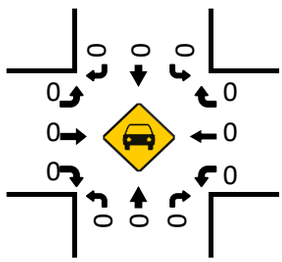
Cars (AM)



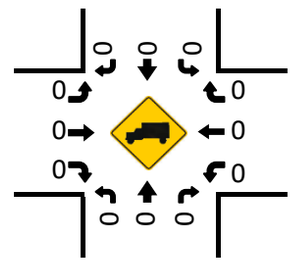
Total Trucks (AM)



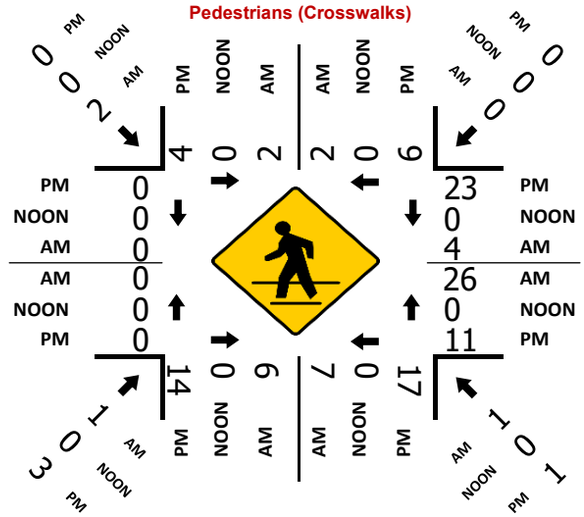
Cars (NOON)



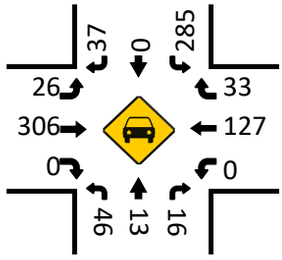
Total Trucks (NOON)



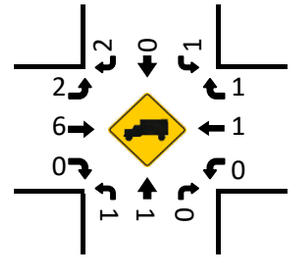
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-007
Location: Pappas Way/ W First St & E/W First St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pappas Way/ W First St Northbound						Pappas Way/ W First St Southbound						E/W First St Eastbound						E/W First St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	3	13	0	0	2	16	16	0	3	0	1	19	6	22	0	0	0	28	0	18	11	0	3	29	92
6:15 AM	6	7	1	0	0	14	13	0	7	0	3	20	6	26	0	0	0	32	0	23	9	0	2	32	98
6:30 AM	13	7	1	0	2	21	18	0	5	0	6	23	9	16	0	1	0	26	0	27	12	0	3	39	109
6:45 AM	15	3	2	0	4	20	23	0	6	0	0	29	7	26	0	2	0	35	0	18	16	0	2	34	118
Total	37	30	4	0	8	71	70	0	21	0	10	91	28	90	0	3	0	121	0	86	48	0	10	134	417
7:00 AM	11	9	0	0	4	20	22	0	10	0	1	32	6	34	0	1	0	41	0	27	16	0	2	43	136
7:15 AM	20	4	4	0	2	28	19	0	12	0	1	31	7	35	0	1	0	43	0	57	29	0	0	86	188
7:30 AM	17	13	0	0	7	30	24	0	12	0	2	36	7	37	0	0	0	44	0	44	17	0	7	61	171
7:45 AM	23	4	1	0	5	28	24	0	8	0	0	32	12	59	0	0	0	71	0	44	22	0	3	66	197
Total	71	30	5	0	18	106	89	0	42	0	4	131	32	165	0	2	0	199	0	172	84	0	12	256	692
8:00 AM	26	9	0	0	3	35	37	0	2	0	0	39	4	57	0	0	0	61	0	79	26	0	7	105	240
8:15 AM	30	7	1	0	5	38	25	0	14	0	1	39	12	51	0	0	0	63	0	56	22	0	10	78	218
8:30 AM	21	6	2	0	3	29	26	0	4	0	3	30	8	50	0	0	0	58	0	76	22	0	9	98	215
8:45 AM	28	12	2	0	2	42	32	0	7	0	0	39	6	44	0	0	0	50	0	53	19	0	4	72	203
Total	105	34	5	0	13	144	120	0	27	0	4	147	30	202	0	0	0	232	0	264	89	0	30	353	876
BREAK																									
4:00 PM	5	5	4	0	6	14	64	0	8	0	1	72	3	54	0	0	0	57	0	26	14	0	5	40	183
4:15 PM	4	2	5	0	8	11	64	0	8	0	4	72	3	68	0	0	0	71	0	25	5	0	7	30	184
4:30 PM	8	7	4	0	5	19	72	0	8	0	1	80	4	93	0	1	1	98	0	33	10	1	5	44	241
4:45 PM	8	6	4	0	2	18	58	0	11	0	0	69	8	75	0	0	2	83	0	30	5	0	4	35	205
Total	25	20	17	0	21	62	258	0	35	0	6	293	18	290	0	1	3	309	0	114	34	1	21	149	813
5:00 PM	13	5	2	0	3	20	57	0	12	0	3	69	8	65	0	0	0	73	0	38	11	0	4	49	211
5:15 PM	10	5	3	0	6	18	75	0	12	0	2	87	10	92	0	0	0	102	0	32	8	0	4	40	247
5:30 PM	11	4	3	0	5	18	85	0	9	0	2	94	4	78	0	0	0	82	0	31	10	0	9	41	235
5:45 PM	9	2	6	0	12	17	65	0	8	0	2	73	5	72	0	0	0	77	0	28	5	0	13	33	200
Total	43	16	14	0	26	73	282	0	41	0	9	323	27	307	0	0	0	334	0	129	34	0	30	163	893
6:00 PM	17	3	4	0	8	24	61	0	10	0	4	71	9	70	0	2	0	81	0	37	11	0	8	48	224
6:15 PM	11	6	3	0	10	20	62	0	14	0	7	76	4	98	0	1	0	103	0	33	9	0	8	42	241
6:30 PM	14	3	6	0	4	23	50	0	8	0	4	58	5	60	0	0	0	65	0	27	10	0	7	37	183
6:45 PM	8	5	6	0	9	19	41	0	14	0	6	55	3	69	0	0	0	72	0	19	9	0	12	28	174
Total	50	17	19	0	31	86	214	0	46	0	21	260	21	297	0	3	0	321	0	116	39	0	35	155	822
Grand Total	331	147	64	0	117	542	1033	0	212	0	54	1245	156	1351	0	9	3	1516	0	881	328	1	138	1210	4513
Apprch %	61.1	27.1	11.8	0.0	21.6		83.0	0.0	17.0	0.0	4.3		10.3	89.1	0.0	0.6	0.2		0.0	72.8	27.1	0.1	11.4		
Total %	7.3	3.3	1.4	0.0	2.6	12.0	22.9	0.0	4.7	0.0	1.2	27.6	3.5	29.9	0.0	0.2	0.1	33.6	0.0	19.5	7.3	0.0	3.1	26.8	
Cars, PU, Vans	325	142	64	0		531	1002	0	169	0		1171	138	1280	0	9		1427	0	829	321	1		1151	4280
% Cars, PU, Vans	98.2	96.6	100.0	0.0		98.0	97.0	0.0	79.7	0.0		94.1	88.5	94.7	0.0	100.0		94.1	0.0	94.1	97.9	100.0		95.1	94.8
Buses	0	0	0	0		0	0	0	5	0		5	4	29	0	0		33	0	8	1	0		9	47
%Buses	0.0	0.0	0.0	0.0		0.0	0.0	0.0	2.4	0.0		0.4	2.6	2.1	0.0	0.0		2.2	0.0	0.9	0.3	0.0		0.7	1.0
Heavy Trucks	6	5	0	0		11	31	0	38	0		69	14	42	0	0		56	0	44	6	0		50	186
%Heavy Trucks	1.8	3.4	0.0	0.0		2.0	3.0	0.0	17.9	0.0		5.5	9.0	3.1	0.0	0.0		3.7	0.0	5.0	1.8	0.0		4.1	4.1

Project ID: 25-430193-007
Location: Pappas Way/ W First St & E/W First St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Pappas Way/ W First St Northbound					Pappas Way/ W First St Southbound					E/W First St Eastbound					E/W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	26	9	0	0	35	37	0	2	0	39	4	57	0	0	61	0	79	26	0	105	240
8:15 AM	30	7	1	0	38	25	0	14	0	39	12	51	0	0	63	0	56	22	0	78	218
8:30 AM	21	6	2	0	29	26	0	4	0	30	8	50	0	0	58	0	76	22	0	98	215
8:45 AM	28	12	2	0	42	32	0	7	0	39	6	44	0	0	50	0	53	19	0	72	203
Total Volume	105	34	5	0	144	120	0	27	0	147	30	202	0	0	232	0	264	89	0	353	876
% App. Total	72.9	23.6	3.5	0.0	100	81.6	0.0	18.4	0.0	100	12.9	87.1	0.0	0.0	100	0.0	74.8	25.2	0.0	100	
PHF					0.857					0.942					0.921					0.840	0.913
Cars, PU, Vans	104	33	5	0	142	109	0	18	0	127	28	188	0	0	216	0	249	85	0	334	819
% Cars, PU, Vans	99.0	97.1	100.0	0.0	98.6	90.8	0.0	66.7	0.0	86.4	93.3	93.1	0.0	0.0	93.1	0.0	94.3	95.5	0.0	94.6	93.5
Buses	0	0	0	0	0	0	0	2	0	2	0	4	0	0	4	0	3	1	0	4	10
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	1.4	0.0	2.0	0.0	0.0	1.7	0.0	1.1	1.1	0.0	1.1	1.1
Heavy Trucks	1	1	0	0	2	11	0	7	0	18	2	10	0	0	12	0	12	3	0	15	47
%Heavy Trucks	1.0	2.9	0.0	0.0	1.4	9.2	0.0	25.9	0.0	12.2	6.7	5.0	0.0	0.0	5.2	0.0	4.5	3.4	0.0	4.2	5.4

PM

	Pappas Way/ W First St Northbound					Pappas Way/ W First St Southbound					E/W First St Eastbound					E/W First St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	10	5	3	0	18	75	0	12	0	87	10	92	0	0	102	0	32	8	0	40	247
5:30 PM	11	4	3	0	18	85	0	9	0	94	4	78	0	0	82	0	31	10	0	41	235
5:45 PM	9	2	6	0	17	65	0	8	0	73	5	72	0	0	77	0	28	5	0	33	200
6:00 PM	17	3	4	0	24	61	0	10	0	71	9	70	0	2	81	0	37	11	0	48	224
Total Volume	47	14	16	0	77	286	0	39	0	325	28	312	0	2	342	0	128	34	0	162	906
% App. Total	61.0	18.2	20.8	0.0	100	88.0	0.0	12.0	0.0	100	8.2	91.2	0.0	0.6	100	0.0	79.0	21.0	0.0	100	
PHF					0.802					0.864					0.838					0.844	0.917
Cars, PU, Vans	46	13	16	0	75	285	0	37	0	322	26	306	0	2	334	0	127	33	0	160	891
% Cars, PU, Vans	97.9	92.9	100.0	0.0	97.4	99.7	0.0	94.9	0.0	99.1	92.9	98.1	0.0	100.0	97.7	0.0	99.2	97.1	0.0	98.8	98.3
Buses	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.3
Heavy Trucks	1	1	0	0	2	1	0	2	0	3	2	3	0	0	5	0	1	1	0	2	12
%Heavy Trucks	2.1	7.1	0.0	0.0	2.6	0.3	0.0	5.1	0.0	0.9	7.1	1.0	0.0	0.0	1.5	0.0	0.8	2.9	0.0	1.2	1.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston
Control: No Control

Project ID: 25-430193-008
Date: 12/16/2025

Data - Total

NS/EW Streets:	Pappas Way				Pappas Way				South Boston Verizon Garage/Pkg Lot Dwy				South Boston Verizon Garage/Pkg Lot Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	27	0	0	0	21	0	0	0	0	0	0	0	0	0	0	48
6:15 AM	0	25	0	0	0	21	0	0	0	0	0	0	0	0	0	0	46
6:30 AM	0	29	0	0	0	19	0	0	0	0	0	0	0	0	0	0	48
6:45 AM	0	27	0	0	0	30	0	0	0	0	0	0	0	0	0	0	57
7:00 AM	0	29	0	0	0	32	0	0	0	0	0	0	0	0	0	0	61
7:15 AM	0	40	0	0	0	30	0	0	0	0	0	0	0	0	0	0	70
7:30 AM	0	38	0	0	0	38	0	0	0	0	0	0	0	0	0	0	76
7:45 AM	0	36	0	0	0	32	0	0	0	0	0	0	0	0	0	0	68
8:00 AM	0	39	0	0	0	40	0	0	0	0	0	0	0	0	0	0	79
8:15 AM	0	39	0	0	0	36	0	0	0	0	0	0	0	0	0	0	75
8:30 AM	0	37	0	0	0	30	0	0	0	0	0	0	0	0	0	0	67
8:45 AM	0	36	0	0	0	40	0	0	0	0	0	0	0	0	0	0	76
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	402	0	0	0	369	0	0	0	0	0	0	0	0	0	0	771
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	152	0	0	0	146	0	0	0	0	0	0	0	0	0	0	298
PEAK HR FACTOR :	0.000	0.974	0.000	0.000	0.000	0.913	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.943
		0.974				0.913											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	24	0	0	0	72	0	0	0	0	0	0	0	0	0	0	96
4:15 PM	0	9	0	0	0	70	0	0	0	0	0	0	0	0	0	0	79
4:30 PM	0	21	0	0	0	82	0	0	0	0	0	0	0	0	0	0	103
4:45 PM	0	21	0	0	0	67	0	0	0	0	0	0	0	0	0	0	88
5:00 PM	0	21	0	0	0	71	0	0	0	0	0	0	0	0	0	0	92
5:15 PM	0	22	0	0	0	89	0	0	0	0	0	0	0	0	0	0	111
5:30 PM	0	16	0	0	0	93	0	0	0	0	0	0	0	0	0	0	109
5:45 PM	0	15	0	0	0	73	0	0	0	0	0	0	0	0	0	0	88
6:00 PM	0	20	0	0	0	72	0	0	0	0	0	0	0	0	0	0	92
6:15 PM	0	18	0	0	0	72	0	0	0	0	0	0	0	0	0	0	90
6:30 PM	0	17	0	0	0	60	0	0	0	0	0	0	0	0	0	0	77
6:45 PM	0	18	0	0	0	56	0	0	0	0	0	0	0	0	0	0	74
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	222	0	0	0	877	0	0	0	0	0	0	0	0	0	0	1099
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	73	0	0	0	327	0	0	0	0	0	0	0	0	0	0	400
PEAK HR FACTOR :	0.000	0.830	0.000	0.000	0.000	0.879	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.901
		0.830				0.879											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston
Control: No Control

Project ID: 25-430193-008
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Pappas Way				Pappas Way				South Boston Verizon Garage/Pkg Lot Dwy				South Boston Verizon Garage/Pkg Lot Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	24	0	0	0	19	0	0	0	0	0	0	0	0	0	0	43
6:15 AM	0	19	0	0	0	18	0	0	0	0	0	0	0	0	0	0	37
6:30 AM	0	24	0	0	0	15	0	0	0	0	0	0	0	0	0	0	39
6:45 AM	0	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0	50
7:00 AM	0	26	0	0	0	22	0	0	0	0	0	0	0	0	0	0	48
7:15 AM	0	38	0	0	0	20	0	0	0	0	0	0	0	0	0	0	58
7:30 AM	0	37	0	0	0	31	0	0	0	0	0	0	0	0	0	0	68
7:45 AM	0	34	0	0	0	25	0	0	0	0	0	0	0	0	0	0	59
8:00 AM	0	38	0	0	0	34	0	0	0	0	0	0	0	0	0	0	72
8:15 AM	0	36	0	0	0	27	0	0	0	0	0	0	0	0	0	0	63
8:30 AM	0	34	0	0	0	29	0	0	0	0	0	0	0	0	0	0	63
8:45 AM	0	34	0	0	0	36	0	0	0	0	0	0	0	0	0	0	70
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	369	0	0	0	301	0	0	0	0	0	0	0	0	0	0	670
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	145	0	0	0	117	0	0	0	0	0	0	0	0	0	0	262
PEAK HR FACTOR :	0.000	0.954	0.000	0.000	0.000	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.910
		0.954				0.860											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	24	0	0	0	71	0	0	0	0	0	0	0	0	0	0	95
4:15 PM	0	7	0	0	0	68	0	0	0	0	0	0	0	0	0	0	75
4:30 PM	0	20	0	0	0	81	0	0	0	0	0	0	0	0	0	0	101
4:45 PM	0	20	0	0	0	67	0	0	0	0	0	0	0	0	0	0	87
5:00 PM	0	21	0	0	0	70	0	0	0	0	0	0	0	0	0	0	91
5:15 PM	0	20	0	0	0	89	0	0	0	0	0	0	0	0	0	0	109
5:30 PM	0	14	0	0	0	92	0	0	0	0	0	0	0	0	0	0	106
5:45 PM	0	15	0	0	0	71	0	0	0	0	0	0	0	0	0	0	86
6:00 PM	0	18	0	0	0	71	0	0	0	0	0	0	0	0	0	0	89
6:15 PM	0	17	0	0	0	71	0	0	0	0	0	0	0	0	0	0	88
6:30 PM	0	17	0	0	0	57	0	0	0	0	0	0	0	0	0	0	74
6:45 PM	0	17	0	0	0	54	0	0	0	0	0	0	0	0	0	0	71
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	210	0	0	0	862	0	0	0	0	0	0	0	0	0	0	1072
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	67	0	0	0	323	0	0	0	0	0	0	0	0	0	0	390
PEAK HR FACTOR :	0.000	0.838	0.000	0.000	0.000	0.878	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.894
		0.838				0.878											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston
Control: No Control

Project ID: 25-430193-008
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Pappas Way				Pappas Way				South Boston Verizon Garage/Pkg Lot Dwy				South Boston Verizon Garage/Pkg Lot Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
6:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	8	0	0	0	0	0	0	0	0	0	0	24
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333
	0.500				0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	10
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
	0.500				0.250												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston
Control: No Control

Project ID: 25-430193-008
Date: 12/16/2025

Data - HT

NS/EW Streets:	Pappas Way				Pappas Way				South Boston Verizon Garage/Pkg Lot Dwy				South Boston Verizon Garage/Pkg Lot Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
6:45 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
7:00 AM	0	3	0	0	0	9	0	0	0	0	0	0	0	0	0	0	12
7:15 AM	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
7:30 AM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	0	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	11
8:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	17	0	0	0	60	0	0	0	0	0	0	0	0	0	0	77
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	5	0	0	0	27	0	0	0	0	0	0	0	0	0	0	32
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.727
	0.625				0.750												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0	0	17
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
	0.500				0.375												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston
Control: No Control

Project ID: 25-430193-008
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Pappas Way				Pappas Way				South Boston Verizon Garage/Pkg Lot Dwy				South Boston Verizon Garage/Pkg Lot Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375
	0.375																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	10	0	0	0	0	0	0	0	0	0	0	13
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.500																

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston

Project ID: 25-430193-008
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Pappas Way		Pappas Way		South Boston Verizon Garage/Pkg Lot Dwy		South Boston Verizon Garage/Pkg Lot Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	1	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	1
7:30 AM	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	1	0	0	0	1	3
APPROACH %'s :			50.00%	50.00%			0.00%	100.00%	
PEAK HR :	**07:30 AM - 08:30 AM**								TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :				0.250					0.250
			0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	2	2
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	1	0	0	0	0	0	1	2
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	2	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	7	8
APPROACH %'s :	0.00%	100.00%					0.00%	100.00%	
PEAK HR :	**05:15 PM - 06:15 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	1
PEAK HR FACTOR :								0.250	0.250
							0.250		

Prepared by National Data & Surveying Services

Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy

Peak Hour Turning Movement Count

ID: 25-430193-008
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:15 PM - 06:15 PM

COUNT PERIODS

AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM

CONTROL: No Control

	AM	NOON	PM
TEV	298	0	400
PHF	0.94		0.90

SOUTHBOUND (Pappas Way)

	Left	Thru	Right	U-Turn	Total	
AM	0	146	0	0	152	AM
NOON	0	0	0	0	0	NOON
PM	0	327	0	0	73	PM

NORTHBOUND (Pappas Way)

	Left	Thru	Right	U-Turn	Total	
PM	327	0	0	73	0	PM
NOON	0	0	0	0	0	NOON
AM	146	0	0	152	0	AM

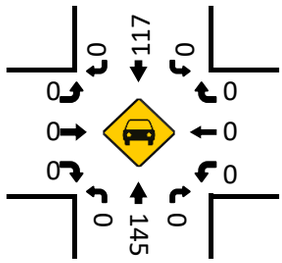
EASTBOUND (South Boston Verizon Garage/Pkg Lot Dwy)

	AM	NOON	PM
Left	0	0	0
U-Turn	0	0	0
Thru	0	0	0
Right	0	0	0

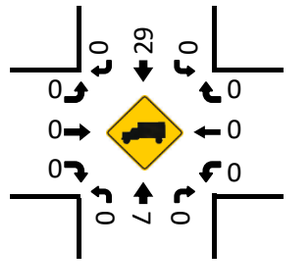
WESTBOUND (South Boston Verizon Garage/Pkg Lot Dwy)

	PM	NOON	AM
Left	0	0	0
Thru	0	0	0
Right	0	0	0
U-Turn	0	0	0

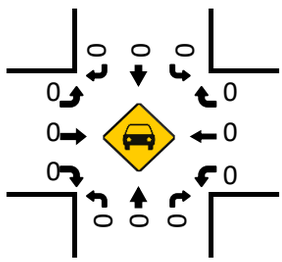
Cars (AM)



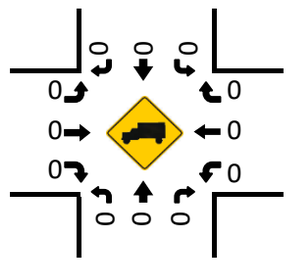
Total Trucks (AM)



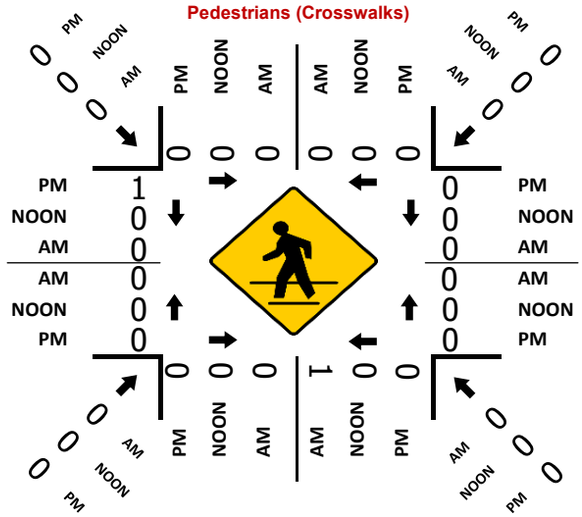
Cars (NOON)



Total Trucks (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
1
0
0
0
0
0
0
0
0
0
0
0
0
0

Project ID: 25-430193-008
Location: Pappas Way & South Boston Verizon Garage/Pkg Lot Dwy
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pappas Way Northbound						Pappas Way Southbound						South Boston Verizon Garage/Pkg Lot Dwy Eastbound						South Boston Verizon Garage/Pkg Lot Dwy Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	27	0	0	0	27	0	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	48
6:15 AM	0	25	0	0	0	25	0	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	46
6:30 AM	0	29	0	0	1	29	0	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	48
6:45 AM	0	27	0	0	0	27	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	57
Total	0	108	0	0	1	108	0	91	0	0	0	91	0	0	0	0	0	0	0	0	0	0	0	0	199
7:00 AM	0	29	0	0	0	29	0	32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	61
7:15 AM	0	40	0	0	0	40	0	30	0	0	0	30	0	0	0	0	1	0	0	0	0	0	0	0	70
7:30 AM	0	38	0	0	1	38	0	38	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	76
7:45 AM	0	36	0	0	0	36	0	32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	68
Total	0	143	0	0	1	143	0	132	0	0	0	132	0	0	0	0	1	0	0	0	0	0	0	0	275
8:00 AM	0	39	0	0	0	39	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	79
8:15 AM	0	39	0	0	0	39	0	36	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	75
8:30 AM	0	37	0	0	0	37	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	67
8:45 AM	0	36	0	0	0	36	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	76
Total	0	151	0	0	0	151	0	146	0	0	0	146	0	0	0	0	0	0	0	0	0	0	0	0	297
BREAK																									
4:00 PM	0	24	0	0	0	24	0	72	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	96
4:15 PM	0	9	0	0	0	9	0	70	0	0	0	70	0	0	0	0	2	0	0	0	0	0	0	0	79
4:30 PM	0	21	0	0	0	21	0	82	0	0	0	82	0	0	0	0	0	0	0	0	0	0	0	0	103
4:45 PM	0	21	0	0	0	21	0	67	0	0	0	67	0	0	0	0	1	0	0	0	0	0	0	0	88
Total	0	75	0	0	0	75	0	291	0	0	0	291	0	0	0	0	3	0	0	0	0	0	0	0	366
5:00 PM	0	21	0	0	0	21	0	71	0	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	92
5:15 PM	0	22	0	0	0	22	0	89	0	0	0	89	0	0	0	0	1	0	0	0	0	0	0	0	111
5:30 PM	0	16	0	0	0	16	0	93	0	0	0	93	0	0	0	0	0	0	0	0	0	0	0	0	109
5:45 PM	0	15	0	0	0	15	0	73	0	0	0	73	0	0	0	0	0	0	0	0	0	0	0	0	88
Total	0	74	0	0	0	74	0	326	0	0	0	326	0	0	0	0	1	0	0	0	0	0	0	0	400
6:00 PM	0	20	0	0	0	20	0	72	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	92
6:15 PM	0	18	0	0	0	18	0	72	0	0	1	72	0	0	0	0	1	0	0	0	0	0	0	0	90
6:30 PM	0	17	0	0	0	17	0	60	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	77
6:45 PM	0	18	0	0	0	18	0	56	0	0	0	56	0	0	0	0	2	0	0	0	0	0	0	0	74
Total	0	73	0	0	0	73	0	260	0	0	1	260	0	0	0	0	3	0	0	0	0	0	0	0	333
Grand Total	0	624	0	0	2	624	0	1246	0	0	1	1246	0	0	0	0	8	0	0	0	0	0	0	0	1870
Apprch %	0.0	100.0	0.0	0.0	0.3		0.0	100.0	0.0	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	33.4	0.0	0.0	0.1	33.4	0.0	66.6	0.0	0.0	0.1	66.6	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	0	579	0	0		579	0	1163	0	0		1163	0	0	0	0		0	0	0	0	0		0	1742
% Cars, PU, Vans	0.0	92.8	0.0	0.0		92.8	0.0	93.3	0.0	0.0		93.3	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	93.2
Buses	0	20	0	0		20	0	14	0	0		14	0	0	0	0		0	0	0	0	0		0	34
%Buses	0.0	3.2	0.0	0.0		3.2	0.0	1.1	0.0	0.0		1.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	1.8
Heavy Trucks	0	25	0	0		25	0	69	0	0		69	0	0	0	0		0	0	0	0	0		0	94
%Heavy Trucks	0.0	4.0	0.0	0.0		4.0	0.0	5.5	0.0	0.0		5.5	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	5.0

Project ID: 25-430193-008
Location: Pappas Way & South Boston Verizon Garage/Pkg L
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Pappas Way Northbound					Pappas Way Southbound					uth Boston Verizon Garage/Pkg Lot D Eastbound					uth Boston Verizon Garage/Pkg Lot D Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	38	0	0	38	0	38	0	0	38	0	0	0	0	0	0	0	0	0	0	76
7:45 AM	0	36	0	0	36	0	32	0	0	32	0	0	0	0	0	0	0	0	0	0	68
8:00 AM	0	39	0	0	39	0	40	0	0	40	0	0	0	0	0	0	0	0	0	0	79
8:15 AM	0	39	0	0	39	0	36	0	0	36	0	0	0	0	0	0	0	0	0	0	75
Total Volume	0	152	0	0	152	0	146	0	0	146	0	0	0	0	0	0	0	0	0	0	298
% App. Total	0.0	100.0	0.0	0.0	100	0.0	100.0	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	
PHF					0.974					0.913											0.943
Cars, PU, Vans	0	145	0	0	145	0	117	0	0	117	0	0	0	0	0	0	0	0	0	0	262
% Cars, PU, Vans	0.0	95.4	0.0	0.0	95.4	0.0	80.1	0.0	0.0	80.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.9
Buses	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
%Buses	0.0	1.3	0.0	0.0	1.3	0.0	1.4	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Heavy Trucks	0	5	0	0	5	0	27	0	0	27	0	0	0	0	0	0	0	0	0	0	32
%Heavy Trucks	0.0	3.3	0.0	0.0	3.3	0.0	18.5	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7

PM

	Pappas Way Northbound					Pappas Way Southbound					uth Boston Verizon Garage/Pkg Lot D Eastbound					uth Boston Verizon Garage/Pkg Lot D Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	0	22	0	0	22	0	89	0	0	89	0	0	0	0	0	0	0	0	0	0	111
5:30 PM	0	16	0	0	16	0	93	0	0	93	0	0	0	0	0	0	0	0	0	0	109
5:45 PM	0	15	0	0	15	0	73	0	0	73	0	0	0	0	0	0	0	0	0	0	88
6:00 PM	0	20	0	0	20	0	72	0	0	72	0	0	0	0	0	0	0	0	0	0	92
Total Volume	0	73	0	0	73	0	327	0	0	327	0	0	0	0	0	0	0	0	0	0	400
% App. Total	0.0	100.0	0.0	0.0	100	0.0	100.0	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	
PHF					0.830					0.879											0.901
Cars, PU, Vans	0	67	0	0	67	0	323	0	0	323	0	0	0	0	0	0	0	0	0	0	390
% Cars, PU, Vans	0.0	91.8	0.0	0.0	91.8	0.0	98.8	0.0	0.0	98.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.5
Buses	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
%Buses	0.0	2.7	0.0	0.0	2.7	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Heavy Trucks	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
%Heavy Trucks	0.0	5.5	0.0	0.0	5.5	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-009
Date: 12/16/2025

Data - Total

NS/EW Streets:	Dorchester St				Dorchester St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	0	6	0	0	0	0	0	0	20	14	0	5	21	0	0	71
6:15 AM	4	0	7	0	0	0	0	0	0	25	15	0	9	26	0	0	86
6:30 AM	7	0	10	0	0	0	0	0	0	23	10	0	14	31	0	0	95
6:45 AM	4	0	12	0	0	0	0	0	0	21	29	0	8	30	0	0	104
7:00 AM	2	0	13	0	0	0	0	0	0	31	29	0	13	39	0	0	127
7:15 AM	6	0	4	0	0	0	0	0	0	33	24	0	10	78	0	0	155
7:30 AM	7	0	6	0	0	0	0	0	0	39	28	0	11	56	0	1	148
7:45 AM	8	0	8	0	0	0	0	0	0	63	21	0	17	57	0	0	174
8:00 AM	14	0	9	0	0	0	0	0	0	52	41	0	11	94	0	0	221
8:15 AM	10	0	11	0	0	0	0	0	0	48	32	0	11	68	0	0	180
8:30 AM	6	0	4	0	0	0	0	0	0	42	35	0	8	84	0	0	179
8:45 AM	5	0	5	0	0	0	0	0	0	35	39	0	11	70	0	0	165
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	78	0	95	0	0	0	0	0	0	432	317	0	128	654	0	1	1705
APPROACH %'s :	45.09%	0.00%	54.91%	0.00%					0.00%	57.68%	42.32%	0.00%	16.35%	83.52%	0.00%	0.13%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	38	0	32	0	0	0	0	0	0	205	129	0	47	303	0	0	754
PEAK HR FACTOR :	0.679	0.000	0.727	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.787	0.000	0.691	0.806	0.000	0.000	0.853
	0.761				0.898								0.833				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	0	4	0	0	0	0	0	0	59	63	0	13	32	0	0	177
4:15 PM	5	0	3	0	0	0	0	0	0	74	68	0	9	27	0	0	186
4:30 PM	4	0	6	0	0	0	0	0	0	73	94	0	9	37	0	0	223
4:45 PM	4	0	5	0	0	0	0	0	0	73	60	0	5	28	0	0	175
5:00 PM	3	0	13	0	0	0	0	0	0	72	53	0	10	48	0	0	199
5:15 PM	7	0	9	0	0	0	0	0	0	86	78	0	9	32	0	0	221
5:30 PM	5	0	9	0	0	0	0	0	0	87	82	0	7	33	0	0	223
5:45 PM	1	0	4	0	0	0	0	0	0	75	67	0	9	33	0	0	189
6:00 PM	3	0	3	0	0	0	0	0	0	67	67	1	11	43	0	0	195
6:15 PM	9	0	6	0	0	0	0	0	0	92	70	0	5	30	0	0	212
6:30 PM	9	0	5	0	0	0	0	0	0	55	59	0	11	26	0	0	165
6:45 PM	5	0	2	0	0	0	0	0	0	58	59	0	3	25	0	0	152
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	61	0	69	0	0	0	0	0	0	871	820	1	101	394	0	0	2317
APPROACH %'s :	46.92%	0.00%	53.08%	0.00%					0.00%	51.48%	48.46%	0.06%	20.40%	79.60%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	16	0	35	0	0	0	0	0	0	320	280	0	35	146	0	0	832
PEAK HR FACTOR :	0.571	0.000	0.673	0.000	0.000	0.000	0.000	0.000	0.000	0.920	0.854	0.000	0.875	0.760	0.000	0.000	0.933
	0.797								0.888				0.780				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-009
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Dorchester St				Dorchester St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	0	6	0	0	0	0	0	0	16	13	0	4	16	0	0	60
6:15 AM	4	0	7	0	0	0	0	0	0	21	15	0	9	19	0	0	75
6:30 AM	7	0	10	0	0	0	0	0	0	17	10	0	14	29	0	0	87
6:45 AM	4	0	9	0	0	0	0	0	0	19	24	0	8	27	0	0	91
7:00 AM	2	0	12	0	0	0	0	0	0	25	25	0	13	32	0	0	109
7:15 AM	6	0	3	0	0	0	0	0	0	23	24	0	10	75	0	0	141
7:30 AM	7	0	4	0	0	0	0	0	0	31	26	0	9	54	0	0	131
7:45 AM	8	0	8	0	0	0	0	0	0	54	20	0	15	55	0	0	160
8:00 AM	14	0	7	0	0	0	0	0	0	43	41	0	11	87	0	0	203
8:15 AM	10	0	9	0	0	0	0	0	0	42	27	0	11	65	0	0	164
8:30 AM	6	0	4	0	0	0	0	0	0	40	35	0	8	79	0	0	172
8:45 AM	4	0	4	0	0	0	0	0	0	34	37	0	10	67	0	0	156
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	77	0	83	0	0	0	0	0	0	365	297	0	122	605	0	0	1549
APPROACH %'s :	48.13%	0.00%	51.88%	0.00%					0.00%	55.14%	44.86%	0.00%	16.78%	83.22%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	38	0	28	0	0	0	0	0	0	179	123	0	45	286	0	0	699
PEAK HR FACTOR :	0.679	0.000	0.778	0.000	0.000	0.000	0.000	0.000	0.000	0.829	0.750	0.000	0.750	0.822	0.000	0.000	0.861
	0.786								0.899				0.844				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	0	3	0	0	0	0	0	0	59	63	0	12	32	0	0	175
4:15 PM	5	0	3	0	0	0	0	0	0	73	68	0	9	27	0	0	185
4:30 PM	4	0	6	0	0	0	0	0	0	73	94	0	9	37	0	0	223
4:45 PM	4	0	5	0	0	0	0	0	0	69	60	0	5	28	0	0	171
5:00 PM	3	0	12	0	0	0	0	0	0	72	53	0	10	47	0	0	197
5:15 PM	7	0	9	0	0	0	0	0	0	85	78	0	9	32	0	0	220
5:30 PM	5	0	8	0	0	0	0	0	0	86	81	0	7	32	0	0	219
5:45 PM	1	0	4	0	0	0	0	0	0	73	67	0	9	32	0	0	186
6:00 PM	3	0	3	0	0	0	0	0	0	65	67	1	11	43	0	0	193
6:15 PM	9	0	6	0	0	0	0	0	0	91	70	0	5	29	0	0	210
6:30 PM	9	0	5	0	0	0	0	0	0	55	58	0	11	23	0	0	161
6:45 PM	5	0	2	0	0	0	0	0	0	57	59	0	3	23	0	0	149
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	61	0	66	0	0	0	0	0	0	858	818	1	100	385	0	0	2289
APPROACH %'s :	48.03%	0.00%	51.97%	0.00%					0.00%	51.16%	48.78%	0.06%	20.62%	79.38%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	16	0	33	0	0	0	0	0	0	316	279	0	35	143	0	0	822
PEAK HR FACTOR :	0.571	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.919	0.861	0.000	0.875	0.761	0.000	0.000	0.934
	0.766								0.891				0.781				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-009
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Dorchester St				Dorchester St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:45 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:15 AM	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	5
7:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
7:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	0	0	0	0	25	0	0	1	4	0	0	32
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	100.00%	0.00%	0.00%	20.00%	80.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	1	2	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.250	0.500	0.000	0.000	0.625
										0.583				0.750			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	0	9
APPROACH %'s :									0.00%	75.00%	25.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.375
										0.375							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-009
Date: 12/16/2025

Data - HT

NS/EW Streets:	Dorchester St				Dorchester St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	1	5	0	0	8
6:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	0	10
6:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
6:45 AM	0	0	2	0	0	0	0	0	0	0	5	0	0	3	0	0	10
7:00 AM	0	0	1	0	0	0	0	0	0	4	4	0	0	7	0	0	16
7:15 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	3	0	0	9
7:30 AM	0	0	2	0	0	0	0	0	0	4	2	0	2	2	0	1	13
7:45 AM	0	0	0	0	0	0	0	0	0	6	1	0	1	2	0	0	10
8:00 AM	0	0	2	0	0	0	0	0	0	7	0	0	0	7	0	0	16
8:15 AM	0	0	2	0	0	0	0	0	0	5	5	0	0	2	0	0	14
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
8:45 AM	1	0	1	0	0	0	0	0	0	1	2	0	1	1	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	10	0	0	0	0	0	0	42	20	0	5	45	0	1	124
APPROACH %'s :	9.09%	0.00%	90.91%	0.00%					0.00%	67.74%	32.26%	0.00%	9.80%	88.24%	0.00%	1.96%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	4	0	0	0	0	0	0	19	6	0	1	15	0	0	45
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.679	0.300	0.000	0.250	0.536	0.000	0.000	0.703
	0.500				0.000				0.625				0.571				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	3	0	0	0	0	0	0	10	1	0	1	4	0	0	19
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	90.91%	9.09%	0.00%	20.00%	80.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	0	0	2	0	0	0	3	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.750	0.000	0.000	0.875
	0.500								0.500				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-009
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Dorchester St				Dorchester St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	8
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%									0.00%	80.00%	0.00%	20.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	6
PEAK HR FACTOR :	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.250	0.375
	0.500												0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
5:00 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	3
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	1	0	0	0	0	0	0	5	5	0	0	3	0	0	15
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%					0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	2	3	0	0	2	0	0	8
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.750	0.000	0.000	0.500	0.000	0.000	0.667
	0.250								0.625				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & E 1st St
City: Boston

Project ID: 25-430193-009
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Dorchester St		Dorchester St		E 1st St		E 1st St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	1	2	4	3	0	0	0	1	11
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	3	1	0	0	1	0	0	0	5
6:45 AM	0	0	2	3	0	0	1	0	6
7:00 AM	0	2	1	3	1	0	1	0	8
7:15 AM	1	0	4	2	0	1	0	0	8
7:30 AM	2	0	1	3	0	0	0	0	6
7:45 AM	0	1	5	2	1	0	0	0	9
8:00 AM	0	1	1	8	0	0	0	0	10
8:15 AM	0	2	1	6	0	0	1	1	11
8:30 AM	0	3	1	3	0	0	0	0	7
8:45 AM	0	0	3	3	0	0	0	0	6
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	7	12	23	36	3	1	3	2	87
APPROACH %'s :	36.84%	63.16%	38.98%	61.02%	75.00%	25.00%	60.00%	40.00%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	7	8	19	1	0	1	1	37
PEAK HR FACTOR :		0.583	0.400	0.594	0.250		0.250	0.250	
	0.583		0.750		0.250		0.250		0.841

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	1	0	2	1	0	0	0	4
4:15 PM	1	0	3	4	0	1	0	0	9
4:30 PM	1	0	0	4	0	0	0	0	5
4:45 PM	1	1	3	0	0	0	0	1	6
5:00 PM	2	0	1	5	0	0	0	0	8
5:15 PM	3	0	6	2	0	1	0	0	12
5:30 PM	3	2	4	1	0	1	0	0	11
5:45 PM	0	0	7	4	0	0	0	0	11
6:00 PM	5	2	5	1	0	0	0	0	13
6:15 PM	0	3	3	1	0	0	0	0	7
6:30 PM	4	2	2	1	0	0	0	0	9
6:45 PM	2	1	3	5	0	1	0	0	12
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	22	12	37	30	1	4	0	1	107
APPROACH %'s :	64.71%	35.29%	55.22%	44.78%	20.00%	80.00%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	8	2	18	12	0	2	0	0	42
PEAK HR FACTOR :	0.667	0.250	0.643	0.600		0.500			
	0.500		0.682		0.500				0.875

Prepared by National Data & Surveying Services

Dorchester St & E 1st St

Peak Hour Turning Movement Count

ID: 25-430193-009
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS
07:45 AM - 08:45 AM
NONE
05:00 PM - 06:00 PM

COUNT PERIODS
6:00 AM - 09:00 AM
NONE
4:00 PM - 07:00 PM

CONTROL
1-Way Stop(NB)

	AM	NOON	PM
TEV	754	0	832
PHF	0.85		0.93

SOUTHBOUND (Dorchester St)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (E 1st St)

AM	NOON	PM	
341	0	162	
0	0	0	0
0	0	0	0
205	0	320	1
129	0	280	0
AM	NOON	PM	

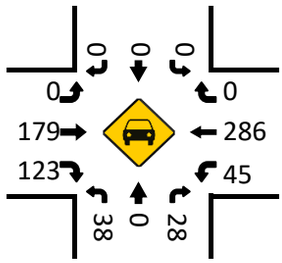
WESTBOUND (E 1st St)

PM	NOON	AM	
0	0	0	0
146	0	303	1
35	0	47	0
0	0	0	0
355	0	237	
PM	NOON	AM	

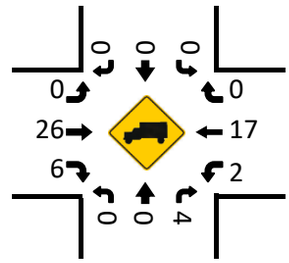
NORTHBOUND (Dorchester St)

PM	315	0	16	0	35	PM
NOON	0	0	0	0	0	NOON
AM	176	0	38	0	32	AM

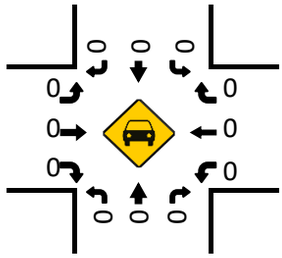
Cars (AM)



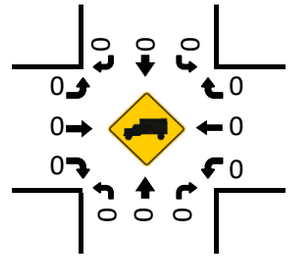
Total Trucks (AM)



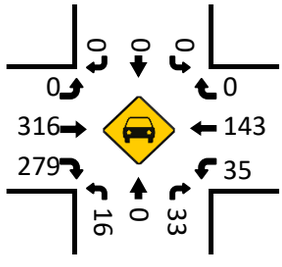
Cars (NOON)



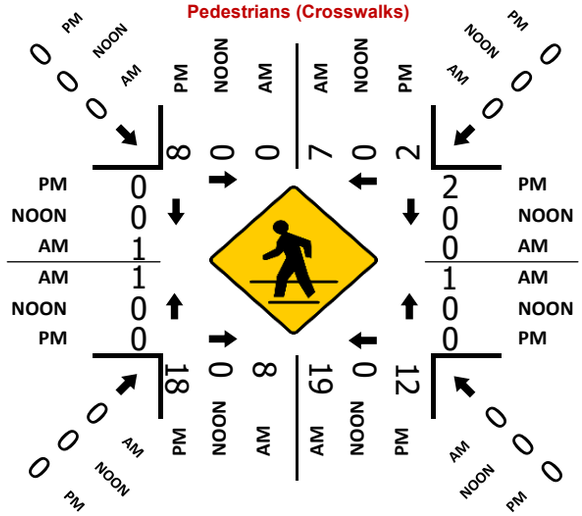
Total Trucks (NOON)



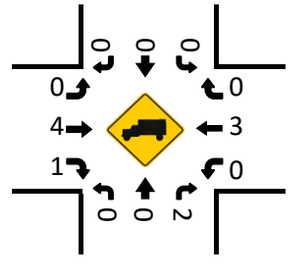
Cars (PM)



Pedestrians (Crosswalks)



Total Trucks (PM)



Project ID: 25-430193-009
Location: Dorchester St & E 1st St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Dorchester St Northbound						Dorchester St Southbound						E 1st St Eastbound						E 1st St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	5	0	6	0	7	11	0	0	0	0	3	0	0	20	14	0	1	34	5	21	0	0	0	26	71
6:15 AM	4	0	7	0	0	11	0	0	0	0	0	0	0	25	15	0	0	40	9	26	0	0	0	35	86
6:30 AM	7	0	10	0	0	17	0	0	0	0	4	0	0	23	10	0	0	33	14	31	0	0	1	45	95
6:45 AM	4	0	12	0	5	16	0	0	0	0	0	0	0	21	29	0	1	50	8	30	0	0	0	38	104
Total	20	0	35	0	12	55	0	0	0	0	7	0	0	89	68	0	2	157	36	108	0	0	1	144	356
7:00 AM	2	0	13	0	4	15	0	0	0	0	2	0	0	31	29	0	1	60	13	39	0	0	1	52	127
7:15 AM	6	0	4	0	6	10	0	0	0	0	1	0	0	33	24	0	0	57	10	78	0	0	1	88	155
7:30 AM	7	0	6	0	4	13	0	0	0	0	2	0	0	39	28	0	0	67	11	56	0	1	0	68	148
7:45 AM	8	0	8	0	7	16	0	0	0	0	1	0	0	63	21	0	0	84	17	57	0	0	1	74	174
Total	23	0	31	0	21	54	0	0	0	0	6	0	0	166	102	0	1	268	51	230	0	1	3	282	604
8:00 AM	14	0	9	0	9	23	0	0	0	0	1	0	0	52	41	0	0	93	11	94	0	0	0	105	221
8:15 AM	10	0	11	0	7	21	0	0	0	0	2	0	0	48	32	0	2	80	11	68	0	0	0	79	180
8:30 AM	6	0	4	0	4	10	0	0	0	0	3	0	0	42	35	0	0	77	8	84	0	0	0	92	179
8:45 AM	5	0	5	0	6	10	0	0	0	0	0	0	0	35	39	0	0	74	11	70	0	0	0	81	165
Total	35	0	29	0	26	64	0	0	0	0	6	0	0	177	147	0	2	324	41	316	0	0	0	357	745
BREAK																									
4:00 PM	6	0	4	0	2	10	0	0	0	0	1	0	0	59	63	0	0	122	13	32	0	0	1	45	177
4:15 PM	5	0	3	0	7	8	0	0	0	0	1	0	0	74	68	0	0	142	9	27	0	0	1	36	186
4:30 PM	4	0	6	0	4	10	0	0	0	0	1	0	0	73	94	0	0	167	9	37	0	0	0	46	223
4:45 PM	4	0	5	0	3	9	0	0	0	0	2	0	0	73	60	0	1	133	5	28	0	0	0	33	175
Total	19	0	18	0	16	37	0	0	0	0	5	0	0	279	285	0	1	564	36	124	0	0	2	160	761
5:00 PM	3	0	13	0	6	16	0	0	0	0	2	0	0	72	53	0	0	125	10	48	0	0	0	58	199
5:15 PM	7	0	9	0	8	16	0	0	0	0	3	0	0	86	78	0	0	164	9	32	0	0	1	41	221
5:30 PM	5	0	9	0	5	14	0	0	0	0	5	0	0	87	82	0	0	169	7	33	0	0	1	40	223
5:45 PM	1	0	4	0	11	5	0	0	0	0	0	0	0	75	67	0	0	142	9	33	0	0	0	42	189
Total	16	0	35	0	30	51	0	0	0	0	10	0	0	320	280	0	0	600	35	146	0	0	2	181	832
6:00 PM	3	0	3	0	6	6	0	0	0	0	7	0	0	67	67	1	0	135	11	43	0	0	0	54	195
6:15 PM	9	0	6	0	4	15	0	0	0	0	3	0	0	92	70	0	0	162	5	30	0	0	0	35	212
6:30 PM	9	0	5	0	3	14	0	0	0	0	6	0	0	55	59	0	0	114	11	26	0	0	0	37	165
6:45 PM	5	0	2	0	8	7	0	0	0	0	3	0	0	58	59	0	0	117	3	25	0	0	1	28	152
Total	26	0	16	0	21	42	0	0	0	0	19	0	0	272	255	1	0	528	30	124	0	0	1	154	724
Grand Total	139	0	164	0	126	303	0	0	0	0	53	0	0	1303	1137	1	6	2441	229	1048	0	1	9	1278	4022
Apprch %	45.9	0.0	54.1	0.0	41.6		0.0	0.0	0.0	0.0	0.0		0.0	53.4	46.6	0.0	0.2		17.9	82.0	0.0	0.1	0.7		
Total %	3.5	0.0	4.1	0.0	3.1	7.5	0.0	0.0	0.0	0.0	1.3	0.0	0.0	32.4	28.3	0.0	0.1	60.7	5.7	26.1	0.0	0.0	0.2	31.8	
Cars, PU, Vans	138	0	149	0		287	0	0	0	0		0	0	1223	1115	1		2339	222	990	0	0		1212	3838
% Cars, PU, Vans	99.3	0.0	90.9	0.0		94.7	0.0	0.0	0.0	0.0		0.0	0.0	93.9	98.1	100.0		95.8	96.9	94.5	0.0	0.0		94.8	95.4
Buses	0	0	2	0		2	0	0	0	0		0	0	28	1	0		29	1	9	0	0		10	41
%Buses	0.0	0.0	1.2	0.0		0.7	0.0	0.0	0.0	0.0		0.0	0.0	2.1	0.1	0.0		1.2	0.4	0.9	0.0	0.0		0.8	1.0
Heavy Trucks	1	0	13	0		14	0	0	0	0		0	0	52	21	0		73	6	49	0	1		56	143
%Heavy Trucks	0.7	0.0	7.9	0.0		4.6	0.0	0.0	0.0	0.0		0.0	0.0	4.0	1.8	0.0		3.0	2.6	4.7	0.0	100.0		4.4	3.6

Project ID: 25-430193-009
Location: Dorchester St & E 1st St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Dorchester St Northbound					Dorchester St Southbound					E 1st St Eastbound					E 1st St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	8	0	8	0	16	0	0	0	0	0	0	63	21	0	84	17	57	0	0	74	174
8:00 AM	14	0	9	0	23	0	0	0	0	0	0	52	41	0	93	11	94	0	0	105	221
8:15 AM	10	0	11	0	21	0	0	0	0	0	0	48	32	0	80	11	68	0	0	79	180
8:30 AM	6	0	4	0	10	0	0	0	0	0	0	42	35	0	77	8	84	0	0	92	179
Total Volume	38	0	32	0	70	0	0	0	0	0	0	205	129	0	334	47	303	0	0	350	754
% App. Total	54.3	0.0	45.7	0.0	100	0.0	0.0	0.0	0.0	0	0.0	61.4	38.6	0.0	100	13.4	86.6	0.0	0.0	100	
PHF					0.761										0.898					0.833	0.853
Cars, PU, Vans	38	0	28	0	66	0	0	0	0	0	0	179	123	0	302	45	286	0	0	331	699
% Cars, PU, Vans	100.0	0.0	87.5	0.0	94.3	0.0	0.0	0.0	0.0	0.0	0.0	87.3	95.3	0.0	90.4	95.7	94.4	0.0	0.0	94.6	92.7
Buses	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	1	2	0	0	3	10
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	2.1	2.1	0.7	0.0	0.0	0.9	1.3
Heavy Trucks	0	0	4	0	4	0	0	0	0	0	0	19	6	0	25	1	15	0	0	16	45
%Heavy Trucks	0.0	0.0	12.5	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	9.3	4.7	0.0	7.5	2.1	5.0	0.0	0.0	4.6	6.0

PM

	Dorchester St Northbound					Dorchester St Southbound					E 1st St Eastbound					E 1st St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	3	0	13	0	16	0	0	0	0	0	0	72	53	0	125	10	48	0	0	58	199
5:15 PM	7	0	9	0	16	0	0	0	0	0	0	86	78	0	164	9	32	0	0	41	221
5:30 PM	5	0	9	0	14	0	0	0	0	0	0	87	82	0	169	7	33	0	0	40	223
5:45 PM	1	0	4	0	5	0	0	0	0	0	0	75	67	0	142	9	33	0	0	42	189
Total Volume	16	0	35	0	51	0	0	0	0	0	0	320	280	0	600	35	146	0	0	181	832
% App. Total	31.4	0.0	68.6	0.0	100	0.0	0.0	0.0	0.0	0	0.0	53.3	46.7	0.0	100	19.3	80.7	0.0	0.0	100	
PHF					0.797										0.888					0.780	0.933
Cars, PU, Vans	16	0	33	0	49	0	0	0	0	0	0	316	279	0	595	35	143	0	0	178	822
% Cars, PU, Vans	100.0	0.0	94.3	0.0	96.1	0.0	0.0	0.0	0.0	0.0	0.0	98.8	99.6	0.0	99.2	100.0	97.9	0.0	0.0	98.3	98.8
Buses	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.4
Heavy Trucks	0	0	2	0	2	0	0	0	0	0	0	2	0	0	2	0	3	0	0	3	7
%Heavy Trucks	0.0	0.0	5.7	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	2.1	0.0	0.0	1.7	0.8

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston
Control: 1-Way Stop(WB)

Project ID: 25-430193-010
Date: 12/16/2025

Data - Total

NS/EW Streets:	Dorchester St				Dorchester St				W First St/E 2nd St				W First St/E 2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	15	8	1	0	1	17	1	0	1	0	0	0	10	1	1	0	56
6:15 AM	13	12	1	0	3	20	1	0	0	0	0	0	1	2	0	0	53
6:30 AM	15	12	1	0	0	21	3	0	0	0	0	0	6	3	2	0	63
6:45 AM	12	14	4	0	4	27	3	0	0	0	0	0	2	7	2	0	75
7:00 AM	13	15	2	1	5	34	2	0	0	0	0	0	2	5	1	0	80
7:15 AM	18	10	3	0	3	27	2	1	0	0	0	0	5	4	0	0	73
7:30 AM	17	12	4	0	3	34	3	0	0	0	0	0	3	6	1	0	83
7:45 AM	19	14	5	0	1	31	2	0	0	0	0	0	6	8	0	0	86
8:00 AM	18	20	2	0	0	53	0	0	0	0	0	0	7	13	2	0	115
8:15 AM	22	19	2	0	2	37	1	0	0	0	0	0	7	17	0	0	107
8:30 AM	17	9	5	0	4	38	3	0	0	0	0	0	6	11	0	0	93
8:45 AM	16	9	5	0	3	38	3	0	0	0	0	0	4	20	1	0	99
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	195	154	35	1	29	377	24	1	1	0	0	0	59	97	10	0	983
APPROACH %'s :	50.65%	40.00%	9.09%	0.26%	6.73%	87.47%	5.57%	0.23%	100.00%	0.00%	0.00%	0.00%	35.54%	58.43%	6.02%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	73	57	14	0	9	166	7	0	0	0	0	0	24	61	3	0	414
PEAK HR FACTOR :	0.830	0.713	0.700	0.000	0.563	0.783	0.583	0.000	0.000	0.000	0.000	0.000	0.857	0.763	0.375	0.000	0.900
	0.837				0.858								0.880				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	9	3	1	6	70	3	0	0	1	0	0	3	4	1	0	107
4:15 PM	4	9	4	0	3	68	4	0	0	0	0	0	3	5	0	0	100
4:30 PM	9	8	4	0	7	93	4	1	0	0	0	0	4	5	0	0	135
4:45 PM	9	9	1	0	5	58	1	0	0	0	0	0	5	5	0	0	93
5:00 PM	6	14	5	0	2	60	3	0	0	0	0	0	4	5	2	0	101
5:15 PM	14	14	4	0	3	74	7	0	0	0	1	0	1	3	1	0	122
5:30 PM	8	14	5	1	5	82	4	1	0	0	0	0	2	5	0	0	127
5:45 PM	10	5	3	0	8	61	6	1	0	0	0	0	6	3	0	0	103
6:00 PM	16	5	4	0	4	70	5	0	0	0	0	0	2	6	1	0	113
6:15 PM	14	15	1	1	5	62	5	0	0	0	0	0	5	8	0	1	117
6:30 PM	18	12	3	0	5	60	8	0	0	0	0	0	1	1	2	0	110
6:45 PM	10	7	4	0	6	47	8	0	0	0	0	0	5	1	0	0	88
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	124	121	41	3	59	805	58	3	0	1	1	0	41	51	7	1	1316
APPROACH %'s :	42.91%	41.87%	14.19%	1.04%	6.38%	87.03%	6.27%	0.32%	0.00%	50.00%	50.00%	0.00%	41.00%	51.00%	7.00%	1.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	48	38	16	1	20	287	22	2	0	0	1	0	11	17	2	0	465
PEAK HR FACTOR :	0.750	0.679	0.800	0.250	0.625	0.875	0.786	0.500	0.000	0.000	0.250	0.000	0.458	0.708	0.500	0.000	0.915
	0.805				0.899				0.250				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston
Control: 1-Way Stop(WB)

Project ID: 25-430193-010
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Dorchester St				Dorchester St				W First St/E 2nd St				W First St/E 2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	14	8	1	0	1	15	1	0	1	0	0	0	9	1	1	0	52
6:15 AM	12	12	1	0	3	20	1	0	0	0	0	0	1	2	0	0	52
6:30 AM	15	12	0	0	0	21	3	0	0	0	0	0	6	3	2	0	62
6:45 AM	12	11	4	0	3	23	3	0	0	0	0	0	2	6	2	0	66
7:00 AM	13	14	2	1	5	32	1	0	0	0	0	0	2	5	1	0	76
7:15 AM	17	9	3	0	3	27	2	1	0	0	0	0	4	4	0	0	70
7:30 AM	17	10	4	0	1	32	3	0	0	0	0	0	3	6	1	0	77
7:45 AM	19	14	5	0	1	29	2	0	0	0	0	0	6	8	0	0	84
8:00 AM	18	18	2	0	0	52	0	0	0	0	0	0	7	13	2	0	112
8:15 AM	22	17	2	0	2	33	0	0	0	0	0	0	7	17	0	0	100
8:30 AM	17	9	5	0	4	37	3	0	0	0	0	0	6	11	0	0	92
8:45 AM	15	7	5	0	3	35	3	0	0	0	0	0	3	20	1	0	92
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	191	141	34	1	26	356	22	1	1	0	0	0	56	96	10	0	935
APPROACH %'s :	52.04%	38.42%	9.26%	0.27%	6.42%	87.90%	5.43%	0.25%	100.00%	0.00%	0.00%	0.00%	34.57%	59.26%	6.17%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	72	51	14	0	9	157	6	0	0	0	0	0	23	61	3	0	396
PEAK HR FACTOR :	0.818	0.708	0.700	0.000	0.563	0.755	0.500	0.000	0.000	0.000	0.000	0.000	0.821	0.763	0.375	0.000	0.884
	0.835				0.827								0.906				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	9	3	1	6	69	3	0	0	1	0	0	3	4	0	0	105
4:15 PM	4	9	4	0	3	68	4	0	0	0	0	0	3	5	0	0	100
4:30 PM	9	8	4	0	7	93	4	1	0	0	0	0	4	4	0	0	134
4:45 PM	8	9	1	0	5	58	1	0	0	0	0	0	4	5	0	0	91
5:00 PM	6	13	5	0	2	60	3	0	0	0	0	0	3	5	2	0	99
5:15 PM	13	14	4	0	3	74	7	0	0	0	1	0	1	3	1	0	121
5:30 PM	8	13	5	1	5	81	4	1	0	0	0	0	2	5	0	0	125
5:45 PM	10	5	3	0	8	61	6	1	0	0	0	0	6	3	0	0	103
6:00 PM	15	5	4	0	4	70	5	0	0	0	0	0	2	6	1	0	112
6:15 PM	14	15	1	1	5	62	5	0	0	0	0	0	5	8	0	1	117
6:30 PM	18	12	3	0	5	59	8	0	0	0	0	0	1	1	2	0	109
6:45 PM	10	7	4	0	6	47	8	0	0	0	0	0	5	1	0	0	88
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	121	119	41	3	59	802	58	3	0	1	1	0	39	50	6	1	1304
APPROACH %'s :	42.61%	41.90%	14.44%	1.06%	6.40%	86.98%	6.29%	0.33%	0.00%	50.00%	50.00%	0.00%	40.63%	52.08%	6.25%	1.04%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	46	37	16	1	20	286	22	2	0	0	1	0	11	17	2	0	461
PEAK HR FACTOR :	0.767	0.661	0.800	0.250	0.625	0.883	0.786	0.500	0.000	0.000	0.250	0.000	0.458	0.708	0.500	0.000	0.922
	0.806				0.907				0.250				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston
Control: 1-Way Stop(WB)

Project ID: 25-430193-010
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Dorchester St				Dorchester St				W First St/E 2nd St				W First St/E 2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	4
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
						0.250											0.250

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston
Control: 1-Way Stop(WB)

Project ID: 25-430193-010
Date: 12/16/2025

Data - HT

NS/EW Streets:	Dorchester St				Dorchester St				W First St/E 2nd St				W First St/E 2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	2	0	0	1	4	0	0	0	0	0	0	0	1	0	0	8
7:00 AM	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	4
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
7:30 AM	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	2	0	0	0	4	1	0	0	0	0	0	0	0	0	0	7
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	1	2	0	0	0	3	0	0	0	0	0	0	1	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	11	1	0	3	20	2	0	0	0	0	0	2	1	0	0	44
APPROACH %'s :	25.00%	68.75%	6.25%	0.00%	12.00%	80.00%	8.00%	0.00%					66.67%	33.33%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	1	6	0	0	0	9	1	0	0	0	0	0	1	0	0	0	18
PEAK HR FACTOR :	0.250	0.750	0.000	0.000	0.000	0.563	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.643
		0.583				0.500								0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	2	0	0	0	2	0	0	0	0	0	0	1	1	1	0	10
APPROACH %'s :	60.00%	40.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					33.33%	33.33%	33.33%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
		0.750															

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston
Control: 1-Way Stop(WB)

Project ID: 25-430193-010
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Dorchester St				Dorchester St				W First St/E 2nd St				W First St/E 2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%									0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375
														0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	2	3	0	0	0	0	0	0	0	2	0	0	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	40.00%	60.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
					0.500												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Dorchester St & W First St/E 2nd St
City: Boston

Project ID: 25-430193-010
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Dorchester St		Dorchester St		W First St/E 2nd St		W First St/E 2nd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	1	3	1	5
6:15 AM	0	1	0	0	1	0	2	0	4
6:30 AM	1	0	2	1	0	1	4	0	9
6:45 AM	1	1	2	2	1	0	3	2	12
7:00 AM	0	0	0	1	0	0	2	2	5
7:15 AM	0	1	0	2	0	1	2	0	6
7:30 AM	0	1	2	1	1	0	6	2	13
7:45 AM	0	3	0	1	4	0	4	1	13
8:00 AM	1	3	0	0	1	0	2	1	8
8:15 AM	1	3	0	2	2	1	8	2	19
8:30 AM	1	0	1	1	2	0	7	1	13
8:45 AM	0	2	1	3	2	0	5	0	13
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	5	15	8	14	14	4	48	12	120
APPROACH %'s :	25.00%	75.00%	36.36%	63.64%	77.78%	22.22%	80.00%	20.00%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	3	8	2	6	7	1	22	4	53
PEAK HR FACTOR :	0.750	0.667	0.500	0.500	0.875	0.250	0.688	0.500	0.697
	0.688		0.500		0.667		0.650		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	3	1	0	1	1	2	3	12
4:15 PM	1	0	0	1	2	1	0	2	7
4:30 PM	1	0	2	0	1	1	4	0	9
4:45 PM	5	1	2	2	1	0	6	2	19
5:00 PM	2	1	0	1	2	0	0	4	10
5:15 PM	0	1	3	1	1	0	3	7	16
5:30 PM	3	1	0	0	0	2	3	4	13
5:45 PM	0	1	1	2	1	3	1	8	17
6:00 PM	0	2	0	3	0	1	3	4	13
6:15 PM	2	0	1	1	3	0	10	5	22
6:30 PM	1	5	1	0	0	4	3	10	24
6:45 PM	1	1	3	5	0	2	2	7	21
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	17	16	14	16	12	15	37	56	183
APPROACH %'s :	51.52%	48.48%	46.67%	53.33%	44.44%	55.56%	39.78%	60.22%	
PEAK HR :	**05:15 PM - 06:15 PM**								TOTAL
PEAK HR VOL :	3	5	4	6	2	6	10	23	59
PEAK HR FACTOR :	0.250	0.625	0.333	0.500	0.500	0.500	0.833	0.719	0.868
	0.500		0.625		0.500		0.825		

Prepared by National Data & Surveying Services

Dorchester St & W First St/E 2nd St

Peak Hour Turning Movement Count

ID: 25-430193-010
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 09:00 AM
NONE	NONE
05:15 PM - 06:15 PM	4:00 PM - 07:00 PM

SOUTHBOUND (Dorchester St)

AM	7	166	9	0	60	AM
NOON	0	0	0	0	0	NOON
PM	22	287	20	2	42	PM

EASTBOUND (W First St/E 2nd St)

AM	NOON	PM	
141	0	87	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	1	↴ 0
AM	NOON	PM	

WESTBOUND (W First St/E 2nd St)

PM	NOON	AM	
2	0	3	0 ↰
17	0	61	1 ←
11	0	24	0 ↙
0	0	0	0 ↳
36	0	23	⇨
PM	NOON	AM	

NORTHBOUND (Dorchester St)

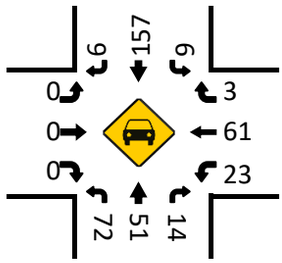
PM	300	1	48	38	16	PM
NOON	0	0	0	0	0	NOON
AM	190	0	73	57	14	AM

CONTROL: 1-Way Stop(WB)

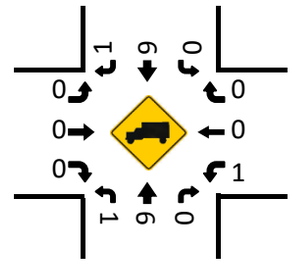
TEV	414 AM	0 NOON	465 PM
PHF	0.90		0.92

Turning movements at the intersection: 0 1 0 0 | 0 0 1 0

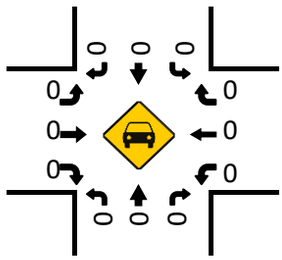
Cars (AM)



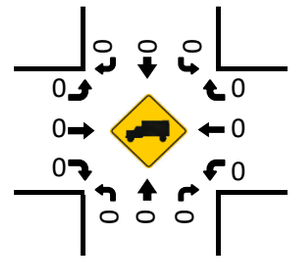
Total Trucks (AM)



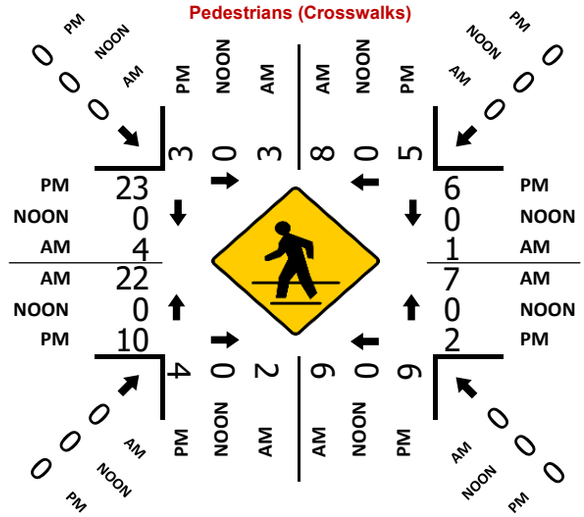
Cars (NOON)



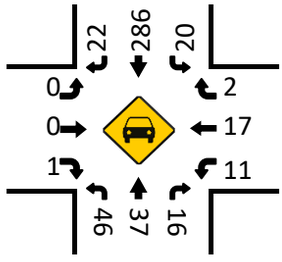
Total Trucks (NOON)



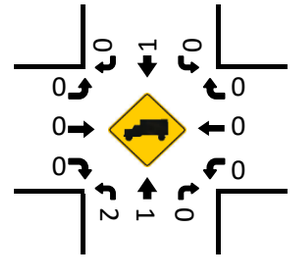
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-010
Location: Dorchester St & W First St/E 2nd St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Dorchester St Northbound						Dorchester St Southbound						W First St/E 2nd St Eastbound						W First St/E 2nd St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	15	8	1	0	0	24	1	17	1	0	0	19	1	0	0	0	4	1	10	1	1	0	1	12	56
6:15 AM	13	12	1	0	0	26	3	20	1	0	1	24	0	0	0	0	2	0	1	2	0	0	1	3	53
6:30 AM	15	12	1	0	3	28	0	21	3	0	1	24	0	0	0	0	4	0	6	3	2	0	1	11	63
6:45 AM	12	14	4	0	4	30	4	27	3	0	2	34	0	0	0	0	5	0	2	7	2	0	1	11	75
Total	55	46	7	0	7	108	8	85	8	0	4	101	1	0	0	0	15	1	19	13	5	0	4	37	247
7:00 AM	13	15	2	1	1	31	5	34	2	0	0	41	0	0	0	0	4	0	2	5	1	0	0	8	80
7:15 AM	18	10	3	0	2	31	3	27	2	1	1	33	0	0	0	0	2	0	5	4	0	0	1	9	73
7:30 AM	17	12	4	0	3	33	3	34	3	0	1	40	0	0	0	0	8	0	3	6	1	0	1	10	83
7:45 AM	19	14	5	0	1	38	1	31	2	0	3	34	0	0	0	0	5	0	6	8	0	0	4	14	86
Total	67	51	14	1	7	133	12	126	9	1	5	148	0	0	0	0	19	0	16	23	2	0	6	41	322
8:00 AM	18	20	2	0	0	40	0	53	0	0	4	53	0	0	0	0	3	0	7	13	2	0	1	22	115
8:15 AM	22	19	2	0	2	43	2	37	1	0	4	40	0	0	0	0	10	0	7	17	0	0	3	24	107
8:30 AM	17	9	5	0	2	31	4	38	3	0	1	45	0	0	0	0	8	0	6	11	0	0	2	17	93
8:45 AM	16	9	5	0	4	30	3	38	3	0	2	44	0	0	0	0	5	0	4	20	1	0	2	25	99
Total	73	57	14	0	8	144	9	166	7	0	11	182	0	0	0	0	26	0	24	61	3	0	8	88	414
BREAK																									
4:00 PM	6	9	3	1	1	19	6	70	3	0	4	79	0	1	0	0	5	1	3	4	1	0	2	8	107
4:15 PM	4	9	4	0	1	17	3	68	4	0	1	75	0	0	0	0	2	0	3	5	0	0	3	8	100
4:30 PM	9	8	4	0	2	21	7	93	4	1	1	105	0	0	0	0	4	0	4	5	0	0	2	9	135
4:45 PM	9	9	1	0	4	19	5	58	1	0	6	64	0	0	0	0	8	0	5	5	0	0	1	10	93
Total	28	35	12	1	8	76	21	289	12	1	12	323	0	1	0	0	19	1	15	19	1	0	8	35	435
5:00 PM	6	14	5	0	1	25	2	60	3	0	3	65	0	0	0	0	4	0	4	5	2	0	2	11	101
5:15 PM	14	14	4	0	4	32	3	74	7	0	1	84	0	0	1	0	10	1	1	3	1	0	1	5	122
5:30 PM	8	14	5	1	0	28	5	82	4	1	4	92	0	0	0	0	7	0	2	5	0	0	2	7	127
5:45 PM	10	5	3	0	3	18	8	61	6	1	1	76	0	0	0	0	9	0	6	3	0	0	4	9	103
Total	38	47	17	1	8	103	18	277	20	2	9	317	0	0	1	0	30	1	13	16	3	0	9	32	453
6:00 PM	16	5	4	0	3	25	4	70	5	0	2	79	0	0	0	0	7	0	2	6	1	0	1	9	113
6:15 PM	14	15	1	1	2	31	5	62	5	0	2	72	0	0	0	0	15	0	5	8	0	1	3	14	117
6:30 PM	18	12	3	0	1	33	5	60	8	0	6	73	0	0	0	0	13	0	1	1	2	0	4	4	110
6:45 PM	10	7	4	0	8	21	6	47	8	0	2	61	0	0	0	0	9	0	5	1	0	0	2	6	88
Total	58	39	12	1	14	110	20	239	26	0	12	285	0	0	0	0	44	0	13	16	3	1	10	33	428
Grand Total	319	275	76	4	52	674	88	1182	82	4	53	1356	1	1	1	0	153	3	100	148	17	1	45	266	2299
Apprch %	47.3	40.8	11.3	0.6	7.7		6.5	87.2	6.0	0.3	3.9		33.3	33.3	33.3	0.0	5100.0		37.6	55.6	6.4	0.4	16.9		
Total %	13.9	12.0	3.3	0.2	2.3	29.3	3.8	51.4	3.6	0.2	2.3	59.0	0.0	0.0	0.0	0.0	6.7	0.1	4.3	6.4	0.7	0.0	2.0	11.6	
Cars, PU, Vans	312	260	75	4		651	85	1158	80	4		1327	1	1	1	0		3	95	146	16	1		258	2239
% Cars, PU, Vans	97.8	94.5	98.7	100.0		96.6	96.6	98.0	97.6	100.0		97.9	100.0	100.0	100.0	0.0		100.0	95.0	98.6	94.1	100.0		97.0	97.4
Buses	0	2	0	0		2	0	2	0	0		2	0	0	0	0		0	2	0	0	0		2	6
%Buses	0.0	0.7	0.0	0.0		0.3	0.0	0.2	0.0	0.0		0.1	0.0	0.0	0.0	0.0		0.0	2.0	0.0	0.0	0.0		0.8	0.3
Heavy Trucks	7	13	1	0		21	3	22	2	0		27	0	0	0	0		0	3	2	1	0		6	54
%Heavy Trucks	2.2	4.7	1.3	0.0		3.1	3.4	1.9	2.4	0.0		2.0	0.0	0.0	0.0	0.0		0.0	3.0	1.4	5.9	0.0		2.3	2.3

Project ID: 25-430193-010
Location: Dorchester St & W First St/E 2nd St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Dorchester St Northbound					Dorchester St Southbound					W First St/E 2nd St Eastbound					W First St/E 2nd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	18	20	2	0	40	0	53	0	0	53	0	0	0	0	0	7	13	2	0	22	115
8:15 AM	22	19	2	0	43	2	37	1	0	40	0	0	0	0	0	7	17	0	0	24	107
8:30 AM	17	9	5	0	31	4	38	3	0	45	0	0	0	0	0	6	11	0	0	17	93
8:45 AM	16	9	5	0	30	3	38	3	0	44	0	0	0	0	0	4	20	1	0	25	99
Total Volume	73	57	14	0	144	9	166	7	0	182	0	0	0	0	0	24	61	3	0	88	414
% App. Total	50.7	39.6	9.7	0.0	100	4.9	91.2	3.8	0.0	100	0.0	0.0	0.0	0.0	0	27.3	69.3	3.4	0.0	100	
PHF					0.837					0.858										0.880	0.900
Cars, PU, Vans	72	51	14	0	137	9	157	6	0	172	0	0	0	0	0	23	61	3	0	87	396
% Cars, PU, Vans	98.6	89.5	100.0	0.0	95.1	100.0	94.6	85.7	0.0	94.5	0.0	0.0	0.0	0.0	0.0	95.8	100.0	100.0	0.0	98.9	95.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Trucks	1	6	0	0	7	0	9	1	0	10	0	0	0	0	0	1	0	0	0	1	18
%Heavy Trucks	1.4	10.5	0.0	0.0	4.9	0.0	5.4	14.3	0.0	5.5	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	1.1	4.3

PM

	Dorchester St Northbound					Dorchester St Southbound					W First St/E 2nd St Eastbound					W First St/E 2nd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	14	14	4	0	32	3	74	7	0	84	0	0	1	0	1	1	3	1	0	5	122
5:30 PM	8	14	5	1	28	5	82	4	1	92	0	0	0	0	0	2	5	0	0	7	127
5:45 PM	10	5	3	0	18	8	61	6	1	76	0	0	0	0	0	6	3	0	0	9	103
6:00 PM	16	5	4	0	25	4	70	5	0	79	0	0	0	0	0	2	6	1	0	9	113
Total Volume	48	38	16	1	103	20	287	22	2	331	0	0	1	0	1	11	17	2	0	30	465
% App. Total	46.6	36.9	15.5	1.0	100	6.0	86.7	6.6	0.6	100	0.0	0.0	100.0	0.0	100	36.7	56.7	6.7	0.0	100	
PHF					0.805					0.899					0.250					0.833	0.915
Cars, PU, Vans	46	37	16	1	100	20	286	22	2	330	0	0	1	0	1	11	17	2	0	30	461
% Cars, PU, Vans	95.8	97.4	100.0	100.0	97.1	100.0	99.7	100.0	100.0	99.7	0.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	99.1
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Heavy Trucks	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
%Heavy Trucks	4.2	2.6	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston
Control: No Control

Project ID: 25-430193-011
Date: 12/16/2025

Data - Total

NS/EW Streets:	Pappas Way				Pappas Way				UPS Customer Center Dwy				UPS Customer Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	18	0	0	0	25	1	0	0	0	0	0	0	0	0	0	45
6:15 AM	0	20	0	0	0	24	0	0	0	0	0	0	0	0	0	0	44
6:30 AM	0	30	0	0	0	16	1	0	1	0	0	0	0	0	0	0	48
6:45 AM	0	27	0	0	0	29	2	0	2	0	1	0	0	0	0	0	61
7:00 AM	1	26	0	0	0	25	6	0	0	0	1	0	0	0	0	0	59
7:15 AM	0	30	0	0	0	24	1	0	1	0	0	0	0	0	0	0	56
7:30 AM	1	34	0	0	0	37	4	0	0	0	1	0	0	0	0	0	77
7:45 AM	1	32	0	0	0	26	4	0	2	0	1	0	0	0	0	0	66
8:00 AM	3	37	0	0	0	29	6	0	0	0	1	0	0	0	0	0	76
8:15 AM	2	36	0	0	0	25	5	0	2	0	1	0	0	0	0	0	71
8:30 AM	1	37	0	0	0	26	6	0	1	0	0	0	0	0	0	0	71
8:45 AM	8	30	0	0	0	41	3	0	0	0	0	0	0	0	0	0	82
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	18	357	0	0	0	327	39	0	9	0	6	0	0	0	0	0	756
APPROACH %'s :	4.80%	95.20%	0.00%	0.00%	0.00%	89.34%	10.66%	0.00%	60.00%	0.00%	40.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	14	140	0	0	0	121	20	0	3	0	2	0	0	0	0	0	300
PEAK HR FACTOR :	0.438	0.946	0.000	0.000	0.000	0.738	0.833	0.000	0.375	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.915
	0.963				0.801				0.417								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	25	0	0	0	55	1	0	3	0	1	0	0	0	0	0	85
4:15 PM	1	9	0	0	0	62	1	0	4	0	1	0	0	0	0	0	78
4:30 PM	1	19	0	0	0	74	0	0	2	0	4	0	0	0	0	0	100
4:45 PM	0	19	0	0	0	61	1	0	1	0	4	0	0	0	0	0	86
5:00 PM	1	21	0	0	0	65	1	0	2	0	1	0	0	0	0	0	91
5:15 PM	1	22	0	0	0	81	3	0	1	0	3	0	0	0	0	0	111
5:30 PM	0	13	0	0	0	93	1	0	2	0	2	0	0	0	0	0	111
5:45 PM	0	13	0	0	0	72	1	0	3	0	1	0	0	0	0	0	90
6:00 PM	2	23	0	0	0	69	1	0	2	0	1	0	0	0	0	0	98
6:15 PM	1	18	0	0	0	67	1	0	0	0	3	0	0	0	0	0	90
6:30 PM	1	14	0	0	0	60	0	0	1	0	1	0	0	0	0	0	77
6:45 PM	0	14	0	0	0	52	1	0	0	0	0	0	0	0	0	0	67
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	210	0	0	0	811	12	0	21	0	22	0	0	0	0	0	1084
APPROACH %'s :	3.67%	96.33%	0.00%	0.00%	0.00%	98.54%	1.46%	0.00%	48.84%	0.00%	51.16%	0.00%					
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	3	71	0	0	0	315	6	0	8	0	7	0	0	0	0	0	410
PEAK HR FACTOR :	0.375	0.772	0.000	0.000	0.000	0.847	0.500	0.000	0.667	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.923
	0.740				0.854				0.938								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston
Control: No Control

Project ID: 25-430193-011
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Pappas Way				Pappas Way				UPS Customer Center Dwy				UPS Customer Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	15	0	0	0	21	1	0	0	0	0	0	0	0	0	0	38
6:15 AM	0	14	0	0	0	21	0	0	0	0	0	0	0	0	0	0	35
6:30 AM	0	20	0	0	0	14	1	0	0	0	0	0	0	0	0	0	35
6:45 AM	0	22	0	0	0	28	2	0	1	0	0	0	0	0	0	0	53
7:00 AM	1	19	0	0	0	20	5	0	0	0	1	0	0	0	0	0	46
7:15 AM	0	25	0	0	0	19	1	0	0	0	0	0	0	0	0	0	45
7:30 AM	1	32	0	0	0	31	3	0	0	0	1	0	0	0	0	0	68
7:45 AM	1	30	0	0	0	21	4	0	1	0	1	0	0	0	0	0	58
8:00 AM	3	34	0	0	0	28	6	0	0	0	1	0	0	0	0	0	72
8:15 AM	1	33	0	0	0	20	2	0	0	0	0	0	0	0	0	0	56
8:30 AM	1	32	0	0	0	25	5	0	1	0	0	0	0	0	0	0	64
8:45 AM	8	27	0	0	0	38	3	0	0	0	0	0	0	0	0	0	76
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	17	303	0	0	0	286	33	0	3	0	4	0	0	0	0	0	646
APPROACH %'s :	5.31%	94.69%	0.00%	0.00%	0.00%	89.66%	10.34%	0.00%	42.86%	0.00%	57.14%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	13	126	0	0	0	111	16	0	1	0	1	0	0	0	0	0	268
PEAK HR FACTOR :	0.406	0.926	0.000	0.000	0.000	0.730	0.667	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.882
	0.939				0.774				0.500								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	24	0	0	0	54	1	0	3	0	1	0	0	0	0	0	83
4:15 PM	1	7	0	0	0	60	1	0	4	0	1	0	0	0	0	0	74
4:30 PM	0	19	0	0	0	73	0	0	2	0	4	0	0	0	0	0	98
4:45 PM	0	17	0	0	0	60	0	0	1	0	4	0	0	0	0	0	82
5:00 PM	1	21	0	0	0	64	1	0	2	0	1	0	0	0	0	0	90
5:15 PM	0	21	0	0	0	81	3	0	1	0	3	0	0	0	0	0	109
5:30 PM	0	11	0	0	0	92	0	0	2	0	1	0	0	0	0	0	106
5:45 PM	0	13	0	0	0	68	0	0	3	0	1	0	0	0	0	0	85
6:00 PM	2	21	0	0	0	68	1	0	2	0	1	0	0	0	0	0	95
6:15 PM	1	16	0	0	0	66	1	0	0	0	3	0	0	0	0	0	87
6:30 PM	1	14	0	0	0	57	0	0	1	0	1	0	0	0	0	0	74
6:45 PM	0	13	0	0	0	50	0	0	0	0	0	0	0	0	0	0	63
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	197	0	0	0	793	8	0	21	0	21	0	0	0	0	0	1046
APPROACH %'s :	2.96%	97.04%	0.00%	0.00%	0.00%	99.00%	1.00%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	2	66	0	0	0	309	4	0	8	0	6	0	0	0	0	0	395
PEAK HR FACTOR :	0.250	0.786	0.000	0.000	0.000	0.840	0.333	0.000	0.667	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.906
	0.739				0.851				0.875								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston
Control: No Control

Project ID: 25-430193-011
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Pappas Way				Pappas Way				UPS Customer Center Dwy				UPS Customer Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
6:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
8:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	8	1	0	1	0	0	0	0	0	0	0	26
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	88.89%	11.11%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0	6
PEAK HR FACTOR :	0.000	0.375	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
		0.375				0.500				0.250							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	10
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
		0.500				0.250											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston
Control: No Control

Project ID: 25-430193-011
Date: 12/16/2025

Data - HT

NS/EW Streets:	Pappas Way				Pappas Way				UPS Customer Center Dwy				UPS Customer Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
6:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	7	0	0	0	2	0	0	1	0	0	0	0	0	0	0	10
6:45 AM	0	3	0	0	0	1	0	0	1	0	1	0	0	0	0	0	6
7:00 AM	0	7	0	0	0	4	1	0	0	0	0	0	0	0	0	0	12
7:15 AM	0	3	0	0	0	4	0	0	1	0	0	0	0	0	0	0	8
7:30 AM	0	2	0	0	0	5	1	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	1	0	0	0	4	0	0	1	0	0	0	0	0	0	0	6
8:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	1	2	0	0	0	5	2	0	1	0	1	0	0	0	0	0	12
8:30 AM	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5
8:45 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	38	0	0	0	33	5	0	5	0	2	0	0	0	0	0	84
APPROACH %'s :	2.56%	97.44%	0.00%	0.00%	0.00%	86.84%	13.16%	0.00%	71.43%	0.00%	28.57%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	1	11	0	0	0	9	3	0	1	0	1	0	0	0	0	0	26
PEAK HR FACTOR :	0.250	0.917	0.000	0.000	0.000	0.450	0.375	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.542
	1.000				0.429				0.250								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	5
6:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	9	0	0	0	12	4	0	0	0	1	0	0	0	0	0	28
APPROACH %'s :	18.18%	81.82%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	3	0	0	0	5	2	0	0	0	1	0	0	0	0	0	12
PEAK HR FACTOR :	0.250	0.375	0.000	0.000	0.000	0.313	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.600
	0.500				0.350				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston
Control: No Control

Project ID: 25-430193-011
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Pappas Way				Pappas Way				UPS Customer Center Dwy				UPS Customer Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375
	0.375																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	0	0	0	10	0	0	0	0	0	0	0	0	0	0	15
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
	0.250				0.500												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pappas Way & UPS Customer Center Dwy
City: Boston

Project ID: 25-430193-011
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Pappas Way		Pappas Way		UPS Customer Center Dwy		UPS Customer Center Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	2	0	0	4	0	6
6:15 AM	0	0	0	1	0	0	2	1	4
6:30 AM	0	0	0	0	0	0	1	0	1
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	2	0	0	0	0	2	4
7:45 AM	0	0	0	2	0	0	4	0	6
8:00 AM	0	0	1	2	0	0	1	0	4
8:15 AM	0	0	0	1	0	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	1	1	3
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	4	8	0	0	14	4	30
APPROACH %'s :			33.33%	66.67%			77.78%	22.22%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	2	3	0	0	3	1	9
PEAK HR FACTOR :			0.500	0.375			0.750	0.250	0.563
			0.417				0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	6	0	0	0	0	6	12
4:15 PM	0	0	6	0	0	0	0	7	13
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	1	2
5:00 PM	0	0	2	0	0	0	0	2	4
5:15 PM	0	0	1	0	0	0	0	2	3
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	3	0	0	2	1	6
6:00 PM	0	0	1	0	0	0	0	1	2
6:15 PM	0	0	1	0	0	0	0	1	2
6:30 PM	0	0	0	0	0	0	0	3	3
6:45 PM	0	0	0	2	0	0	2	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	18	5	0	0	4	24	51
APPROACH %'s :			78.26%	21.74%			14.29%	85.71%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	0	0	2	3	0	0	2	4	11
PEAK HR FACTOR :			0.500	0.250			0.250	0.500	0.458
			0.417				0.500		

Prepared by National Data & Surveying Services

Pappas Way & UPS Customer Center Dwy

Peak Hour Turning Movement Count

ID: 25-430193-011
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (Pappas Way)

AM	20	121	0	0	143	AM
NOON	0	0	0	0	0	NOON
PM	6	315	0	0	79	PM

EASTBOUND (UPS Customer Center Dwy)

AM	NOON	PM	
34	0	9	
0	0	0	0
3	0	8	0
0	0	0	1
2	0	7	0
AM	NOON	PM	

WESTBOUND (UPS Customer Center Dwy)

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

CONTROL

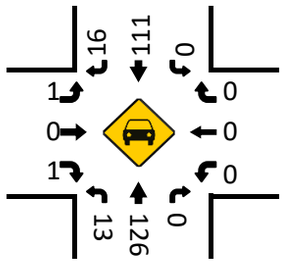
No Control

TEV	300 AM	0 NOON	410 PM
PHF	0.91		0.92

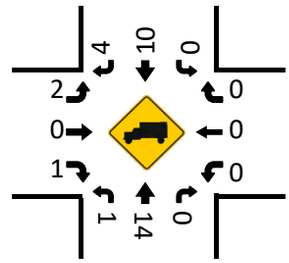
NORTHBOUND (Pappas Way)

PM	322	0	3	71	0	PM
NOON	0	0	0	0	0	NOON
AM	123	0	14	140	0	AM

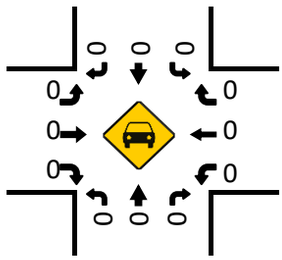
Cars (AM)



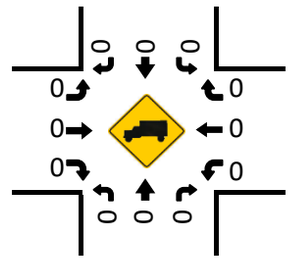
Total Trucks (AM)



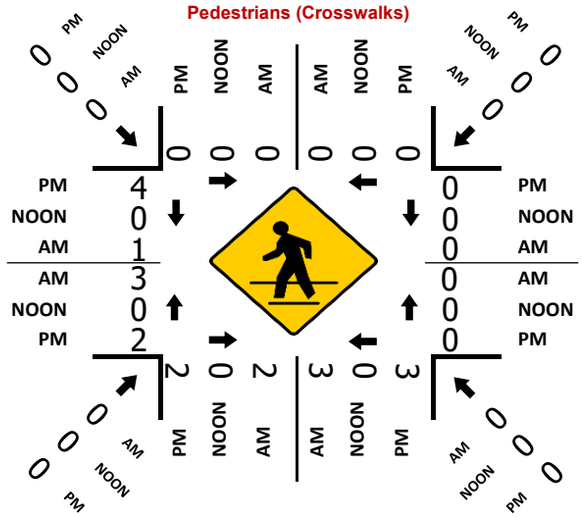
Cars (NOON)



Total Trucks (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
4
0
1
3
0
2
0
0
0
0
0
0
0
0
0
0
0
0
0

Project ID: 25-430193-011
Location: Pappas Way & UPS Customer Center Dwy
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pappas Way Northbound						Pappas Way Southbound						UPS Customer Center Dwy Eastbound						UPS Customer Center Dwy Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	1	18	0	0	2	19	0	25	1	0	0	26	0	0	0	0	4	0	0	0	0	0	0	0	45
6:15 AM	0	20	0	0	1	20	0	24	0	0	0	24	0	0	0	0	3	0	0	0	0	0	0	0	44
6:30 AM	0	30	0	0	0	30	0	16	1	0	0	17	1	0	0	0	1	1	0	0	0	0	0	0	48
6:45 AM	0	27	0	0	0	27	0	29	2	0	0	31	2	0	1	0	0	3	0	0	0	0	0	0	61
Total	1	95	0	0	3	96	0	94	4	0	0	98	3	0	1	0	8	4	0	0	0	0	0	0	198
7:00 AM	1	26	0	0	0	27	0	25	6	0	0	31	0	0	1	0	0	1	0	0	0	0	0	0	59
7:15 AM	0	30	0	0	0	30	0	24	1	0	0	25	1	0	0	0	0	1	0	0	0	0	0	0	56
7:30 AM	1	34	0	0	2	35	0	37	4	0	0	41	0	0	1	0	2	1	0	0	0	0	0	0	77
7:45 AM	1	32	0	0	2	33	0	26	4	0	0	30	2	0	1	0	4	3	0	0	0	0	0	0	66
Total	3	122	0	0	4	125	0	112	15	0	0	127	3	0	3	0	6	6	0	0	0	0	0	0	258
8:00 AM	3	37	0	0	3	40	0	29	6	0	0	35	0	0	1	0	1	1	0	0	0	0	0	0	76
8:15 AM	2	36	0	0	1	38	0	25	5	0	0	30	2	0	1	0	1	3	0	0	0	0	0	0	71
8:30 AM	1	37	0	0	0	38	0	26	6	0	0	32	1	0	0	0	0	1	0	0	0	0	0	0	71
8:45 AM	8	30	0	0	1	38	0	41	3	0	0	44	0	0	0	0	2	0	0	0	0	0	0	0	82
Total	14	140	0	0	5	154	0	121	20	0	0	141	3	0	2	0	4	5	0	0	0	0	0	0	300
BREAK																									
4:00 PM	0	25	0	0	6	25	0	55	1	0	0	56	3	0	1	0	6	4	0	0	0	0	0	0	85
4:15 PM	1	9	0	0	6	10	0	62	1	0	0	63	4	0	1	0	7	5	0	0	0	0	0	0	78
4:30 PM	1	19	0	0	0	20	0	74	0	0	0	74	2	0	4	0	0	6	0	0	0	0	0	0	100
4:45 PM	0	19	0	0	1	19	0	61	1	0	0	62	1	0	4	0	1	5	0	0	0	0	0	0	86
Total	2	72	0	0	13	74	0	252	3	0	0	255	10	0	10	0	14	20	0	0	0	0	0	0	349
5:00 PM	1	21	0	0	2	22	0	65	1	0	0	66	2	0	1	0	2	3	0	0	0	0	0	0	91
5:15 PM	1	22	0	0	1	23	0	81	3	0	0	84	1	0	3	0	2	4	0	0	0	0	0	0	111
5:30 PM	0	13	0	0	0	13	0	93	1	0	0	94	2	0	2	0	0	4	0	0	0	0	0	0	111
5:45 PM	0	13	0	0	3	13	0	72	1	0	0	73	3	0	1	0	3	4	0	0	0	0	0	0	90
Total	2	69	0	0	6	71	0	311	6	0	0	317	8	0	7	0	7	15	0	0	0	0	0	0	403
6:00 PM	2	23	0	0	1	25	0	69	1	0	0	70	2	0	1	0	1	3	0	0	0	0	0	0	98
6:15 PM	1	18	0	0	1	19	0	67	1	0	0	68	0	0	3	0	1	3	0	0	0	0	0	0	90
6:30 PM	1	14	0	0	0	15	0	60	0	0	0	60	1	0	1	0	3	2	0	0	0	0	0	0	77
6:45 PM	0	14	0	0	2	14	0	52	1	0	0	53	0	0	0	0	2	0	0	0	0	0	0	0	67
Total	4	69	0	0	4	73	0	248	3	0	0	251	3	0	5	0	7	8	0	0	0	0	0	0	332
Grand Total	26	567	0	0	35	593	0	1138	51	0	0	1189	30	0	28	0	46	58	0	0	0	0	0	0	1840
Apprch %	4.4	95.6	0.0	0.0	5.9		0.0	95.7	4.3	0.0	0.0		51.7	0.0	48.3	0.0	79.3		0.0	0.0	0.0	0.0	0.0		
Total %	1.4	30.8	0.0	0.0	1.9	32.2	0.0	61.8	2.8	0.0	0.0	64.6	1.6	0.0	1.5	0.0	2.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	23	500	0	0		523	0	1079	41	0		1120	24	0	25	0		49	0	0	0	0		0	1692
% Cars, PU, Vans	88.5	88.2	0.0	0.0		88.2	0.0	94.8	80.4	0.0		94.2	80.0	0.0	89.3	0.0		84.5	0.0	0.0	0.0	0.0		0.0	92.0
Buses	0	20	0	0		20	0	14	1	0		15	1	0	0	0		1	0	0	0	0		0	36
%Buses	0.0	3.5	0.0	0.0		3.4	0.0	1.2	2.0	0.0		1.3	3.3	0.0	0.0	0.0		1.7	0.0	0.0	0.0	0.0		0.0	2.0
Heavy Trucks	3	47	0	0		50	0	45	9	0		54	5	0	3	0		8	0	0	0	0		0	112
%Heavy Trucks	11.5	8.3	0.0	0.0		8.4	0.0	4.0	17.6	0.0		4.5	16.7	0.0	10.7	0.0		13.8	0.0	0.0	0.0	0.0		0.0	6.1

Project ID: 25-430193-011
Location: Pappas Way & UPS Customer Center Dwy
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Pappas Way Northbound					Pappas Way Southbound					UPS Customer Center Dwy Eastbound					UPS Customer Center Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	3	37	0	0	40	0	29	6	0	35	0	0	1	0	1	0	0	0	0	0	76
8:15 AM	2	36	0	0	38	0	25	5	0	30	2	0	1	0	3	0	0	0	0	0	71
8:30 AM	1	37	0	0	38	0	26	6	0	32	1	0	0	0	1	0	0	0	0	0	71
8:45 AM	8	30	0	0	38	0	41	3	0	44	0	0	0	0	0	0	0	0	0	0	82
Total Volume	14	140	0	0	154	0	121	20	0	141	3	0	2	0	5	0	0	0	0	0	300
% App. Total	9.1	90.9	0.0	0.0	100	0.0	85.8	14.2	0.0	100	60.0	0.0	40.0	0.0	100	0.0	0.0	0.0	0.0	0	
PHF					0.963					0.801					0.417						0.915
Cars, PU, Vans	13	126	0	0	139	0	111	16	0	127	1	0	1	0	2	0	0	0	0	0	268
% Cars, PU, Vans	92.9	90.0	0.0	0.0	90.3	0.0	91.7	80.0	0.0	90.1	33.3	0.0	50.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	89.3
Buses	0	3	0	0	3	0	1	1	0	2	1	0	0	0	1	0	0	0	0	0	6
%Buses	0.0	2.1	0.0	0.0	1.9	0.0	0.8	5.0	0.0	1.4	33.3	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	2.0
Heavy Trucks	1	11	0	0	12	0	9	3	0	12	1	0	1	0	2	0	0	0	0	0	26
%Heavy Trucks	7.1	7.9	0.0	0.0	7.8	0.0	7.4	15.0	0.0	8.5	33.3	0.0	50.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	8.7

PM

	Pappas Way Northbound					Pappas Way Southbound					UPS Customer Center Dwy Eastbound					UPS Customer Center Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	1	22	0	0	23	0	81	3	0	84	1	0	3	0	4	0	0	0	0	0	111
5:30 PM	0	13	0	0	13	0	93	1	0	94	2	0	2	0	4	0	0	0	0	0	111
5:45 PM	0	13	0	0	13	0	72	1	0	73	3	0	1	0	4	0	0	0	0	0	90
6:00 PM	2	23	0	0	25	0	69	1	0	70	2	0	1	0	3	0	0	0	0	0	98
Total Volume	3	71	0	0	74	0	315	6	0	321	8	0	7	0	15	0	0	0	0	0	410
% App. Total	4.1	95.9	0.0	0.0	100	0.0	98.1	1.9	0.0	100	53.3	0.0	46.7	0.0	100	0.0	0.0	0.0	0.0	0	
PHF					0.740					0.854					0.938						0.923
Cars, PU, Vans	2	66	0	0	68	0	309	4	0	313	8	0	6	0	14	0	0	0	0	0	395
% Cars, PU, Vans	66.7	93.0	0.0	0.0	91.9	0.0	98.1	66.7	0.0	97.5	100.0	0.0	85.7	0.0	93.3	0.0	0.0	0.0	0.0	0.0	96.3
Buses	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
%Buses	0.0	2.8	0.0	0.0	2.7	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Heavy Trucks	1	3	0	0	4	0	5	2	0	7	0	0	1	0	1	0	0	0	0	0	12
%Heavy Trucks	33.3	4.2	0.0	0.0	5.4	0.0	1.6	33.3	0.0	2.2	0.0	0.0	14.3	0.0	6.7	0.0	0.0	0.0	0.0	0.0	2.9

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-012
Date: 12/16/2025

Data - Total

NS/EW Streets:	Drydock Ave/Pappas Way				Drydock Ave/Pappas Way				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	6	10	1	0	5	9	10	0	12	56	15	0	3	96	29	0	252
6:15 AM	7	13	1	0	13	7	18	1	19	83	17	0	0	107	37	0	323
6:30 AM	18	14	0	0	13	6	20	0	8	76	13	0	2	151	40	0	361
6:45 AM	13	14	2	0	22	12	16	0	17	96	22	0	0	168	38	0	420
7:00 AM	18	10	0	0	17	8	22	0	4	77	23	0	0	183	30	0	392
7:15 AM	13	11	0	0	17	10	15	0	8	103	15	0	0	208	30	0	430
7:30 AM	18	16	0	0	17	8	23	0	15	66	21	1	3	195	25	0	408
7:45 AM	24	9	1	0	19	11	9	0	11	115	18	0	0	240	21	0	478
8:00 AM	27	8	0	1	19	8	12	0	20	99	28	0	0	224	27	0	473
8:15 AM	24	13	1	0	22	13	11	0	19	96	20	1	1	204	28	0	453
8:30 AM	23	10	1	0	22	10	23	0	16	119	17	0	1	233	47	0	522
8:45 AM	14	16	0	0	26	19	17	0	25	97	24	0	0	152	36	0	426
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	205	144	7	1	212	121	196	1	174	1083	233	2	10	2161	388	0	4938
APPROACH %'s :	57.42%	40.34%	1.96%	0.28%	40.00%	22.83%	36.98%	0.19%	11.66%	72.59%	15.62%	0.13%	0.39%	84.45%	15.16%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	98	40	3	1	82	42	55	0	66	429	83	1	2	901	123	0	1926
PEAK HR FACTOR :	0.907	0.769	0.750	0.250	0.932	0.808	0.598	0.000	0.825	0.901	0.741	0.250	0.500	0.939	0.654	0.000	0.922
	0.934				0.814				0.952				0.913				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	13	1	0	38	15	19	0	5	184	33	0	1	81	15	0	418
4:15 PM	13	3	0	0	38	31	25	1	15	214	36	1	0	103	12	0	492
4:30 PM	12	7	1	0	25	25	24	0	7	200	42	0	1	94	26	0	464
4:45 PM	4	14	1	0	44	29	26	1	13	159	33	1	0	84	14	0	423
5:00 PM	8	16	1	0	55	32	31	0	15	195	32	0	0	108	16	0	509
5:15 PM	7	15	2	0	42	38	30	0	4	215	49	0	0	96	13	1	512
5:30 PM	6	6	1	0	42	45	30	0	9	251	43	0	1	102	7	0	543
5:45 PM	9	8	1	0	46	23	32	0	9	216	47	0	1	80	11	0	483
6:00 PM	9	13	3	0	49	31	28	0	6	240	41	0	3	84	14	1	522
6:15 PM	10	5	3	0	53	22	17	0	11	212	43	0	0	95	13	0	484
6:30 PM	8	6	1	0	24	19	22	0	8	224	40	0	4	106	12	0	474
6:45 PM	7	7	2	0	32	14	21	0	7	176	34	0	0	58	4	0	362
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	106	113	17	0	488	324	305	2	109	2486	473	2	11	1091	157	2	5686
APPROACH %'s :	44.92%	47.88%	7.20%	0.00%	43.61%	28.95%	27.26%	0.18%	3.55%	80.98%	15.41%	0.07%	0.87%	86.52%	12.45%	0.16%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	31	42	7	0	179	137	120	0	28	922	180	0	5	362	45	2	2060
PEAK HR FACTOR :	0.861	0.700	0.583	0.000	0.913	0.761	0.938	0.000	0.778	0.918	0.918	0.000	0.417	0.887	0.804	0.500	0.948
	0.800				0.932				0.932				0.941				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-012
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Drydock Ave/Pappas Way				Drydock Ave/Pappas Way				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	4	10	0	0	5	8	8	0	10	48	13	0	3	90	28	0	227
6:15 AM	5	11	1	0	13	5	14	1	15	71	15	0	0	104	35	0	290
6:30 AM	10	11	0	0	13	5	14	0	8	71	11	0	2	150	39	0	334
6:45 AM	7	12	2	0	20	12	10	0	13	87	21	0	0	157	37	0	378
7:00 AM	12	8	0	0	17	6	14	0	4	71	18	0	0	172	27	0	349
7:15 AM	7	11	0	0	17	8	8	0	6	90	13	0	0	204	29	0	393
7:30 AM	17	14	0	0	16	8	14	0	11	57	19	1	2	188	24	0	371
7:45 AM	23	8	0	0	19	8	4	0	10	100	16	0	0	231	19	0	438
8:00 AM	25	8	0	0	19	8	6	0	19	88	26	0	0	217	27	0	443
8:15 AM	22	12	1	0	22	11	9	0	19	80	16	1	1	194	28	0	416
8:30 AM	20	9	0	0	21	9	17	0	15	104	15	0	1	211	47	0	469
8:45 AM	13	14	0	0	25	18	14	0	24	90	23	0	0	135	35	0	391
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	165	128	4	0	207	106	132	1	154	957	206	2	9	2053	375	0	4499
APPROACH %'s :	55.56%	43.10%	1.35%	0.00%	46.41%	23.77%	29.60%	0.22%	11.68%	72.55%	15.62%	0.15%	0.37%	84.24%	15.39%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	90	37	1	0	81	36	36	0	63	372	73	1	2	853	121	0	1766
PEAK HR FACTOR :	0.900	0.771	0.250	0.000	0.920	0.818	0.529	0.000	0.829	0.894	0.702	0.250	0.500	0.923	0.644	0.000	0.941
	0.914				0.814				0.950				0.942				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	13	1	0	37	15	18	0	4	178	33	0	1	73	14	0	399
4:15 PM	12	2	0	0	37	29	24	1	12	209	35	1	0	93	12	0	467
4:30 PM	12	7	1	0	24	25	22	0	7	193	42	0	1	94	25	0	453
4:45 PM	4	12	1	0	44	29	25	1	11	154	31	1	0	81	13	0	407
5:00 PM	8	16	1	0	55	32	30	0	13	190	32	0	0	103	16	0	496
5:15 PM	7	15	1	0	42	38	28	0	4	212	48	0	0	94	13	1	503
5:30 PM	6	6	0	0	42	45	26	0	9	248	42	0	1	100	7	0	532
5:45 PM	8	8	1	0	46	19	30	0	7	208	46	0	1	77	11	0	462
6:00 PM	8	12	3	0	49	31	26	0	6	233	41	0	2	80	14	1	506
6:15 PM	9	5	2	0	53	22	16	0	10	202	42	0	0	92	13	0	466
6:30 PM	8	6	1	0	24	19	18	0	8	217	38	0	2	104	12	0	457
6:45 PM	7	7	1	0	31	14	19	0	7	172	31	0	0	55	4	0	348
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	101	109	13	0	484	318	282	2	98	2416	461	2	8	1046	154	2	5496
APPROACH %'s :	45.29%	48.88%	5.83%	0.00%	44.57%	29.28%	25.97%	0.18%	3.29%	81.16%	15.49%	0.07%	0.66%	86.45%	12.73%	0.17%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	29	41	5	0	179	133	110	0	26	901	177	0	4	351	45	2	2003
PEAK HR FACTOR :	0.906	0.683	0.417	0.000	0.913	0.739	0.917	0.000	0.722	0.908	0.922	0.000	0.500	0.878	0.804	0.500	0.941
	0.815				0.934				0.923				0.931				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-012
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Drydock Ave/Pappas Way				Drydock Ave/Pappas Way				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	6
6:15 AM	2	0	0	0	0	0	2	0	1	0	2	0	0	2	0	0	9
6:30 AM	4	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	7
6:45 AM	2	0	0	0	0	0	1	0	1	3	0	0	0	3	0	0	10
7:00 AM	0	0	0	0	0	0	3	0	0	0	2	0	0	5	1	0	11
7:15 AM	2	0	0	0	0	0	3	0	0	3	0	0	0	2	0	0	10
7:30 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	4	0	0	9
7:45 AM	1	0	0	0	0	0	2	0	0	5	1	0	0	2	1	0	12
8:00 AM	0	0	0	0	0	0	2	0	0	3	1	0	0	5	0	0	11
8:15 AM	0	0	0	0	0	0	1	0	0	5	0	0	0	5	0	0	11
8:30 AM	1	0	1	0	0	0	4	0	0	3	0	0	0	5	0	0	14
8:45 AM	1	0	0	0	0	1	1	0	0	2	0	0	0	3	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	1	1	0	0	1	22	0	2	27	8	0	0	40	2	0	118
APPROACH %'s :	87.50%	6.25%	6.25%	0.00%	0.00%	4.35%	95.65%	0.00%	5.41%	72.97%	21.62%	0.00%	0.00%	95.24%	4.76%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	2	0	1	0	0	0	9	0	0	16	2	0	0	17	1	0	48
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.000	0.563	0.000	0.000	0.800	0.500	0.000	0.000	0.850	0.250	0.000	0.857
		0.375				0.563				0.750				0.900			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	3	0	0	7
4:15 PM	0	0	0	0	0	0	1	0	2	4	0	0	0	2	0	0	9
4:30 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	1	0	1	4	0	0	0	1	0	0	7
5:00 PM	0	0	0	0	0	0	1	0	1	1	0	0	0	4	0	0	7
5:15 PM	0	0	1	0	0	0	1	0	0	1	0	0	0	2	0	0	5
5:30 PM	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	6
5:45 PM	0	0	0	0	0	0	1	0	1	6	0	0	0	3	0	0	11
6:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	1	4	0	0	9
6:15 PM	0	0	1	0	0	0	1	0	1	3	1	0	0	3	0	0	10
6:30 PM	0	0	0	0	0	0	1	0	0	3	1	0	1	1	0	0	7
6:45 PM	0	0	1	0	0	0	1	0	0	3	2	0	0	3	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	4	0	0	0	12	0	6	35	4	0	2	28	0	0	91
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	13.33%	77.78%	8.89%	0.00%	6.67%	93.33%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	4	0	1	12	0	0	1	11	0	0	31
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	1.000	0.000	0.250	0.500	0.000	0.000	0.250	0.688	0.000	0.000	0.705
		0.500				1.000				0.464				0.600			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-012
Date: 12/16/2025

Data - HT

AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
NS/EW Streets:	Drydock Ave/Pappas Way				Drydock Ave/Pappas Way				Summer St				Summer St				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	1	0	0	1	2	0	2	7	1	0	0	3	1	0	19
6:15 AM	0	2	0	0	0	2	2	0	3	12	0	0	0	1	2	0	24
6:30 AM	4	2	0	0	0	1	5	0	0	5	2	0	0	0	1	0	20
6:45 AM	4	2	0	0	2	0	5	0	3	6	1	0	0	8	1	0	32
7:00 AM	6	2	0	0	0	2	5	0	0	6	3	0	0	6	2	0	32
7:15 AM	4	0	0	0	0	2	4	0	2	10	2	0	0	2	1	0	27
7:30 AM	1	2	0	0	1	0	7	0	4	7	1	0	1	3	1	0	28
7:45 AM	0	1	1	0	0	3	3	0	1	10	1	0	0	7	1	0	28
8:00 AM	2	0	0	1	0	0	4	0	1	8	1	0	0	2	0	0	19
8:15 AM	2	1	0	0	0	2	1	0	0	11	4	0	0	5	0	0	26
8:30 AM	2	1	0	0	1	1	2	0	1	12	2	0	0	17	0	0	39
8:45 AM	0	2	0	0	1	0	2	0	1	5	1	0	0	14	1	0	27
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	26	15	2	1	5	14	42	0	18	99	19	0	1	68	11	0	321
APPROACH %'s :	59.09%	34.09%	4.55%	2.27%	8.20%	22.95%	68.85%	0.00%	13.24%	72.79%	13.97%	0.00%	1.25%	85.00%	13.75%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	6	3	1	1	1	6	10	0	3	41	8	0	0	31	1	0	112
PEAK HR FACTOR :	0.750	0.750	0.250	0.250	0.250	0.500	0.625	0.000	0.750	0.854	0.500	0.000	0.000	0.456	0.250	0.000	0.718
		0.917				0.708				0.867				0.471			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	1	0	0	0	1	3	0	0	0	5	1	0	12
4:15 PM	1	1	0	0	1	2	0	0	1	1	1	0	0	8	0	0	16
4:30 PM	0	0	0	0	1	0	1	0	0	5	0	0	0	0	1	0	8
4:45 PM	0	2	0	0	0	0	0	0	1	1	2	0	0	2	1	0	9
5:00 PM	0	0	0	0	0	0	0	0	1	4	0	0	0	1	0	0	6
5:15 PM	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	3	0	0	1	1	0	0	0	0	0	5
5:45 PM	1	0	0	0	0	4	1	0	1	2	1	0	0	0	0	0	10
6:00 PM	1	1	0	0	0	0	1	0	0	4	0	0	0	0	0	0	7
6:15 PM	1	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	8
6:30 PM	0	0	0	0	0	0	3	0	0	4	1	0	1	1	0	0	10
6:45 PM	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	4	0	0	4	6	11	0	5	35	8	0	1	17	3	0	99
APPROACH %'s :	55.56%	44.44%	0.00%	0.00%	19.05%	28.57%	52.38%	0.00%	10.42%	72.92%	16.67%	0.00%	4.76%	80.95%	14.29%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	2	1	0	0	0	4	6	0	1	9	3	0	0	0	0	0	26
PEAK HR FACTOR :	0.500	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.250	0.563	0.750	0.000	0.000	0.000	0.000	0.000	0.650
		0.375				0.500				0.813							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-012
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Drydock Ave/Pappas Way				Drydock Ave/Pappas Way				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6:30 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3
6:45 AM	0	1	0	0	0	0	0	0	2	0	0	0	0	2	0	0	5
7:00 AM	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	3	1	0	5
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
7:45 AM	1	2	0	0	1	0	0	0	2	0	0	0	0	3	0	0	9
8:00 AM	0	1	0	0	0	0	1	0	3	0	0	0	0	2	0	0	7
8:15 AM	1	1	0	0	0	0	0	0	2	0	0	0	0	7	0	0	11
8:30 AM	1	0	0	0	0	1	0	0	2	0	1	0	0	2	1	0	8
8:45 AM	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	5	0	0	2	3	2	0	14	2	1	0	0	24	4	0	61
APPROACH %'s :	44.44%	55.56%	0.00%	0.00%	28.57%	42.86%	28.57%	0.00%	82.35%	11.76%	5.88%	0.00%	0.00%	85.71%	14.29%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	3	4	0	0	1	1	1	0	9	0	1	0	0	14	1	0	35
PEAK HR FACTOR :	0.750	0.500	0.000	0.000	0.250	0.250	0.250	0.000	0.750	0.000	0.250	0.000	0.000	0.500	0.250	0.000	0.795
	0.583				0.750				0.833				0.536				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	1	0	1	3	0	0	0	0	0	0	6
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	4
4:45 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4
5:00 PM	0	2	0	0	0	1	1	0	0	0	3	0	0	0	0	0	7
5:15 PM	0	0	0	0	0	0	2	0	0	3	0	0	0	0	0	0	5
5:30 PM	0	1	0	0	1	1	2	0	0	4	0	0	0	0	0	0	9
5:45 PM	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	4
6:00 PM	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	0	6
6:15 PM	0	0	0	0	1	1	1	0	2	2	3	0	0	0	0	0	10
6:30 PM	0	1	0	0	1	0	0	0	0	1	1	0	0	1	0	0	5
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	0	0	5	5	11	0	3	23	8	0	0	1	2	0	62
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	23.81%	23.81%	52.38%	0.00%	8.82%	67.65%	23.53%	0.00%	0.00%	33.33%	66.67%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	1	0	0	2	2	6	0	0	12	1	0	0	0	0	0	24
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.500	0.500	0.750	0.000	0.000	0.600	0.250	0.000	0.000	0.000	0.000	0.000	0.667
	0.250				0.625				0.650								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Drydock Ave/Pappas Way & Summer St
City: Boston

Project ID: 25-430193-012
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Drydock Ave/Pappas Way		Drydock Ave/Pappas Way		Summer St		Summer St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	4	4	0	1	1	1	0	0	11
6:15 AM	8	0	1	4	1	1	0	0	15
6:30 AM	8	7	4	3	1	0	2	1	26
6:45 AM	5	7	3	2	5	2	4	0	28
7:00 AM	4	8	5	5	4	0	3	0	29
7:15 AM	1	5	2	3	3	0	1	0	15
7:30 AM	6	10	1	7	1	5	5	0	35
7:45 AM	1	7	0	8	3	0	3	1	23
8:00 AM	4	21	1	4	5	0	1	1	37
8:15 AM	3	20	2	17	5	0	7	1	55
8:30 AM	6	23	2	9	9	0	3	0	52
8:45 AM	7	5	3	6	3	0	8	0	32
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	57	117	24	69	41	9	37	4	358
APPROACH %'s :	32.76%	67.24%	25.81%	74.19%	82.00%	18.00%	90.24%	9.76%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	14	71	5	38	22	0	14	3	167
PEAK HR FACTOR :	0.583	0.772	0.625	0.559	0.611		0.500	0.750	
	0.733		0.566		0.611		0.531		0.759

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	6	10	6	3	1	1	0	3	30
4:15 PM	5	7	8	1	0	1	1	3	26
4:30 PM	2	8	13	4	1	1	0	8	37
4:45 PM	7	3	7	0	2	1	2	2	24
5:00 PM	14	3	8	1	0	0	2	2	30
5:15 PM	13	1	17	3	1	3	1	3	42
5:30 PM	25	8	22	4	3	3	9	1	75
5:45 PM	9	4	15	0	3	0	0	0	31
6:00 PM	12	3	21	0	3	2	3	7	51
6:15 PM	4	9	11	1	1	1	1	3	31
6:30 PM	12	7	9	2	3	3	2	3	41
6:45 PM	16	1	1	2	1	2	2	1	26
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	125	64	138	21	19	18	23	36	444
APPROACH %'s :	66.14%	33.86%	86.79%	13.21%	51.35%	48.65%	38.98%	61.02%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	59	16	75	7	10	8	13	11	199
PEAK HR FACTOR :	0.590	0.500	0.852	0.438	0.833	0.667	0.361	0.393	
	0.568		0.788		0.750		0.600		0.663

Prepared by National Data & Surveying Services

Drydock Ave/Pappas Way & Summer St

Peak Hour Turning Movement Count

ID: 25-430193-012
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (Drydock Ave/Pappas Way)

AM	55	42	82	0	229	AM
NOON	0	0	0	0	0	NOON
PM	120	137	179	0	115	PM

EASTBOUND (Summer St)

AM	NOON	PM		
1055	0	513	⇦	
1	0	0	↰	0
66	0	28	↱	1
429	0	922	→	2
83	0	180	↳	0

WESTBOUND (Summer St)

	PM	NOON	AM
0	45	0	123
2	362	0	901
1	5	0	2
0	2	0	0
⇨	1110	0	514

NORTHBOUND (Drydock Ave/Pappas Way)

PM	322	0	31	42	7	PM
NOON	0	0	0	0	0	NOON
AM	128	1	98	40	3	AM

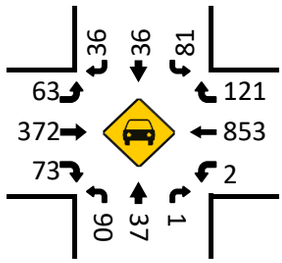
CONTROL

Signalized

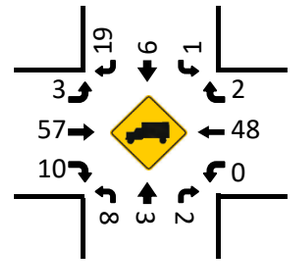
TEV	1926 AM	0 NOON	2060 PM
PHF	0.92		0.95

Turning movements: 1 1 0 0 | 0 2 1 0 | 0 0 1 0

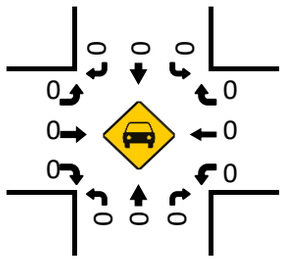
Cars (AM)



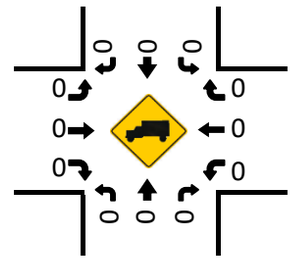
Total Trucks (AM)



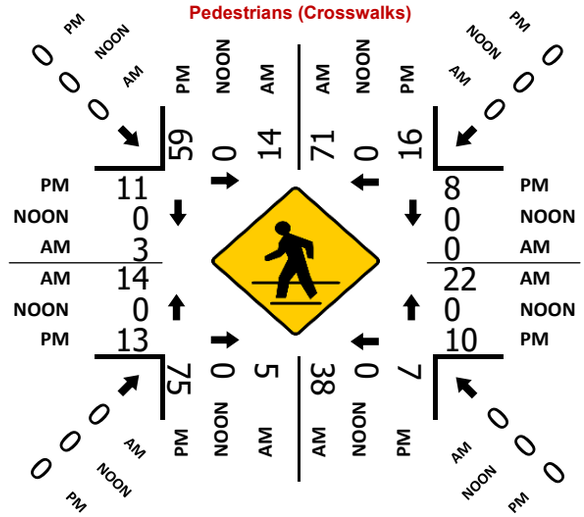
Cars (NOON)



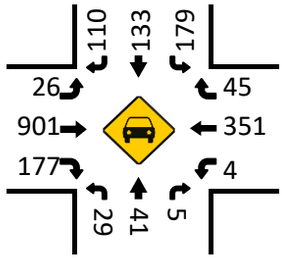
Total Trucks (NOON)



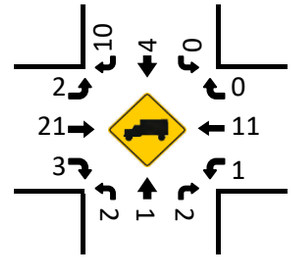
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-012
Location: Drydock Ave/Pappas Way & Summer St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Drydock Ave/Pappas Way Northbound						Drydock Ave/Pappas Way Southbound						Summer St Eastbound						Summer St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	6	10	1	0	1	17	5	9	10	0	8	24	12	56	15	0	0	83	3	96	29	0	2	128	252
6:15 AM	7	13	1	0	5	21	13	7	18	1	8	39	19	83	17	0	0	119	0	107	37	0	2	144	323
6:30 AM	18	14	0	0	7	32	13	6	20	0	15	39	8	76	13	0	3	97	2	151	40	0	1	193	361
6:45 AM	13	14	2	0	5	29	22	12	16	0	12	50	17	96	22	0	4	135	0	168	38	0	7	206	420
Total	44	51	4	0	18	99	53	34	64	1	43	152	56	311	67	0	7	434	5	522	144	0	12	671	1356
7:00 AM	18	10	0	0	10	28	17	8	22	0	12	47	4	77	23	0	3	104	0	183	30	0	4	213	392
7:15 AM	13	11	0	0	5	24	17	10	15	0	6	42	8	103	15	0	1	126	0	208	30	0	3	238	430
7:30 AM	18	16	0	0	8	34	17	8	23	0	16	48	15	66	21	1	5	103	3	195	25	0	6	223	408
7:45 AM	24	9	1	0	8	34	19	11	9	0	8	39	11	115	18	0	4	144	0	240	21	0	3	261	478
Total	73	46	1	0	31	120	70	37	69	0	42	176	38	361	77	1	13	477	3	826	106	0	16	935	1708
8:00 AM	27	8	0	1	5	36	19	8	12	0	25	39	20	99	28	0	2	147	0	224	27	0	5	251	473
8:15 AM	24	13	1	0	19	38	22	13	11	0	23	46	19	96	20	1	8	136	1	204	28	0	5	233	453
8:30 AM	23	10	1	0	11	34	22	10	23	0	29	55	16	119	17	0	3	152	1	233	47	0	9	281	522
8:45 AM	14	16	0	0	9	30	26	19	17	0	12	62	25	97	24	0	8	146	0	152	36	0	3	188	426
Total	88	47	2	1	44	138	89	50	63	0	89	202	80	411	89	1	21	581	2	813	138	0	22	953	1874
BREAK																									
4:00 PM	13	13	1	0	9	27	38	15	19	0	16	72	5	184	33	0	3	222	1	81	15	0	2	97	418
4:15 PM	13	3	0	0	9	16	38	31	25	1	12	95	15	214	36	1	4	266	0	103	12	0	1	115	492
4:30 PM	12	7	1	0	17	20	25	25	24	0	10	74	7	200	42	0	8	249	1	94	26	0	2	121	464
4:45 PM	4	14	1	0	7	19	44	29	26	1	10	100	13	159	33	1	4	206	0	84	14	0	3	98	423
Total	42	37	3	0	42	82	145	100	94	2	48	341	40	757	144	2	19	943	2	362	67	0	8	431	1797
5:00 PM	8	16	1	0	9	25	55	32	31	0	17	118	15	195	32	0	4	242	0	108	16	0	0	124	509
5:15 PM	7	15	2	0	20	24	42	38	30	0	14	110	4	215	49	0	4	268	0	96	13	1	4	110	512
5:30 PM	6	6	1	0	26	13	42	45	30	0	33	117	9	251	43	0	10	303	1	102	7	0	6	110	543
5:45 PM	9	8	1	0	15	18	46	23	32	0	13	101	9	216	47	0	0	272	1	80	11	0	3	92	483
Total	30	45	5	0	70	80	185	138	123	0	77	446	37	877	171	0	18	1085	2	386	47	1	13	436	2047
6:00 PM	9	13	3	0	21	25	49	31	28	0	15	108	6	240	41	0	10	287	3	84	14	1	5	102	522
6:15 PM	10	5	3	0	12	18	53	22	17	0	13	92	11	212	43	0	4	266	0	95	13	0	2	108	484
6:30 PM	8	6	1	0	11	15	24	19	22	0	19	65	8	224	40	0	5	272	4	106	12	0	6	122	474
6:45 PM	7	7	2	0	3	16	32	14	21	0	17	67	7	176	34	0	3	217	0	58	4	0	3	62	362
Total	34	31	9	0	47	74	158	86	88	0	64	332	32	852	158	0	22	1042	7	343	43	1	16	394	1842
Grand Total	311	257	24	1	252	593	700	445	501	3	363	1649	283	3569	706	4	100	4562	21	3252	545	2	87	3820	10624
Apprch %	52.4	43.3	4.0	0.2	42.5		42.4	27.0	30.4	0.2	22.0		6.2	78.2	15.5	0.1	2.2		0.5	85.1	14.3	0.1	2.3		
Total %	2.9	2.4	0.2	0.0	2.4	5.6	6.6	4.2	4.7	0.0	3.4	15.5	2.7	33.6	6.6	0.0	0.9	42.9	0.2	30.6	5.1	0.0	0.8	36.0	
Cars, PU, Vans	266	237	17	0		520	691	424	414	3		1532	252	3373	667	4		4296	17	3099	529	2		3647	9995
% Cars, PU, Vans	85.5	92.2	70.8	0.0		87.7	98.7	95.3	82.6	100.0		92.9	89.0	94.5	94.5	100.0		94.2	81.0	95.3	97.1	100.0		95.5	94.1
Buses	14	1	5	0		20	0	1	34	0		35	8	62	12	0		82	2	68	2	0		72	209
%Buses	4.5	0.4	20.8	0.0		3.4	0.0	0.2	6.8	0.0		2.1	2.8	1.7	1.7	0.0		1.8	9.5	2.1	0.4	0.0		1.9	2.0
Heavy Trucks	31	19	2	1		53	9	20	53	0		82	23	134	27	0		184	2	85	14	0		101	420
%Heavy Trucks	10.0	7.4	8.3	100.0		8.9	1.3	4.5	10.6	0.0		5.0	8.1	3.8	3.8	0.0		4.0	9.5	2.6	2.6	0.0		2.6	4.0

Project ID: 25-430193-012
Location: Drydock Ave/Pappas Way & Summer St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Drydock Ave/Pappas Way Northbound					Drydock Ave/Pappas Way Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	24	9	1	0	34	19	11	9	0	39	11	115	18	0	144	0	240	21	0	261	478
8:00 AM	27	8	0	1	36	19	8	12	0	39	20	99	28	0	147	0	224	27	0	251	473
8:15 AM	24	13	1	0	38	22	13	11	0	46	19	96	20	1	136	1	204	28	0	233	453
8:30 AM	23	10	1	0	34	22	10	23	0	55	16	119	17	0	152	1	233	47	0	281	522
Total Volume	98	40	3	1	142	82	42	55	0	179	66	429	83	1	579	2	901	123	0	1026	1926
% App. Total	69.0	28.2	2.1	0.7	100	45.8	23.5	30.7	0.0	100	11.4	74.1	14.3	0.2	100	0.2	87.8	12.0	0.0	100	
PHF					0.934					0.814					0.952					0.913	0.922
Cars, PU, Vans	90	37	1	0	128	81	36	36	0	153	63	372	73	1	509	2	853	121	0	976	1766
% Cars, PU, Vans	91.8	92.5	33.3	0.0	90.1	98.8	85.7	65.5	0.0	85.5	95.5	86.7	88.0	100.0	87.9	100.0	94.7	98.4	0.0	95.1	91.7
Buses	2	0	1	0	3	0	0	9	0	9	0	16	2	0	18	0	17	1	0	18	48
%Buses	2.0	0.0	33.3	0.0	2.1	0.0	0.0	16.4	0.0	5.0	0.0	3.7	2.4	0.0	3.1	0.0	1.9	0.8	0.0	1.8	2.5
Heavy Trucks	6	3	1	1	11	1	6	10	0	17	3	41	8	0	52	0	31	1	0	32	112
%Heavy Trucks	6.1	7.5	33.3	100.0	7.7	1.2	14.3	18.2	0.0	9.5	4.5	9.6	9.6	0.0	9.0	0.0	3.4	0.8	0.0	3.1	5.8

PM

	Drydock Ave/Pappas Way Northbound					Drydock Ave/Pappas Way Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	7	15	2	0	24	42	38	30	0	110	4	215	49	0	268	0	96	13	1	110	512
5:30 PM	6	6	1	0	13	42	45	30	0	117	9	251	43	0	303	1	102	7	0	110	543
5:45 PM	9	8	1	0	18	46	23	32	0	101	9	216	47	0	272	1	80	11	0	92	483
6:00 PM	9	13	3	0	25	49	31	28	0	108	6	240	41	0	287	3	84	14	1	102	522
Total Volume	31	42	7	0	80	179	137	120	0	436	28	922	180	0	1130	5	362	45	2	414	2060
% App. Total	38.8	52.5	8.8	0.0	100	41.1	31.4	27.5	0.0	100	2.5	81.6	15.9	0.0	100	1.2	87.4	10.9	0.5	100	
PHF					0.800					0.932					0.932					0.941	0.948
Cars, PU, Vans	29	41	5	0	75	179	133	110	0	422	26	901	177	0	1104	4	351	45	2	402	2003
% Cars, PU, Vans	93.5	97.6	71.4	0.0	93.8	100.0	97.1	91.7	0.0	96.8	92.9	97.7	98.3	0.0	97.7	80.0	97.0	100.0	100.0	97.1	97.2
Buses	0	0	2	0	2	0	0	4	0	4	1	12	0	0	13	1	11	0	0	12	31
%Buses	0.0	0.0	28.6	0.0	2.5	0.0	0.0	3.3	0.0	0.9	3.6	1.3	0.0	0.0	1.2	20.0	3.0	0.0	0.0	2.9	1.5
Heavy Trucks	2	1	0	0	3	0	4	6	0	10	1	9	3	0	13	0	0	0	0	0	26
%Heavy Trucks	6.5	2.4	0.0	0.0	3.8	0.0	2.9	5.0	0.0	2.3	3.6	1.0	1.7	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-013
Date: 12/16/2025

Data - Total

NS/EW Streets:	Fargo St				Fargo St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	2	0	0	0	0	0	0	81	4	1	3	111	0	0	202
6:15 AM	0	0	5	0	0	0	0	0	0	123	12	0	7	123	0	0	270
6:30 AM	7	0	12	0	0	0	0	0	0	87	6	0	12	179	0	0	303
6:45 AM	0	0	6	0	0	0	0	0	0	118	8	0	9	185	0	0	326
7:00 AM	0	0	2	0	0	0	0	0	0	109	13	0	9	217	0	0	350
7:15 AM	2	0	3	0	0	0	0	0	0	116	9	0	6	228	0	0	364
7:30 AM	6	0	11	0	0	0	0	0	0	100	11	0	6	233	0	0	367
7:45 AM	2	0	5	0	0	0	0	0	0	140	7	0	8	261	0	0	423
8:00 AM	5	0	13	0	0	0	0	0	0	125	21	0	3	254	0	0	421
8:15 AM	5	0	10	0	0	0	0	0	0	127	9	0	9	241	0	0	401
8:30 AM	4	0	7	0	0	0	0	0	0	147	24	0	9	261	0	0	452
8:45 AM	3	0	6	0	0	0	0	0	0	138	23	0	4	186	0	1	361
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	34	0	82	0	0	0	0	0	0	1411	147	1	85	2479	0	1	4240
APPROACH %'s :	29.31%	0.00%	70.69%	0.00%					0.00%	90.51%	9.43%	0.06%	3.31%	96.65%	0.00%	0.04%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	16	0	35	0	0	0	0	0	0	539	61	0	29	1017	0	0	1697
PEAK HR FACTOR :	0.800	0.000	0.673	0.000	0.000	0.000	0.000	0.000	0.000	0.917	0.635	0.000	0.806	0.974	0.000	0.000	0.939
	0.708								0.877				0.969				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	0	2	0	0	0	0	0	0	225	7	0	2	113	0	0	352
4:15 PM	3	0	11	0	0	0	0	0	0	254	7	0	10	130	0	0	415
4:30 PM	6	0	13	0	0	0	0	0	0	232	1	0	2	127	0	0	381
4:45 PM	2	0	6	1	0	0	0	0	0	210	7	0	7	110	0	0	343
5:00 PM	2	0	5	0	0	0	0	0	0	227	5	0	9	139	0	0	387
5:15 PM	2	0	6	0	0	0	0	0	0	275	4	0	4	126	0	1	418
5:30 PM	4	0	6	0	0	0	0	0	0	284	7	1	5	135	0	0	442
5:45 PM	1	0	6	0	0	0	0	0	0	270	9	0	5	115	0	1	407
6:00 PM	0	0	4	0	0	0	0	0	0	277	3	0	4	116	0	0	404
6:15 PM	0	0	7	0	0	0	0	0	0	263	5	0	4	119	0	0	398
6:30 PM	2	0	5	0	0	0	0	0	0	263	3	0	3	132	0	0	408
6:45 PM	2	0	5	0	0	0	0	0	0	216	6	0	6	81	0	0	316
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	0	76	1	0	0	0	0	0	2996	64	1	61	1443	0	2	4671
APPROACH %'s :	25.96%	0.00%	73.08%	0.96%					0.00%	97.88%	2.09%	0.03%	4.05%	95.82%	0.00%	0.13%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	7	0	22	0	0	0	0	0	0	1106	23	1	18	492	0	2	1671
PEAK HR FACTOR :	0.438	0.000	0.917	0.000	0.000	0.000	0.000	0.000	0.000	0.974	0.639	0.250	0.900	0.911	0.000	0.500	0.945
	0.725								0.967				0.914				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-013
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Fargo St				Fargo St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	2	0	0	0	0	0	0	69	4	1	3	101	0	0	180
6:15 AM	0	0	3	0	0	0	0	0	0	107	12	0	6	115	0	0	243
6:30 AM	7	0	10	0	0	0	0	0	0	78	5	0	9	167	0	0	276
6:45 AM	0	0	5	0	0	0	0	0	0	109	7	0	8	163	0	0	292
7:00 AM	0	0	2	0	0	0	0	0	0	96	12	0	8	193	0	0	311
7:15 AM	1	0	3	0	0	0	0	0	0	101	7	0	4	213	0	0	329
7:30 AM	5	0	9	0	0	0	0	0	0	86	9	0	4	218	0	0	331
7:45 AM	2	0	4	0	0	0	0	0	0	124	6	0	8	246	0	0	390
8:00 AM	5	0	9	0	0	0	0	0	0	115	17	0	2	240	0	0	388
8:15 AM	4	0	5	0	0	0	0	0	0	112	9	0	8	228	0	0	366
8:30 AM	2	0	7	0	0	0	0	0	0	129	21	0	6	233	0	0	398
8:45 AM	0	0	6	0	0	0	0	0	0	128	21	0	4	165	0	1	325
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	26	0	65	0	0	0	0	0	0	1254	130	1	70	2282	0	1	3829
APPROACH %'s :	28.57%	0.00%	71.43%	0.00%					0.00%	90.54%	9.39%	0.07%	2.97%	96.98%	0.00%	0.04%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	13	0	25	0	0	0	0	0	0	480	53	0	24	947	0	0	1542
PEAK HR FACTOR :	0.650	0.000	0.694	0.000	0.000	0.000	0.000	0.000	0.000	0.930	0.631	0.000	0.750	0.962	0.000	0.000	0.969
	0.679								0.888				0.956				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	0	2	0	0	0	0	0	0	218	7	0	2	103	0	0	335
4:15 PM	3	0	11	0	0	0	0	0	0	245	6	0	8	121	0	0	394
4:30 PM	5	0	13	0	0	0	0	0	0	225	1	0	2	124	0	0	370
4:45 PM	2	0	6	1	0	0	0	0	0	201	7	0	7	106	0	0	330
5:00 PM	2	0	5	0	0	0	0	0	0	220	4	0	9	133	0	0	373
5:15 PM	1	0	6	0	0	0	0	0	0	271	4	0	4	122	0	1	409
5:30 PM	4	0	6	0	0	0	0	0	0	279	6	1	5	129	0	0	430
5:45 PM	1	0	6	0	0	0	0	0	0	260	7	0	5	109	0	1	389
6:00 PM	0	0	4	0	0	0	0	0	0	270	3	0	4	110	0	0	391
6:15 PM	0	0	6	0	0	0	0	0	0	252	5	0	4	113	0	0	380
6:30 PM	2	0	4	0	0	0	0	0	0	255	2	0	3	126	0	0	392
6:45 PM	2	0	5	0	0	0	0	0	0	209	5	0	5	77	0	0	303
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	0	74	1	0	0	0	0	0	2905	57	1	58	1373	0	2	4496
APPROACH %'s :	25.00%	0.00%	74.00%	1.00%					0.00%	98.04%	1.92%	0.03%	4.05%	95.81%	0.00%	0.14%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	6	0	22	0	0	0	0	0	0	1080	20	1	18	470	0	2	1619
PEAK HR FACTOR :	0.375	0.000	0.917	0.000	0.000	0.000	0.000	0.000	0.000	0.968	0.714	0.250	0.900	0.911	0.000	0.500	0.941
	0.700								0.962				0.914				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-013
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Fargo St				Fargo St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	6
6:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	6	0	0	9
6:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	6	0	0	8
6:45 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	6	0	0	10
7:00 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	8	0	0	11
7:15 AM	0	0	0	0	0	0	0	0	0	3	2	0	0	7	0	0	12
7:30 AM	0	0	0	0	0	0	0	0	0	4	1	0	0	6	0	0	11
7:45 AM	0	0	0	0	0	0	0	0	0	5	1	0	0	5	0	0	11
8:00 AM	0	0	0	0	0	0	0	0	0	4	2	0	0	7	0	0	13
8:15 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11
8:30 AM	0	0	0	0	0	0	0	0	0	3	2	0	0	10	0	0	15
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	37	11	0	0	76	0	0	124
APPROACH %'s :									0.00%	77.08%	22.92%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	17	5	0	0	28	0	0	50
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.625	0.000	0.000	0.700	0.000	0.000	0.833
										0.917				0.700			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7
4:15 PM	0	0	0	0	0	0	0	0	0	6	1	0	0	2	0	0	9
4:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0	0	7
5:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	5	0	0	8
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	6	1	0	0	4	0	0	11
6:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7
6:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	10
6:30 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	2	0	0	7
6:45 PM	0	0	0	0	0	0	0	0	0	5	1	0	0	4	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	45	6	0	0	40	0	0	91
APPROACH %'s :									0.00%	88.24%	11.76%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	13	2	0	0	14	0	0	29
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.542	0.500	0.000	0.000	0.875	0.000	0.000	0.659
										0.536				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-013
Date: 12/16/2025

Data - HT

NS/EW Streets:	Fargo St				Fargo St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	10	0	0	0	6	0	0	16
6:15 AM	0	0	2	0	0	0	0	0	0	13	0	0	1	2	0	0	18
6:30 AM	0	0	2	0	0	0	0	0	0	8	0	0	3	6	0	0	19
6:45 AM	0	0	1	0	0	0	0	0	0	6	0	0	1	16	0	0	24
7:00 AM	0	0	0	0	0	0	0	0	0	11	0	0	1	16	0	0	28
7:15 AM	1	0	0	0	0	0	0	0	0	12	0	0	2	8	0	0	23
7:30 AM	1	0	2	0	0	0	0	0	0	10	1	0	2	9	0	0	25
7:45 AM	0	0	1	0	0	0	0	0	0	11	0	0	0	10	0	0	22
8:00 AM	0	0	4	0	0	0	0	0	0	6	2	0	1	7	0	0	20
8:15 AM	1	0	5	0	0	0	0	0	0	10	0	0	1	7	0	0	24
8:30 AM	2	0	0	0	0	0	0	0	0	15	1	0	3	18	0	0	39
8:45 AM	3	0	0	0	0	0	0	0	0	8	2	0	0	16	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	0	17	0	0	0	0	0	0	120	6	0	15	121	0	0	287
APPROACH %'s :	32.00%	0.00%	68.00%	0.00%					0.00%	95.24%	4.76%	0.00%	11.03%	88.97%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	3	0	10	0	0	0	0	0	0	42	3	0	5	42	0	0	105
PEAK HR FACTOR :	0.375	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.375	0.000	0.417	0.583	0.000	0.000	0.673
	0.542				0.703								0.560				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	10
4:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	2	7	0	0	12
4:30 PM	1	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	7
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	6
5:15 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	2	0	0	7
6:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
6:15 PM	0	0	1	0	0	0	0	0	0	6	0	0	0	1	0	0	8
6:30 PM	0	0	1	0	0	0	0	0	0	4	0	0	0	4	0	0	9
6:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	2	0	0	0	0	0	0	46	1	0	3	30	0	0	84
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%					0.00%	97.87%	2.13%	0.00%	9.09%	90.91%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	13	1	0	0	8	0	0	23
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.250	0.000	0.000	0.667	0.000	0.000	0.821
	0.250								0.700				0.667				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston
Control: 1-Way Stop(NB)

Project ID: 25-430193-013
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Fargo St				Fargo St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	4
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	4	0	0	6
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0	0	6
8:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	7	0	0	9
8:30 AM	0	0	1	0	0	0	0	0	0	3	0	0	1	3	0	0	8
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	5	0	0	0	0	0	0	12	0	0	2	28	0	0	47
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	100.00%	0.00%	0.00%	6.67%	93.33%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	3	0	0	0	0	0	0	8	0	0	2	16	0	0	29
PEAK HR FACTOR :	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.500	0.571	0.000	0.000	0.806
	0.750				0.000				0.667				0.643				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	1	0	0	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
5:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	1	0	0	5
6:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 PM	0	0	0	0	0	0	0	0	0	7	0	0	1	0	0	0	8
6:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	33	0	0	6	7	0	0	46
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	46.15%	53.85%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	13	0	0	1	5	0	0	19
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.000	0.000	0.250	0.625	0.000	0.000	0.792
									0.813				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fargo St & Summer St
City: Boston

Project ID: 25-430193-013
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Fargo St		Fargo St		Summer St		Summer St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	1	0	0	0	0	1
6:15 AM	0	0	1	3	0	0	1	0	5
6:30 AM	0	0	3	2	0	0	0	0	5
6:45 AM	0	0	2	4	0	0	0	0	6
7:00 AM	0	0	2	5	0	0	0	0	7
7:15 AM	0	0	0	5	0	0	0	0	5
7:30 AM	0	0	4	9	1	0	0	0	14
7:45 AM	0	0	0	12	0	0	0	0	12
8:00 AM	0	0	3	9	0	0	0	0	12
8:15 AM	0	0	4	23	1	0	0	0	28
8:30 AM	0	0	2	14	0	0	0	0	16
8:45 AM	0	0	4	12	1	0	0	0	17
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	25	99	3	0	1	0	128
APPROACH %'s :			20.16%	79.84%	100.00%	0.00%	100.00%	0.00%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	0	0	9	58	1	0	0	0	68
PEAK HR FACTOR :			0.563	0.630	0.250				0.607
			0.620		0.250				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	5	4	0	0	0	0	9
4:15 PM	0	0	8	3	0	1	0	0	12
4:30 PM	0	0	11	7	0	0	0	0	18
4:45 PM	0	0	9	1	0	1	0	0	11
5:00 PM	0	0	11	6	0	1	0	1	19
5:15 PM	0	0	21	2	0	0	0	0	23
5:30 PM	0	0	30	2	0	0	0	0	32
5:45 PM	0	0	13	0	0	2	0	0	15
6:00 PM	0	0	15	1	0	0	0	0	16
6:15 PM	0	0	12	5	0	0	0	1	18
6:30 PM	0	0	11	0	0	1	0	0	12
6:45 PM	0	0	3	2	0	0	0	0	5
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	149	33	0	6	0	2	190
APPROACH %'s :			81.87%	18.13%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	**05:15 PM - 06:15 PM**								TOTAL
PEAK HR VOL :	0	0	79	5	0	2	0	0	86
PEAK HR FACTOR :			0.658	0.625		0.250			0.672
			0.656		0.250				

Prepared by National Data & Surveying Services

Fargo St & Summer St

Peak Hour Turning Movement Count

ID: 25-430193-013
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (Fargo St)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Summer St)

AM	NOON	PM		
1033	0	500	⇦	
0	0	1	↰	0
0	0	0	↱	0
539	0	1106	→	2
61	0	23	↳	0
AM	NOON	PM		

WESTBOUND (Summer St)

PM	NOON	AM		
0	0	0	↰	0
492	0	1017	←	2
18	0	29	↙	0
2	0	0	↲	0
1130	0	574	⇨	
PM	NOON	AM		

NORTHBOUND (Fargo St)

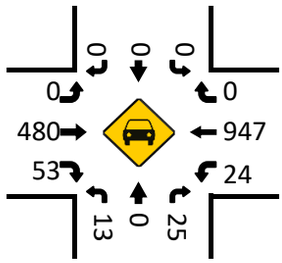
PM	41	0	7	0	22	PM
NOON	0	0	0	0	0	NOON
AM	90	0	16	0	35	AM

CONTROL

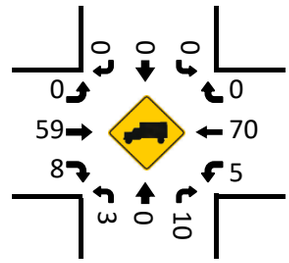
1-Way Stop(NB)

TEV	1697 AM	0 NOON	1671 PM
PHF	0.94		0.95

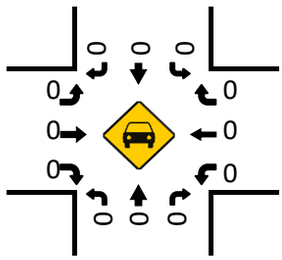
Cars (AM)



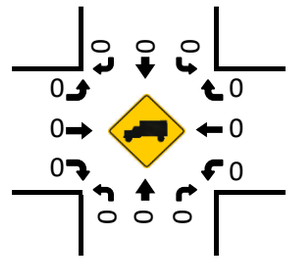
Total Trucks (AM)



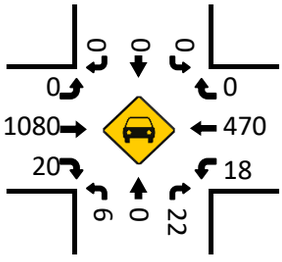
Cars (NOON)



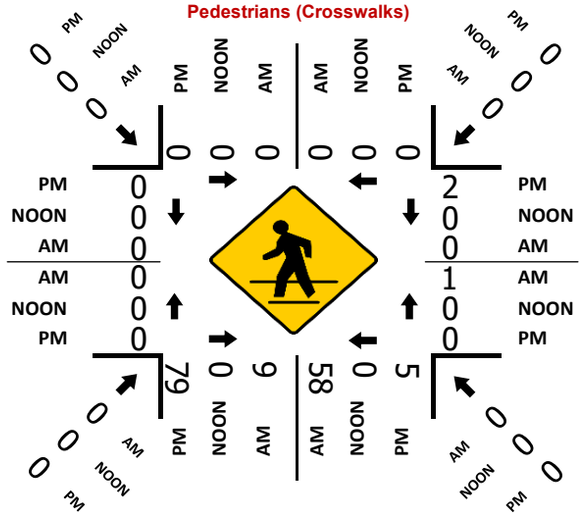
Total Trucks (NOON)



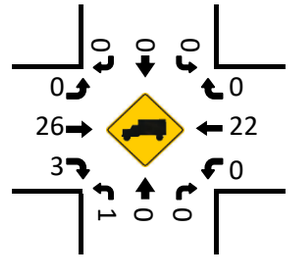
Cars (PM)



Pedestrians (Crosswalks)



Total Trucks (PM)



Project ID: 25-430193-013
Location: Fargo St & Summer St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Fargo St Northbound						Fargo St Southbound						Summer St Eastbound						Summer St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	2	0	1	2	0	0	0	0	0	0	0	81	4	1	0	86	3	111	0	0	0	114	202
6:15 AM	0	0	5	0	4	5	0	0	0	0	0	0	0	123	12	0	1	135	7	123	0	0	0	130	270
6:30 AM	7	0	12	0	5	19	0	0	0	0	0	0	0	87	6	0	0	93	12	179	0	0	0	191	303
6:45 AM	0	0	6	0	6	6	0	0	0	0	0	0	0	118	8	0	0	126	9	185	0	0	0	194	326
Total	7	0	25	0	16	32	0	0	0	0	0	0	0	409	30	1	1	440	31	598	0	0	0	629	1101
7:00 AM	0	0	2	0	7	2	0	0	0	0	0	0	0	109	13	0	0	122	9	217	0	0	0	226	350
7:15 AM	2	0	3	0	5	5	0	0	0	0	0	0	0	116	9	0	0	125	6	228	0	0	0	234	364
7:30 AM	6	0	11	0	13	17	0	0	0	0	0	0	0	100	11	0	0	111	6	233	0	0	1	239	367
7:45 AM	2	0	5	0	12	7	0	0	0	0	0	0	0	140	7	0	0	147	8	261	0	0	0	269	423
Total	10	0	21	0	37	31	0	0	0	0	0	0	0	465	40	0	0	505	29	939	0	0	1	968	1504
8:00 AM	5	0	13	0	12	18	0	0	0	0	0	0	0	125	21	0	0	146	3	254	0	0	0	257	421
8:15 AM	5	0	10	0	27	15	0	0	0	0	0	0	0	127	9	0	0	136	9	241	0	0	1	250	401
8:30 AM	4	0	7	0	16	11	0	0	0	0	0	0	0	147	24	0	0	171	9	261	0	0	0	270	452
8:45 AM	3	0	6	0	16	9	0	0	0	0	0	0	0	138	23	0	0	161	4	186	0	1	1	191	361
Total	17	0	36	0	71	53	0	0	0	0	0	0	0	537	77	0	0	614	25	942	0	1	2	968	1635
BREAK																									
4:00 PM	3	0	2	0	9	5	0	0	0	0	0	0	0	225	7	0	0	232	2	113	0	0	0	115	352
4:15 PM	3	0	11	0	11	14	0	0	0	0	0	0	0	254	7	0	0	261	10	130	0	0	1	140	415
4:30 PM	6	0	13	0	18	19	0	0	0	0	0	0	0	232	1	0	0	233	2	127	0	0	0	129	381
4:45 PM	2	0	6	1	10	9	0	0	0	0	0	0	0	210	7	0	0	217	7	110	0	0	1	117	343
Total	14	0	32	1	48	47	0	0	0	0	0	0	0	921	22	0	0	943	21	480	0	0	2	501	1491
5:00 PM	2	0	5	0	17	7	0	0	0	0	0	0	0	227	5	0	1	232	9	139	0	0	1	148	387
5:15 PM	2	0	6	0	23	8	0	0	0	0	0	0	0	275	4	0	0	279	4	126	0	1	0	131	418
5:30 PM	4	0	6	0	32	10	0	0	0	0	0	0	0	284	7	1	0	292	5	135	0	0	0	140	442
5:45 PM	1	0	6	0	13	7	0	0	0	0	0	0	0	270	9	0	0	279	5	115	0	1	2	121	407
Total	9	0	23	0	85	32	0	0	0	0	0	0	0	1056	25	1	1	1082	23	515	0	2	3	540	1654
6:00 PM	0	0	4	0	16	4	0	0	0	0	0	0	0	277	3	0	0	280	4	116	0	0	0	120	404
6:15 PM	0	0	7	0	17	7	0	0	0	0	0	0	0	263	5	0	1	268	4	119	0	0	0	123	398
6:30 PM	2	0	5	0	11	7	0	0	0	0	0	0	0	263	3	0	0	266	3	132	0	0	1	135	408
6:45 PM	2	0	5	0	5	7	0	0	0	0	0	0	0	216	6	0	0	222	6	81	0	0	0	87	316
Total	4	0	21	0	49	25	0	0	0	0	0	0	0	1019	17	0	1	1036	17	448	0	0	1	465	1526
Grand Total	61	0	158	1	306	220	0	0	0	0	0	0	0	4407	211	2	3	4620	146	3922	0	3	9	4071	8911
Apprch %	27.7	0.0	71.8	0.5	139.1		0.0	0.0	0.0	0.0	0.0		0.0	95.4	4.6	0.0	0.1		3.6	96.3	0.0	0.1	0.2		
Total %	0.7	0.0	1.8	0.0	3.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.5	2.4	0.0	0.0	51.8	1.6	44.0	0.0	0.0	0.1	45.7	
Cars, PU, Vans	51	0	139	1		191	0	0	0	0		0	0	4159	187	2		4348	128	3655	0	3		3786	8325
% Cars, PU, Vans	83.6	0.0	88.0	100.0		86.8	0.0	0.0	0.0	0.0		0.0	0.0	94.4	88.6	100.0		94.1	87.7	93.2	0.0	100.0		93.0	93.4
Buses	0	0	0	0		0	0	0	0	0		0	0	82	17	0		99	0	116	0	0		116	215
%Buses	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	1.9	8.1	0.0		2.1	0.0	3.0	0.0	0.0		2.8	2.4
Heavy Trucks	10	0	19	0		29	0	0	0	0		0	0	166	7	0		173	18	151	0	0		169	371
%Heavy Trucks	16.4	0.0	12.0	0.0		13.2	0.0	0.0	0.0	0.0		0.0	0.0	3.8	3.3	0.0		3.7	12.3	3.9	0.0	0.0		4.2	4.2

Project ID: 25-430193-013
Location: Fargo St & Summer St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Fargo St Northbound					Fargo St Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	2	0	5	0	7	0	0	0	0	0	0	140	7	0	147	8	261	0	0	269	423
8:00 AM	5	0	13	0	18	0	0	0	0	0	0	125	21	0	146	3	254	0	0	257	421
8:15 AM	5	0	10	0	15	0	0	0	0	0	0	127	9	0	136	9	241	0	0	250	401
8:30 AM	4	0	7	0	11	0	0	0	0	0	0	147	24	0	171	9	261	0	0	270	452
Total Volume	16	0	35	0	51	0	0	0	0	0	0	539	61	0	600	29	1017	0	0	1046	1697
% App. Total	31.4	0.0	68.6	0.0	100	0.0	0.0	0.0	0.0	0	0.0	89.8	10.2	0.0	100	2.8	97.2	0.0	0.0	100	
PHF					0.708										0.877					0.969	0.939
Cars, PU, Vans	13	0	25	0	38	0	0	0	0	0	0	480	53	0	533	24	947	0	0	971	1542
% Cars, PU, Vans	81.3	0.0	71.4	0.0	74.5	0.0	0.0	0.0	0.0	0.0	0.0	89.1	86.9	0.0	88.8	82.8	93.1	0.0	0.0	92.8	90.9
Buses	0	0	0	0	0	0	0	0	0	0	0	17	5	0	22	0	28	0	0	28	50
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	8.2	0.0	3.7	0.0	2.8	0.0	0.0	2.7	2.9
Heavy Trucks	3	0	10	0	13	0	0	0	0	0	0	42	3	0	45	5	42	0	0	47	105
%Heavy Trucks	18.8	0.0	28.6	0.0	25.5	0.0	0.0	0.0	0.0	0.0	0.0	7.8	4.9	0.0	7.5	17.2	4.1	0.0	0.0	4.5	6.2

PM

	Fargo St Northbound					Fargo St Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	2	0	6	0	8	0	0	0	0	0	0	275	4	0	279	4	126	0	1	131	418
5:30 PM	4	0	6	0	10	0	0	0	0	0	0	284	7	1	292	5	135	0	0	140	442
5:45 PM	1	0	6	0	7	0	0	0	0	0	0	270	9	0	279	5	115	0	1	121	407
6:00 PM	0	0	4	0	4	0	0	0	0	0	0	277	3	0	280	4	116	0	0	120	404
Total Volume	7	0	22	0	29	0	0	0	0	0	0	1106	23	1	1130	18	492	0	2	512	1671
% App. Total	24.1	0.0	75.9	0.0	100	0.0	0.0	0.0	0.0	0	0.0	97.9	2.0	0.1	100	3.5	96.1	0.0	0.4	100	
PHF					0.725										0.967					0.914	0.945
Cars, PU, Vans	6	0	22	0	28	0	0	0	0	0	0	1080	20	1	1101	18	470	0	2	490	1619
% Cars, PU, Vans	85.7	0.0	100.0	0.0	96.6	0.0	0.0	0.0	0.0	0.0	0.0	97.6	87.0	100.0	97.4	100.0	95.5	0.0	100.0	95.7	96.9
Buses	0	0	0	0	0	0	0	0	0	0	0	13	2	0	15	0	14	0	0	14	29
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	8.7	0.0	1.3	0.0	2.8	0.0	0.0	2.7	1.7
Heavy Trucks	1	0	0	0	1	0	0	0	0	0	0	13	1	0	14	0	8	0	0	8	23
%Heavy Trucks	14.3	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1.2	4.3	0.0	1.2	0.0	1.6	0.0	0.0	1.6	1.4

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-014
Date: 12/16/2025

Data - Total

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	20	0	6	0	1	65	0	0	0	76	35	0	203
6:15 AM	0	0	0	0	43	0	4	0	3	93	0	0	0	58	58	0	259
6:30 AM	0	0	0	0	28	0	5	0	2	68	0	0	0	101	92	0	296
6:45 AM	0	0	0	0	33	0	2	0	3	89	0	0	0	88	94	0	309
7:00 AM	0	0	0	0	40	0	10	0	2	83	0	0	0	103	118	0	356
7:15 AM	0	0	0	0	35	0	5	0	3	90	0	0	0	97	128	0	358
7:30 AM	0	0	0	0	34	0	4	0	7	76	0	0	0	104	140	0	365
7:45 AM	0	0	0	0	38	0	11	0	1	112	0	0	0	130	131	0	423
8:00 AM	0	0	0	0	48	0	5	0	1	102	0	0	0	125	120	0	401
8:15 AM	0	0	0	0	36	0	5	0	2	93	0	0	0	146	116	0	398
8:30 AM	0	0	0	0	52	0	5	0	3	124	0	0	0	140	117	0	441
8:45 AM	0	0	0	0	46	0	9	0	4	113	0	0	0	112	83	0	367
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	453	0	71	0	32	1108	0	0	0	1280	1232	0	4176
APPROACH %'s :					86.45%	0.00%	13.55%	0.00%	2.81%	97.19%	0.00%	0.00%	0.00%	50.96%	49.04%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	174	0	26	0	7	431	0	0	0	541	484	0	1663
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.837	0.000	0.591	0.000	0.583	0.869	0.000	0.000	0.000	0.926	0.924	0.000	0.943
					0.877				0.862				0.978				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	74	0	10	0	5	160	0	0	0	57	51	0	357
4:15 PM	0	0	0	0	70	0	14	0	3	197	0	0	0	86	52	0	422
4:30 PM	0	0	0	0	67	0	8	0	8	161	0	0	0	90	46	0	380
4:45 PM	0	0	0	0	59	0	12	0	3	154	0	0	0	73	37	0	338
5:00 PM	0	0	0	0	69	0	6	0	9	165	0	0	0	84	59	0	392
5:15 PM	0	0	0	0	95	0	9	0	2	188	0	0	0	71	55	0	420
5:30 PM	0	0	0	0	96	0	6	0	6	197	0	0	0	72	68	1	446
5:45 PM	0	0	0	0	116	0	9	0	2	165	0	0	0	75	39	0	406
6:00 PM	0	0	0	0	111	0	4	0	6	159	0	0	0	83	35	0	398
6:15 PM	0	0	0	0	105	0	9	0	4	175	0	0	0	69	51	0	413
6:30 PM	0	0	0	0	80	0	4	0	4	174	0	0	0	89	42	0	393
6:45 PM	0	0	0	0	103	0	6	0	3	121	0	0	0	50	30	0	313
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1045	0	97	0	55	2016	0	0	0	899	565	1	4678
APPROACH %'s :					91.51%	0.00%	8.49%	0.00%	2.66%	97.34%	0.00%	0.00%	0.00%	61.37%	38.57%	0.07%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	418	0	28	0	16	709	0	0	0	301	197	1	1670
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.901	0.000	0.778	0.000	0.667	0.900	0.000	0.000	0.000	0.907	0.724	0.250	0.936
					0.892				0.893				0.885				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-014
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	16	0	6	0	1	57	0	0	0	70	32	0	182
6:15 AM	0	0	0	0	35	0	3	0	2	85	0	0	0	52	55	0	232
6:30 AM	0	0	0	0	26	0	4	0	2	60	0	0	0	94	88	0	274
6:45 AM	0	0	0	0	30	0	2	0	2	82	0	0	0	79	81	0	276
7:00 AM	0	0	0	0	33	0	7	0	2	75	0	0	0	85	111	0	313
7:15 AM	0	0	0	0	29	0	5	0	3	80	0	0	0	87	124	0	328
7:30 AM	0	0	0	0	28	0	4	0	5	66	0	0	0	92	134	0	329
7:45 AM	0	0	0	0	30	0	8	0	1	103	0	0	0	118	128	0	388
8:00 AM	0	0	0	0	40	0	4	0	1	95	0	0	0	117	114	0	371
8:15 AM	0	0	0	0	31	0	5	0	1	84	0	0	0	135	113	0	369
8:30 AM	0	0	0	0	45	0	3	0	2	110	0	0	0	119	111	0	390
8:45 AM	0	0	0	0	41	0	9	0	3	106	0	0	0	92	76	0	327
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	384	0	60	0	25	1003	0	0	0	1140	1167	0	3779
APPROACH %'s :					86.49%	0.00%	13.51%	0.00%	2.43%	97.57%	0.00%	0.00%	0.00%	49.41%	50.59%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	146	0	20	0	5	392	0	0	0	489	466	0	1518
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.811	0.000	0.625	0.000	0.625	0.891	0.000	0.000	0.000	0.906	0.910	0.000	0.973
					0.865				0.886				0.963				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	73	0	9	0	4	155	0	0	0	50	48	0	339
4:15 PM	0	0	0	0	69	0	13	0	3	188	0	0	0	80	49	0	402
4:30 PM	0	0	0	0	67	0	6	0	7	153	0	0	0	86	46	0	365
4:45 PM	0	0	0	0	59	0	12	0	3	146	0	0	0	71	35	0	326
5:00 PM	0	0	0	0	66	0	5	0	8	160	0	0	0	79	58	0	376
5:15 PM	0	0	0	0	94	0	8	0	2	185	0	0	0	67	54	0	410
5:30 PM	0	0	0	0	96	0	4	0	4	191	0	0	0	68	67	1	431
5:45 PM	0	0	0	0	115	0	8	0	2	154	0	0	0	70	37	0	386
6:00 PM	0	0	0	0	111	0	3	0	6	152	0	0	0	79	34	0	385
6:15 PM	0	0	0	0	104	0	9	0	3	165	0	0	0	65	48	0	394
6:30 PM	0	0	0	0	79	0	4	0	4	166	0	0	0	84	41	0	378
6:45 PM	0	0	0	0	100	0	6	0	3	116	0	0	0	47	29	0	301
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1033	0	87	0	49	1931	0	0	0	846	546	1	4493
APPROACH %'s :					92.23%	0.00%	7.77%	0.00%	2.47%	97.53%	0.00%	0.00%	0.00%	60.73%	39.20%	0.07%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	416	0	23	0	14	682	0	0	0	284	192	1	1612
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.904	0.000	0.719	0.000	0.583	0.893	0.000	0.000	0.000	0.899	0.716	0.250	0.935
					0.892				0.892				0.877				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-014
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	6
6:15 AM	0	0	0	0	0	0	0	0	1	3	0	0	0	4	2	0	10
6:30 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	4	2	0	8
6:45 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	2	3	0	9
7:00 AM	0	0	0	0	2	0	0	0	0	1	0	0	0	8	1	0	12
7:15 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	4	1	0	10
7:30 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	7	1	0	13
7:45 AM	0	0	0	0	2	0	1	0	0	4	0	0	0	3	2	0	12
8:00 AM	0	0	0	0	3	0	0	0	0	4	0	0	0	7	0	0	14
8:15 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	6	0	0	10
8:30 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	9	1	0	15
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	1	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	16	0	1	0	1	32	0	0	0	60	16	0	126
APPROACH %'s :					94.12%	0.00%	5.88%	0.00%	3.03%	96.97%	0.00%	0.00%	0.00%	78.95%	21.05%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	8	0	1	0	0	14	0	0	0	25	3	0	51
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.667	0.000	0.250	0.000	0.000	0.875	0.000	0.000	0.000	0.694	0.375	0.000	0.850
						0.750				0.875				0.700			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	4	0	0	8
4:15 PM	0	0	0	0	0	0	1	0	0	7	0	0	0	2	0	0	10
4:30 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0	0	7
5:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	5	0	0	9
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
5:30 PM	0	0	0	0	0	0	1	0	1	4	0	0	0	2	1	0	9
5:45 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	3	1	0	11
6:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	4	0	0	8
6:15 PM	0	0	0	0	1	0	0	0	0	4	0	0	0	4	1	0	10
6:30 PM	0	0	0	0	1	0	0	0	0	4	0	0	0	2	0	0	7
6:45 PM	0	0	0	0	2	0	0	0	0	4	0	0	0	3	1	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	0	5	0	2	47	0	0	0	36	4	0	98
APPROACH %'s :					44.44%	0.00%	55.56%	0.00%	4.08%	95.92%	0.00%	0.00%	0.00%	90.00%	10.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	1	15	0	0	0	12	2	0	32
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.250	0.536	0.000	0.000	0.000	0.750	0.500	0.000	0.727
						0.500				0.571				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-014
Date: 12/16/2025

Data - HT

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	4	0	0	0	0	6	0	0	0	4	1	0	15
6:15 AM	0	0	0	0	8	0	1	0	0	5	0	0	0	2	1	0	17
6:30 AM	0	0	0	0	1	0	1	0	0	7	0	0	0	3	2	0	14
6:45 AM	0	0	0	0	2	0	0	0	1	4	0	0	0	7	10	0	24
7:00 AM	0	0	0	0	5	0	3	0	0	7	0	0	0	10	6	0	31
7:15 AM	0	0	0	0	4	0	0	0	0	7	0	0	0	6	3	0	20
7:30 AM	0	0	0	0	4	0	0	0	2	7	0	0	0	5	5	0	23
7:45 AM	0	0	0	0	6	0	2	0	0	5	0	0	0	9	1	0	23
8:00 AM	0	0	0	0	5	0	1	0	0	3	0	0	0	1	6	0	16
8:15 AM	0	0	0	0	4	0	0	0	1	6	0	0	0	5	3	0	19
8:30 AM	0	0	0	0	5	0	2	0	1	11	0	0	0	12	5	0	36
8:45 AM	0	0	0	0	5	0	0	0	1	5	0	0	0	16	6	0	33
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	53	0	10	0	6	73	0	0	0	80	49	0	271
APPROACH %'s :					84.13%	0.00%	15.87%	0.00%	7.59%	92.41%	0.00%	0.00%	0.00%	62.02%	37.98%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	20	0	5	0	2	25	0	0	0	27	15	0	94
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.833	0.000	0.625	0.000	0.500	0.568	0.000	0.000	0.000	0.563	0.625	0.000	0.653
					0.781				0.563				0.618				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	1	2	0	0	0	3	3	0	10
4:15 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	4	3	0	10
4:30 PM	0	0	0	0	0	0	2	0	0	6	0	0	0	2	0	0	10
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	5
5:00 PM	0	0	0	0	3	0	0	0	1	2	0	0	0	0	1	0	7
5:15 PM	0	0	0	0	1	0	1	0	0	2	0	0	0	1	1	0	6
5:30 PM	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	0	6
5:45 PM	0	0	0	0	1	0	1	0	0	4	0	0	0	2	1	0	9
6:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	5
6:15 PM	0	0	0	0	0	0	0	0	1	6	0	0	0	0	2	0	9
6:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	3	1	0	8
6:45 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	8	0	5	0	4	38	0	0	0	17	15	0	87
APPROACH %'s :					61.54%	0.00%	38.46%	0.00%	9.52%	90.48%	0.00%	0.00%	0.00%	53.13%	46.88%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	2	0	3	0	1	12	0	0	0	5	3	0	26
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.750	0.000	0.250	0.750	0.000	0.000	0.000	0.625	0.750	0.000	0.722
					0.625				0.813				0.667				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-014
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8
8:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	11	0	0	0	31	0	1	43
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	96.88%	0.00%	3.13%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	0	18	0	0	25
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.000	0.563	0.000	0.000	0.781
										0.583				0.563			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	0.5	1.5	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:15 PM	1	0	0	0	0	0	0	0	0	5	0	0	0	2	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
6:00 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
6:15 PM	0	0	0	0	1	0	0	0	0	6	0	0	0	0	0	0	7
6:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	2	0	1	0	0	35	0	1	0	7	0	0	47
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	66.67%	0.00%	33.33%	0.00%	0.00%	97.22%	0.00%	2.78%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	0	0	0	1	0	0	0	0	13	0	0	0	4	0	0	19
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.650	0.000	0.000	0.000	0.500	0.000	0.000	0.594
		0.250				0.250				0.650				0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & Summer St
City: Boston

Project ID: 25-430193-014
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Pumphouse Rd		Pumphouse Rd		Summer St		Summer St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	5	2	0	0	0	0	0	0	7
6:15 AM	5	2	1	5	0	0	1	0	14
6:30 AM	6	4	4	2	2	0	0	0	18
6:45 AM	2	9	1	4	0	1	2	1	20
7:00 AM	1	6	5	5	1	0	0	0	18
7:15 AM	4	5	1	5	1	0	0	0	16
7:30 AM	1	9	4	7	4	0	0	0	25
7:45 AM	3	5	0	10	1	0	1	0	20
8:00 AM	6	15	2	9	2	0	0	0	34
8:15 AM	5	18	5	21	3	0	1	0	53
8:30 AM	5	25	2	13	3	0	1	0	49
8:45 AM	5	7	5	9	0	0	1	0	27
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	48	107	30	90	17	1	7	1	301
APPROACH %'s :	30.97%	69.03%	25.00%	75.00%	94.44%	5.56%	87.50%	12.50%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	19	63	9	53	9	0	3	0	156
PEAK HR FACTOR :	0.792	0.630	0.450	0.631	0.750		0.750		0.736
	0.683		0.596		0.750		0.750		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	6	9	4	7	0	2	1	0	29
4:15 PM	7	6	7	5	0	1	0	1	27
4:30 PM	2	4	10	7	0	1	0	2	26
4:45 PM	8	4	7	1	1	1	0	0	22
5:00 PM	16	4	10	7	0	2	0	1	40
5:15 PM	11	1	21	2	0	2	0	2	39
5:30 PM	23	4	26	2	0	1	0	0	56
5:45 PM	13	6	12	0	1	4	0	2	38
6:00 PM	16	5	13	0	1	2	0	0	37
6:15 PM	4	6	16	5	0	0	0	0	31
6:30 PM	11	9	11	0	1	3	0	0	35
6:45 PM	13	2	1	2	0	0	0	0	18
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	130	60	138	38	4	19	1	8	398
APPROACH %'s :	68.42%	31.58%	78.41%	21.59%	17.39%	82.61%	11.11%	88.89%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	63	16	72	4	2	9	0	4	170
PEAK HR FACTOR :	0.685	0.667	0.692	0.500	0.500	0.563		0.500	0.759
	0.731		0.679		0.550		0.500		

Prepared by National Data & Surveying Services

Pumphouse Rd & Summer St

Peak Hour Turning Movement Count

ID: 25-430193-014
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (Pumphouse Rd)

AM	26	0	174	0	491	AM
NOON	0	0	0	0	0	NOON
PM	28	0	418	0	213	PM
	0.5	0	1.5	0		

EASTBOUND (Summer St)

AM	NOON	PM		
567	0	329		
0	0	0	0	
7	0	16	0.5	
431	0	709	1.5	
0	0	0	0	

WESTBOUND (Summer St)

	PM	NOON	AM
0	197	0	484
2	301	0	541
0	0	0	0
0	1	0	0
	1128	0	605

CONTROL

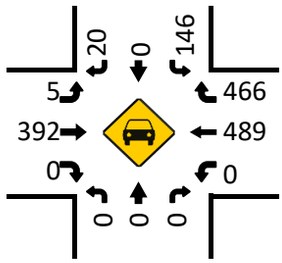
Signalized

TEV	1663	0	1670
	AM	NOON	PM
PHF	0.94		0.94

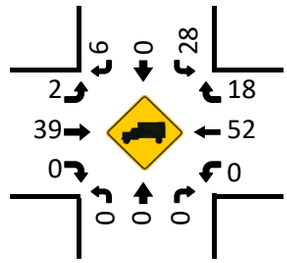
NORTHBOUND (Pumphouse Rd)

PM	0	0	0	0	PM
NOON	0	0	0	0	NOON
AM	0	0	0	0	AM
	0	0	0	0	

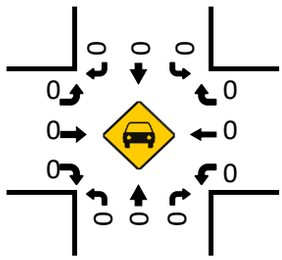
Cars (AM)



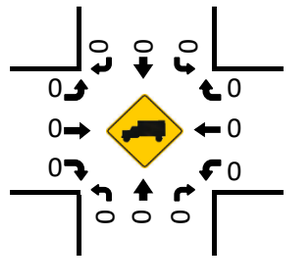
Total Trucks (AM)



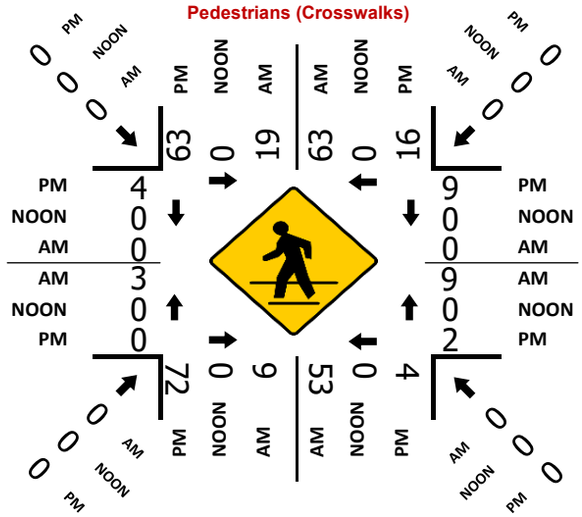
Cars (NOON)



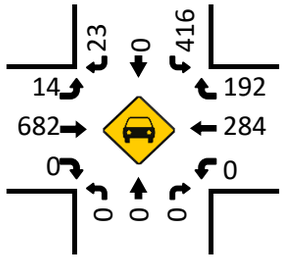
Total Trucks (NOON)



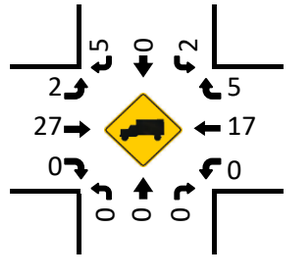
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-014
Location: Pumphouse Rd & Summer St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pumphouse Rd Northbound						Pumphouse Rd Southbound						Summer St Eastbound						Summer St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	20	0	6	0	7	26	1	65	0	0	0	66	0	76	35	0	0	111	203
6:15 AM	0	0	0	0	6	0	43	0	4	0	7	47	3	93	0	0	1	96	0	58	58	0	0	116	259
6:30 AM	0	0	0	0	6	0	28	0	5	0	10	33	2	68	0	0	0	70	0	101	92	0	2	193	296
6:45 AM	0	0	0	0	5	0	33	0	2	0	11	35	3	89	0	0	3	92	0	88	94	0	1	182	309
Total	0	0	0	0	17	0	124	0	17	0	35	141	9	315	0	0	4	324	0	323	279	0	3	602	1067
7:00 AM	0	0	0	0	10	0	40	0	10	0	7	50	2	83	0	0	0	85	0	103	118	0	1	221	356
7:15 AM	0	0	0	0	6	0	35	0	5	0	9	40	3	90	0	0	0	93	0	97	128	0	1	225	358
7:30 AM	0	0	0	0	11	0	34	0	4	0	10	38	7	76	0	0	0	83	0	104	140	0	4	244	365
7:45 AM	0	0	0	0	10	0	38	0	11	0	8	49	1	112	0	0	1	113	0	130	131	0	1	261	423
Total	0	0	0	0	37	0	147	0	30	0	34	177	13	361	0	0	1	374	0	434	517	0	7	951	1502
8:00 AM	0	0	0	0	11	0	48	0	5	0	21	53	1	102	0	0	0	103	0	125	120	0	2	245	401
8:15 AM	0	0	0	0	26	0	36	0	5	0	23	41	2	93	0	0	1	95	0	146	116	0	3	262	398
8:30 AM	0	0	0	0	15	0	52	0	5	0	30	57	3	124	0	0	1	127	0	140	117	0	3	257	441
8:45 AM	0	0	0	0	14	0	46	0	9	0	12	55	4	113	0	0	1	117	0	112	83	0	0	195	367
Total	0	0	0	0	66	0	182	0	24	0	86	206	10	432	0	0	3	442	0	523	436	0	8	959	1607
BREAK																									
4:00 PM	0	0	0	0	11	0	74	0	10	0	15	84	5	160	0	0	1	165	0	57	51	0	2	108	357
4:15 PM	0	0	0	0	12	0	70	0	14	0	13	84	3	197	0	0	1	200	0	86	52	0	1	138	422
4:30 PM	0	0	0	0	17	0	67	0	8	0	6	75	8	161	0	0	2	169	0	90	46	0	1	136	380
4:45 PM	0	0	0	0	8	0	59	0	12	0	12	71	3	154	0	0	0	157	0	73	37	0	2	110	338
Total	0	0	0	0	48	0	270	0	44	0	46	314	19	672	0	0	4	691	0	306	186	0	6	492	1497
5:00 PM	0	0	0	0	17	0	69	0	6	0	20	75	9	165	0	0	1	174	0	84	59	0	2	143	392
5:15 PM	0	0	0	0	23	0	95	0	9	0	12	104	2	188	0	0	2	190	0	71	55	0	2	126	420
5:30 PM	0	0	0	0	28	0	96	0	6	0	27	102	6	197	0	0	0	203	0	72	68	1	1	141	446
5:45 PM	0	0	0	0	12	0	116	0	9	0	19	125	2	165	0	0	2	167	0	75	39	0	5	114	406
Total	0	0	0	0	80	0	376	0	30	0	78	406	19	715	0	0	5	734	0	302	221	1	10	524	1664
6:00 PM	0	0	0	0	13	0	111	0	4	0	21	115	6	159	0	0	0	165	0	83	35	0	3	118	398
6:15 PM	0	0	0	0	21	0	105	0	9	0	10	114	4	175	0	0	0	179	0	69	51	0	0	120	413
6:30 PM	0	0	0	0	11	0	80	0	4	0	20	84	4	174	0	0	0	178	0	89	42	0	4	131	393
6:45 PM	0	0	0	0	3	0	103	0	6	0	15	109	3	121	0	0	0	124	0	50	30	0	0	80	313
Total	0	0	0	0	48	0	399	0	23	0	66	422	17	629	0	0	0	646	0	291	158	0	7	449	1517
Grand Total	0	0	0	0	296	0	1498	0	168	0	345	1666	87	3124	0	0	17	3211	0	2179	1797	1	41	3977	8854
Apprch %	0.0	0.0	0.0	0.0	0.0		89.9	0.0	10.1	0.0	20.7		2.7	97.3	0.0	0.0	0.5		0.0	54.8	45.2	0.0	1.0		
Total %	0.0	0.0	0.0	0.0	3.3	0.0	16.9	0.0	1.9	0.0	3.9	18.8	1.0	35.3	0.0	0.0	0.2	36.3	0.0	24.6	20.3	0.0	0.5	44.9	
Cars, PU, Vans	0	0	0	0		0	1417	0	147	0		1564	74	2934	0	0		3008	0	1986	1713	1		3700	8272
% Cars, PU, Vans	0.0	0.0	0.0	0.0		0.0	94.6	0.0	87.5	0.0		93.9	85.1	93.9	0.0	0.0		93.7	0.0	91.1	95.3	100.0		93.0	93.4
Buses	0	0	0	0		0	20	0	6	0		26	3	79	0	0		82	0	96	20	0		116	224
%Buses	0.0	0.0	0.0	0.0		0.0	1.3	0.0	3.6	0.0		1.6	3.4	2.5	0.0	0.0		2.6	0.0	4.4	1.1	0.0		2.9	2.5
Heavy Trucks	0	0	0	0		0	61	0	15	0		76	10	111	0	0		121	0	97	64	0		161	358
%Heavy Trucks	0.0	0.0	0.0	0.0		0.0	4.1	0.0	8.9	0.0		4.6	11.5	3.6	0.0	0.0		3.8	0.0	4.5	3.6	0.0		4.0	4.0

Project ID: 25-430193-014
Location: Pumphouse Rd & Summer St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Pumphouse Rd Northbound					Pumphouse Rd Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	0	0	0	0	0	38	0	11	0	49	1	112	0	0	113	0	130	131	0	261	423
8:00 AM	0	0	0	0	0	48	0	5	0	53	1	102	0	0	103	0	125	120	0	245	401
8:15 AM	0	0	0	0	0	36	0	5	0	41	2	93	0	0	95	0	146	116	0	262	398
8:30 AM	0	0	0	0	0	52	0	5	0	57	3	124	0	0	127	0	140	117	0	257	441
Total Volume	0	0	0	0	0	174	0	26	0	200	7	431	0	0	438	0	541	484	0	1025	1663
% App. Total	0.0	0.0	0.0	0.0	0	87.0	0.0	13.0	0.0	100	1.6	98.4	0.0	0.0	100	0.0	52.8	47.2	0.0	100	
PHF										0.877					0.862					0.978	0.943
Cars, PU, Vans	0	0	0	0	0	146	0	20	0	166	5	392	0	0	397	0	489	466	0	955	1518
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	83.9	0.0	76.9	0.0	83.0	71.4	91.0	0.0	0.0	90.6	0.0	90.4	96.3	0.0	93.2	91.3
Buses	0	0	0	0	0	8	0	1	0	9	0	14	0	0	14	0	25	3	0	28	51
%Buses	0.0	0.0	0.0	0.0	0.0	4.6	0.0	3.8	0.0	4.5	0.0	3.2	0.0	0.0	3.2	0.0	4.6	0.6	0.0	2.7	3.1
Heavy Trucks	0	0	0	0	0	20	0	5	0	25	2	25	0	0	27	0	27	15	0	42	94
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	11.5	0.0	19.2	0.0	12.5	28.6	5.8	0.0	0.0	6.2	0.0	5.0	3.1	0.0	4.1	5.7

PM

	Pumphouse Rd Northbound					Pumphouse Rd Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	0	0	0	0	0	95	0	9	0	104	2	188	0	0	190	0	71	55	0	126	420
5:30 PM	0	0	0	0	0	96	0	6	0	102	6	197	0	0	203	0	72	68	1	141	446
5:45 PM	0	0	0	0	0	116	0	9	0	125	2	165	0	0	167	0	75	39	0	114	406
6:00 PM	0	0	0	0	0	111	0	4	0	115	6	159	0	0	165	0	83	35	0	118	398
Total Volume	0	0	0	0	0	418	0	28	0	446	16	709	0	0	725	0	301	197	1	499	1670
% App. Total	0.0	0.0	0.0	0.0	0	93.7	0.0	6.3	0.0	100	2.2	97.8	0.0	0.0	100	0.0	60.3	39.5	0.2	100	
PHF										0.892					0.893					0.885	0.936
Cars, PU, Vans	0	0	0	0	0	416	0	23	0	439	14	682	0	0	696	0	284	192	1	477	1612
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	99.5	0.0	82.1	0.0	98.4	87.5	96.2	0.0	0.0	96.0	0.0	94.4	97.5	100.0	95.6	96.5
Buses	0	0	0	0	0	0	0	2	0	2	1	15	0	0	16	0	12	2	0	14	32
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.4	6.3	2.1	0.0	0.0	2.2	0.0	4.0	1.0	0.0	2.8	1.9
Heavy Trucks	0	0	0	0	0	2	0	3	0	5	1	12	0	0	13	0	5	3	0	8	26
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.5	0.0	10.7	0.0	1.1	6.3	1.7	0.0	0.0	1.8	0.0	1.7	1.5	0.0	1.6	1.6

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston
Control: 2-Way Stop(EB/WB)

Project ID: 25-430193-015
Date: 12/16/2025

Data - Total

NS/EW Streets:	E St				E St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	3	0	1	0	0	0	0	0	1	5	11	0	2	2	1	0	26
6:15 AM	2	0	3	0	0	0	1	0	0	7	15	0	8	3	0	0	39
6:30 AM	4	1	11	0	0	0	0	0	2	9	10	0	9	5	1	0	52
6:45 AM	5	1	5	0	1	0	0	0	1	4	14	0	5	7	1	0	44
7:00 AM	9	2	2	0	3	3	0	0	2	3	21	0	12	7	3	0	67
7:15 AM	11	2	5	0	0	3	1	0	3	3	12	0	5	6	2	0	53
7:30 AM	10	0	13	1	0	1	1	0	1	7	23	0	8	8	3	1	77
7:45 AM	9	3	5	0	1	2	0	0	1	6	15	0	8	7	2	0	59
8:00 AM	15	1	12	0	0	2	1	0	2	6	28	0	11	7	2	0	87
8:15 AM	12	0	14	0	0	0	0	0	2	2	24	1	6	10	1	0	72
8:30 AM	12	4	4	0	1	3	1	0	3	6	22	0	14	12	4	0	86
8:45 AM	6	2	7	0	0	1	0	0	1	5	25	0	13	14	4	0	78
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	98	16	82	1	6	15	5	0	19	63	220	1	101	88	24	1	740
APPROACH %'s :	49.75%	8.12%	41.62%	0.51%	23.08%	57.69%	19.23%	0.00%	6.27%	20.79%	72.61%	0.33%	47.20%	41.12%	11.21%	0.47%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	45	7	37	0	1	6	2	0	8	19	99	1	44	43	11	0	323
PEAK HR FACTOR :	0.750	0.438	0.661	0.000	0.250	0.500	0.500	0.000	0.667	0.792	0.884	0.250	0.786	0.768	0.688	0.000	0.928
	0.795				0.450				0.882				0.790				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	16	2	2	0	2	3	1	0	1	2	34	0	7	3	2	0	75
4:15 PM	16	2	5	0	2	0	1	0	2	5	36	0	11	6	1	0	87
4:30 PM	7	2	5	0	2	1	0	0	1	4	36	0	2	10	1	0	71
4:45 PM	7	0	3	0	2	0	4	0	1	4	47	0	12	7	1	0	88
5:00 PM	13	1	2	0	1	1	0	0	0	1	46	0	13	4	2	0	84
5:15 PM	5	0	7	0	0	0	1	0	1	3	39	0	8	1	0	0	65
5:30 PM	9	0	2	0	2	1	5	0	1	2	43	0	8	7	0	0	80
5:45 PM	8	2	3	0	0	0	2	0	0	3	44	1	10	3	0	0	76
6:00 PM	6	1	3	0	0	0	2	0	0	1	56	0	7	0	0	0	76
6:15 PM	3	0	4	0	0	0	0	0	0	3	48	1	9	3	1	0	72
6:30 PM	8	0	4	0	0	0	0	0	0	2	39	0	4	2	0	0	59
6:45 PM	5	1	3	0	0	0	1	0	0	3	24	0	8	7	0	0	52
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	103	11	43	0	11	6	17	0	7	33	492	2	99	53	8	0	885
APPROACH %'s :	65.61%	7.01%	27.39%	0.00%	32.35%	17.65%	50.00%	0.00%	1.31%	6.18%	92.13%	0.37%	61.88%	33.13%	5.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	43	5	15	0	7	2	5	0	4	14	165	0	38	27	5	0	330
PEAK HR FACTOR :	0.672	0.625	0.750	0.000	0.875	0.500	0.313	0.000	0.500	0.700	0.878	0.000	0.731	0.675	0.625	0.000	0.938
	0.685				0.583				0.880				0.875				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston
Control: 2-Way Stop(EB/WB)

Project ID: 25-430193-015
Date: 12/16/2025

Data - Cars

NS/EW Streets:	E St				E St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	3	0	1	0	0	0	0	0	0	5	11	0	2	2	1	0	25
6:15 AM	1	0	2	0	0	0	0	0	0	6	15	0	7	3	0	0	34
6:30 AM	3	1	9	0	0	0	0	0	2	9	10	0	6	4	1	0	45
6:45 AM	3	1	4	0	1	0	0	0	1	4	14	0	5	5	1	0	39
7:00 AM	8	2	2	0	3	3	0	0	2	3	21	0	11	6	3	0	64
7:15 AM	7	2	4	0	0	3	0	0	2	3	12	0	3	4	2	0	42
7:30 AM	8	0	8	1	0	1	1	0	1	7	22	0	7	6	3	0	65
7:45 AM	7	3	4	0	1	2	0	0	1	6	14	0	8	6	2	0	54
8:00 AM	13	1	10	0	0	2	0	0	2	6	26	0	9	6	2	0	77
8:15 AM	10	0	9	0	0	0	0	0	2	2	23	1	6	9	1	0	63
8:30 AM	11	4	3	0	1	3	0	0	3	6	22	0	12	10	4	0	79
8:45 AM	6	2	5	0	0	1	0	0	1	5	25	0	11	13	3	0	72
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	80	16	61	1	6	15	1	0	17	62	215	1	87	74	23	0	659
APPROACH %'s :	50.63%	10.13%	38.61%	0.63%	27.27%	68.18%	4.55%	0.00%	5.76%	21.02%	72.88%	0.34%	47.28%	40.22%	12.50%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	40	7	27	0	1	6	0	0	8	19	96	1	38	38	10	0	291
PEAK HR FACTOR :	0.769	0.438	0.675	0.000	0.250	0.500	0.000	0.000	0.667	0.792	0.923	0.250	0.792	0.731	0.625	0.000	0.921
	0.771				0.438				0.912				0.796				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	2	2	0	2	3	1	0	1	2	33	0	7	2	2	0	73
4:15 PM	14	2	5	0	2	0	1	0	2	5	35	0	10	6	1	0	83
4:30 PM	7	2	5	0	2	1	0	0	1	4	34	0	2	8	1	0	67
4:45 PM	7	0	3	0	2	0	3	0	1	4	46	0	12	7	1	0	86
5:00 PM	12	1	2	0	1	1	0	0	0	1	45	0	13	3	2	0	81
5:15 PM	5	0	6	0	0	0	1	0	1	3	39	0	8	1	0	0	64
5:30 PM	9	0	2	0	2	1	4	0	1	2	42	0	8	6	0	0	77
5:45 PM	7	2	3	0	0	0	2	0	0	3	43	1	10	2	0	0	73
6:00 PM	6	0	3	0	0	0	0	0	0	1	52	0	7	0	0	0	69
6:15 PM	2	0	4	0	0	0	0	0	0	2	46	0	9	2	1	0	66
6:30 PM	8	0	4	0	0	0	0	0	0	1	38	0	4	1	0	0	56
6:45 PM	4	1	3	0	0	0	1	0	0	3	24	0	8	5	0	0	49
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	97	10	42	0	11	6	13	0	7	31	477	1	98	43	8	0	844
APPROACH %'s :	65.10%	6.71%	28.19%	0.00%	36.67%	20.00%	43.33%	0.00%	1.36%	6.01%	92.44%	0.19%	65.77%	28.86%	5.37%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	40	5	15	0	7	2	4	0	4	14	160	0	37	24	5	0	317
PEAK HR FACTOR :	0.714	0.625	0.750	0.000	0.875	0.500	0.333	0.000	0.500	0.700	0.870	0.000	0.712	0.750	0.625	0.000	0.922
	0.714				0.650				0.873				0.825				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston
Control: 2-Way Stop(EB/WB)

Project ID: 25-430193-015
Date: 12/16/2025

Data - Buses

NS/EW Streets:	E St				E St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500
														0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	9
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500
														0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston
Control: 2-Way Stop(EB/WB)

Project ID: 25-430193-015
Date: 12/16/2025

Data - HT

NS/EW Streets:	E St				E St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 AM	1	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	5
6:30 AM	1	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	6
6:45 AM	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	4
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	4	0	1	0	0	0	1	0	1	0	0	0	2	0	0	0	9
7:30 AM	2	0	5	0	0	0	0	0	0	0	1	0	1	1	0	1	11
7:45 AM	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	4
8:00 AM	2	0	2	0	0	0	1	0	0	0	2	0	2	0	0	0	9
8:15 AM	2	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	8
8:30 AM	1	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	5
8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	2	1	1	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	18	0	21	0	0	0	4	0	2	1	5	0	14	3	1	1	70
APPROACH %'s :	46.15%	0.00%	53.85%	0.00%	0.00%	0.00%	100.00%	0.00%	25.00%	12.50%	62.50%	0.00%	73.68%	15.79%	5.26%	5.26%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	0	10	0	0	0	2	0	0	0	3	0	6	1	1	0	28
PEAK HR FACTOR :	0.625	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.375	0.000	0.750	0.250	0.250	0.000	0.778
	0.536				0.500				0.375				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
4:15 PM	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3
4:45 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
5:00 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
6:00 PM	0	1	0	0	0	0	2	0	0	0	4	0	0	0	0	0	7
6:15 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
6:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
6:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	1	1	0	0	0	4	0	0	2	15	0	1	4	0	0	32
APPROACH %'s :	66.67%	16.67%	16.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	11.76%	88.24%	0.00%	20.00%	80.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	3	0	0	0	0	0	1	0	0	0	5	0	1	1	0	0	11
PEAK HR FACTOR :	0.375	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.625	0.000	0.250	0.250	0.000	0.000	0.688
	0.375				0.250				0.625				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston
Control: 2-Way Stop(EB/WB)

Project ID: 25-430193-015
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	E St				E St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
8:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	4	0	0	0	0	0	0	3	0	0	1	1	0	0	9
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	0	0	2	0	0	1	1	0	0	6
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.250	0.000	0.000	0.750
	0.500				0.000				0.500				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5
APPROACH %'s :													80.00%	20.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500
													0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: E St & Fargo St
City: Boston

Project ID: 25-430193-015
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	E St		E St		Fargo St		Fargo St				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
6:00 AM	0	1	0	0	2	0	11	0	0	3	17
6:15 AM	1	0	0	1	0	0	7	3	0	1	13
6:30 AM	1	1	0	4	2	0	6	0	3	0	17
6:45 AM	1	2	0	2	2	0	7	0	1	0	15
7:00 AM	0	0	0	0	2	0	2	0	0	2	6
7:15 AM	0	4	0	1	2	2	6	1	0	0	16
7:30 AM	1	0	1	3	0	0	5	1	3	1	15
7:45 AM	0	1	1	1	1	0	5	1	0	0	10
8:00 AM	0	1	0	1	2	0	5	1	1	2	13
8:15 AM	1	3	0	4	1	0	15	1	0	0	25
8:30 AM	1	4	0	1	4	0	8	2	1	0	21
8:45 AM	0	1	0	3	0	0	11	0	1	0	16
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	6	18	2	21	18	2	88	10	10	9	184
APPROACH %'s :	25.00%	75.00%	8.70%	91.30%	90.00%	10.00%	89.80%	10.20%	52.63%	47.37%	
PEAK HR :	**08:00 AM - 09:00 AM**										TOTAL
PEAK HR VOL :	2	9	0	9	7	0	39	4	3	2	75
PEAK HR FACTOR :	0.500	0.563		0.563	0.438		0.650	0.500	0.750	0.250	
	0.550		0.563		0.438		0.672		0.417		0.750

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		MID BLOCK		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
4:00 PM	1	1	2	0	0	1	0	6	0	0	11
4:15 PM	1	0	2	0	1	0	2	10	5	1	22
4:30 PM	6	1	3	1	0	3	0	5	5	0	24
4:45 PM	2	1	1	1	1	2	1	4	2	0	15
5:00 PM	1	0	5	1	0	1	0	11	3	0	22
5:15 PM	0	1	0	0	0	2	0	6	2	1	12
5:30 PM	0	0	1	0	0	0	0	3	4	0	8
5:45 PM	4	1	0	0	1	2	0	1	0	0	9
6:00 PM	1	0	0	0	0	0	0	1	0	0	2
6:15 PM	1	0	2	1	0	0	1	6	1	0	12
6:30 PM	1	0	1	0	0	1	0	1	0	0	4
6:45 PM	0	0	0	0	0	1	0	2	1	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	18	5	17	4	3	13	4	56	23	2	145
APPROACH %'s :	78.26%	21.74%	80.95%	19.05%	18.75%	81.25%	6.67%	93.33%	92.00%	8.00%	
PEAK HR :	**04:15 PM - 05:15 PM**										TOTAL
PEAK HR VOL :	10	2	11	3	2	6	3	30	15	1	83
PEAK HR FACTOR :	0.417	0.500	0.550	0.750	0.500	0.500	0.375	0.682	0.750	0.250	
	0.429		0.583		0.667		0.688		0.667		0.865

Prepared by National Data & Surveying Services

E St & Fargo St

Peak Hour Turning Movement Count

ID: 25-430193-015
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (E St)

AM	2	6	1	0	26	AM
NOON	0	0	0	0	0	NOON
PM	5	2	7	0	14	PM

EASTBOUND (Fargo St)

AM	NOON	PM		
91	0	75	⇦	
1	0	0	↶	0
8	0	4	↱	0
19	0	14	→	1
99	0	165	↴	0
AM	NOON	PM		

WESTBOUND (Fargo St)

PM	NOON	AM		
5	0	11	↰	0
27	0	43	←	1
38	0	44	↰	0
0	0	0	↰	0
36	0	57	⇨	
PM	NOON	AM		

NORTHBOUND (E St)

PM	205	0	43	5	15	PM
NOON	0	0	0	0	0	NOON
AM	149	0	45	7	37	AM

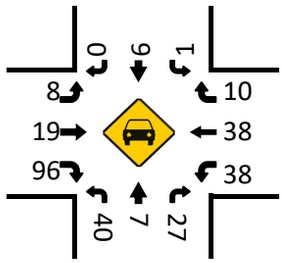
↶	←	↑	↱	
0	0	1	0	

CONTROL

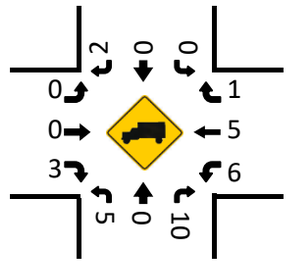
2-Way Stop(EB/WB)

TEV	323	0	330
	AM	NOON	PM
PHF	0.93		0.94

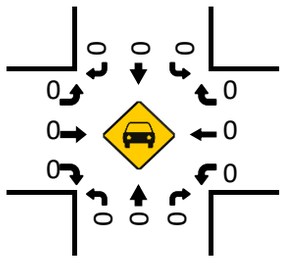
Cars (AM)



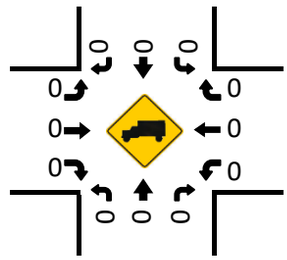
Total Trucks (AM)



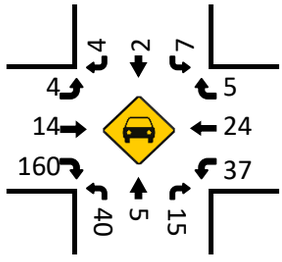
Cars (NOON)



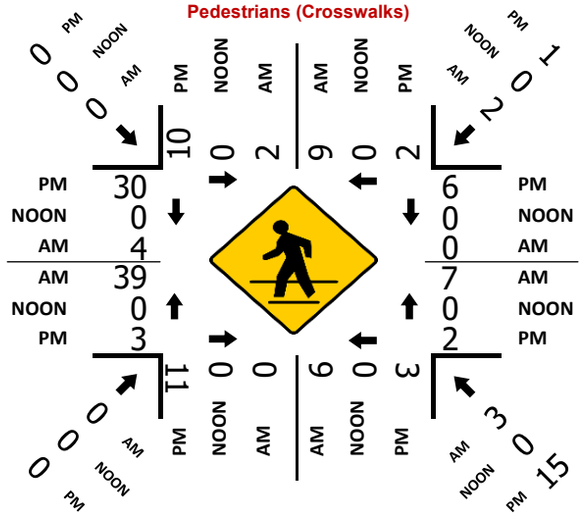
Total Trucks (NOON)



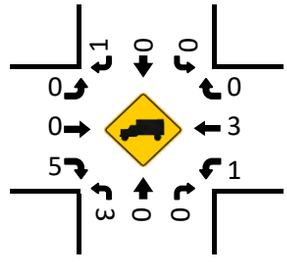
Cars (PM)



Pedestrians (Crosswalks)



Total Trucks (PM)



Project ID: 25-430193-015
Location: E St & Fargo St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	E St Northbound						E St Southbound						Fargo St Eastbound						Fargo St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	3	0	1	0	0	4	0	0	0	0	1	0	1	5	11	0	11	17	2	2	1	0	2	5	26
6:15 AM	2	0	3	0	1	5	0	0	1	0	1	1	0	7	15	0	10	22	8	3	0	0	0	11	39
6:30 AM	4	1	11	0	4	16	0	0	0	0	2	0	2	9	10	0	6	21	9	5	1	0	2	15	52
6:45 AM	5	1	5	0	2	11	1	0	0	0	3	1	1	4	14	0	7	19	5	7	1	0	2	13	44
Total	14	2	20	0	7	36	1	0	1	0	7	2	4	25	50	0	34	79	24	17	3	0	6	44	161
7:00 AM	9	2	2	0	0	13	3	3	0	0	0	6	2	3	21	0	2	26	12	7	3	0	2	22	67
7:15 AM	11	2	5	0	1	18	0	3	1	0	4	4	3	3	12	0	7	18	5	6	2	0	4	13	53
7:30 AM	10	0	13	1	4	24	0	1	1	0	1	2	1	7	23	0	6	31	8	8	3	1	0	20	77
7:45 AM	9	3	5	0	2	17	1	2	0	0	1	3	1	6	15	0	6	22	8	7	2	0	1	17	59
Total	39	7	25	1	7	72	4	9	2	0	6	15	7	19	71	0	21	97	33	28	10	1	7	72	256
8:00 AM	15	1	12	0	1	28	0	2	1	0	1	3	2	6	28	0	6	36	11	7	2	0	2	20	87
8:15 AM	12	0	14	0	4	26	0	0	0	0	4	0	2	2	24	1	16	29	6	10	1	0	1	17	72
8:30 AM	12	4	4	0	1	20	1	3	1	0	5	5	3	6	22	0	10	31	14	12	4	0	4	30	86
8:45 AM	6	2	7	0	3	15	0	1	0	0	1	1	1	5	25	0	11	31	13	14	4	0	0	31	78
Total	45	7	37	0	9	89	1	6	2	0	11	9	8	19	99	1	43	127	44	43	11	0	7	98	323
BREAK																									
4:00 PM	16	2	2	0	2	20	2	3	1	0	2	6	1	2	34	0	6	37	7	3	2	0	1	12	75
4:15 PM	16	2	5	0	2	23	2	0	1	0	1	3	2	5	36	0	12	43	11	6	1	0	1	18	87
4:30 PM	7	2	5	0	4	14	2	1	0	0	7	3	1	4	36	0	5	41	2	10	1	0	3	13	71
4:45 PM	7	0	3	0	2	10	2	0	4	0	3	6	1	4	47	0	5	52	12	7	1	0	3	20	88
Total	46	6	15	0	10	67	8	4	6	0	13	18	5	15	153	0	28	173	32	26	5	0	8	63	321
5:00 PM	13	1	2	0	6	16	1	1	0	0	1	2	0	1	46	0	11	47	13	4	2	0	1	19	84
5:15 PM	5	0	7	0	0	12	0	0	1	0	1	1	1	3	39	0	6	43	8	1	0	0	2	9	65
5:30 PM	9	0	2	0	1	11	2	1	5	0	0	8	1	2	43	0	3	46	8	7	0	0	0	15	80
5:45 PM	8	2	3	0	0	13	0	0	2	0	5	2	0	3	44	1	1	48	10	3	0	0	3	13	76
Total	35	3	14	0	7	52	3	2	8	0	7	13	2	9	172	1	21	184	39	15	2	0	6	56	305
6:00 PM	6	1	3	0	0	10	0	0	2	0	1	2	0	1	56	0	1	57	7	0	0	0	0	7	76
6:15 PM	3	0	4	0	3	7	0	0	0	0	1	0	0	3	48	1	7	52	9	3	1	0	0	13	72
6:30 PM	8	0	4	0	1	12	0	0	0	0	1	0	0	2	39	0	1	41	4	2	0	0	1	6	59
6:45 PM	5	1	3	0	0	9	0	0	1	0	0	1	0	3	24	0	2	27	8	7	0	0	1	15	52
Total	22	2	14	0	4	38	0	0	3	0	3	3	0	9	167	1	11	177	28	12	1	0	2	41	259
Grand Total	201	27	125	1	44	354	17	21	22	0	47	60	26	96	712	3	158	837	200	141	32	1	36	374	1625
Apprch %	56.8	7.6	35.3	0.3	12.4		28.3	35.0	36.7	0.0	78.3		3.1	11.5	85.1	0.4	18.9		53.5	37.7	8.6	0.3	9.6		
Total %	12.4	1.7	7.7	0.1	2.7	21.8	1.0	1.3	1.4	0.0	2.9	3.7	1.6	5.9	43.8	0.2	9.7	51.5	12.3	8.7	2.0	0.1	2.2	23.0	
Cars, PU, Vans	177	26	103	1		307	17	21	14	0		52	24	93	692	2		811	185	117	31	0		333	1503
% Cars, PU, Vans	88.1	96.3	82.4	100.0		86.7	100.0	100.0	63.6	0.0		86.7	92.3	96.9	97.2	66.7		96.9	92.5	83.0	96.9	0.0		89.0	92.5
Buses	2	0	0	0		2	0	0	0	0		0	0	0	0	1		1	0	17	0	0		17	20
%Buses	1.0	0.0	0.0	0.0		0.6	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	33.3		0.1	0.0	12.1	0.0	0.0		4.5	1.2
Heavy Trucks	22	1	22	0		45	0	0	8	0		8	2	3	20	0		25	15	7	1	1		24	102
%Heavy Trucks	10.9	3.7	17.6	0.0		12.7	0.0	0.0	36.4	0.0		13.3	7.7	3.1	2.8	0.0		3.0	7.5	5.0	3.1	100.0		6.4	6.3

Project ID: 25-430193-015
Location: E St & Fargo St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	E St Northbound					E St Southbound					Fargo St Eastbound					Fargo St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	15	1	12	0	28	0	2	1	0	3	2	6	28	0	36	11	7	2	0	20	87
8:15 AM	12	0	14	0	26	0	0	0	0	0	2	2	24	1	29	6	10	1	0	17	72
8:30 AM	12	4	4	0	20	1	3	1	0	5	3	6	22	0	31	14	12	4	0	30	86
8:45 AM	6	2	7	0	15	0	1	0	0	1	1	5	25	0	31	13	14	4	0	31	78
Total Volume	45	7	37	0	89	1	6	2	0	9	8	19	99	1	127	44	43	11	0	98	323
% App. Total	50.6	7.9	41.6	0.0	100	11.1	66.7	22.2	0.0	100	6.3	15.0	78.0	0.8	100	44.9	43.9	11.2	0.0	100	
PHF					0.795					0.450					0.882					0.790	0.928
Cars, PU, Vans	40	7	27	0	74	1	6	0	0	7	8	19	96	1	124	38	38	10	0	86	291
% Cars, PU, Vans	88.9	100.0	73.0	0.0	83.1	100.0	100.0	0.0	0.0	77.8	100.0	100.0	97.0	100.0	97.6	86.4	88.4	90.9	0.0	87.8	90.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	4.1	1.2
Heavy Trucks	5	0	10	0	15	0	0	2	0	2	0	0	3	0	3	6	1	1	0	8	28
%Heavy Trucks	11.1	0.0	27.0	0.0	16.9	0.0	0.0	100.0	0.0	22.2	0.0	0.0	3.0	0.0	2.4	13.6	2.3	9.1	0.0	8.2	8.7

PM

	E St Northbound					E St Southbound					Fargo St Eastbound					Fargo St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	16	2	5	0	23	2	0	1	0	3	2	5	36	0	43	11	6	1	0	18	87
4:30 PM	7	2	5	0	14	2	1	0	0	3	1	4	36	0	41	2	10	1	0	13	71
4:45 PM	7	0	3	0	10	2	0	4	0	6	1	4	47	0	52	12	7	1	0	20	88
5:00 PM	13	1	2	0	16	1	1	0	0	2	0	1	46	0	47	13	4	2	0	19	84
Total Volume	43	5	15	0	63	7	2	5	0	14	4	14	165	0	183	38	27	5	0	70	330
% App. Total	68.3	7.9	23.8	0.0	100	50.0	14.3	35.7	0.0	100	2.2	7.7	90.2	0.0	100	54.3	38.6	7.1	0.0	100	
PHF					0.685					0.583					0.880					0.875	0.938
Cars, PU, Vans	40	5	15	0	60	7	2	4	0	13	4	14	160	0	178	37	24	5	0	66	317
% Cars, PU, Vans	93.0	100.0	100.0	0.0	95.2	100.0	100.0	80.0	0.0	92.9	100.0	100.0	97.0	0.0	97.3	97.4	88.9	100.0	0.0	94.3	96.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	2.9	0.6
Heavy Trucks	3	0	0	0	3	0	0	1	0	1	0	0	5	0	5	1	1	0	0	2	11
%Heavy Trucks	7.0	0.0	0.0	0.0	4.8	0.0	0.0	20.0	0.0	7.1	0.0	0.0	3.0	0.0	2.7	2.6	3.7	0.0	0.0	2.9	3.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston
Control: Signalized

Project ID: 25-430193-016
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	3	19	2	1	17	13	4	0	1	1	2	0	0	0	3	0	66
6:15 AM	2	23	6	0	18	17	2	1	0	2	1	0	1	0	4	0	77
6:30 AM	1	12	7	0	20	26	3	2	1	0	0	0	1	1	4	0	78
6:45 AM	2	27	4	0	19	24	4	2	2	0	2	0	0	1	6	0	93
7:00 AM	4	26	11	0	23	16	10	1	3	1	1	0	2	0	11	0	109
7:15 AM	2	41	5	1	18	24	1	1	4	2	1	0	0	1	11	0	112
7:30 AM	2	33	6	0	24	18	2	1	1	1	2	0	1	0	15	0	106
7:45 AM	4	41	11	0	22	29	4	1	3	0	2	0	3	2	9	0	131
8:00 AM	5	59	11	1	26	18	2	1	3	0	3	0	1	1	18	0	149
8:15 AM	3	55	8	3	28	22	1	0	6	1	0	0	4	1	12	0	144
8:30 AM	1	50	13	0	24	25	1	0	0	0	0	0	3	3	11	0	131
8:45 AM	1	43	13	0	28	30	1	2	0	0	0	0	4	0	11	0	133
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	30	429	97	6	267	262	35	12	24	8	14	0	20	10	115	0	1329
APPROACH %'s :	5.34%	76.33%	17.26%	1.07%	46.35%	45.49%	6.08%	2.08%	52.17%	17.39%	30.43%	0.00%	13.79%	6.90%	79.31%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	10	207	45	4	106	95	5	3	9	1	3	0	12	5	52	0	557
PEAK HR FACTOR :	0.500	0.877	0.865	0.333	0.946	0.792	0.625	0.375	0.375	0.250	0.250	0.000	0.750	0.417	0.722	0.000	0.935
	0.875				0.857				0.464				0.863				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	30	2	0	29	35	1	3	6	2	1	0	2	0	24	0	136
4:15 PM	2	30	8	0	32	47	1	1	5	5	5	0	3	4	30	0	173
4:30 PM	2	46	5	0	30	42	4	1	1	3	1	0	5	1	19	0	160
4:45 PM	3	40	3	1	44	32	2	1	1	4	1	0	2	0	24	0	158
5:00 PM	0	36	1	0	43	41	0	1	5	1	2	0	1	0	26	0	157
5:15 PM	0	34	8	0	35	30	1	0	1	1	0	0	2	0	12	0	124
5:30 PM	1	25	3	0	37	61	0	1	1	0	1	0	3	0	25	0	158
5:45 PM	0	30	6	1	40	48	1	0	1	0	3	0	4	0	17	0	151
6:00 PM	2	33	6	0	51	54	0	3	1	1	0	0	0	0	10	0	161
6:15 PM	0	43	7	2	44	47	1	2	1	0	4	0	1	0	8	0	160
6:30 PM	0	26	2	1	35	25	0	2	2	0	0	0	1	0	12	0	106
6:45 PM	1	29	2	1	25	21	0	2	2	0	0	0	3	1	13	0	100
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	402	53	6	445	483	11	17	27	17	18	0	27	6	220	0	1744
APPROACH %'s :	2.54%	84.99%	11.21%	1.27%	46.55%	50.52%	1.15%	1.78%	43.55%	27.42%	29.03%	0.00%	10.67%	2.37%	86.96%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	7	152	17	1	149	162	7	4	12	13	9	0	11	5	99	0	648
PEAK HR FACTOR :	0.583	0.826	0.531	0.250	0.847	0.862	0.438	1.000	0.600	0.650	0.450	0.000	0.550	0.313	0.825	0.000	0.936
	0.835				0.947				0.567				0.777				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston
Control: Signalized

Project ID: 25-430193-016
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	16	2	1	16	12	4	0	1	1	1	0	0	0	2	0	58
6:15 AM	2	21	6	0	18	13	2	1	0	1	1	0	1	0	2	0	68
6:30 AM	1	10	7	0	20	21	3	2	1	0	0	0	1	1	3	0	70
6:45 AM	2	22	4	0	19	23	4	1	2	0	2	0	0	1	3	0	83
7:00 AM	4	24	11	0	23	14	7	1	3	1	1	0	1	0	8	0	98
7:15 AM	2	36	5	1	16	21	1	1	3	2	1	0	0	1	6	0	96
7:30 AM	2	30	6	0	24	16	2	1	1	1	2	0	0	0	12	0	97
7:45 AM	4	37	11	0	21	20	2	1	3	0	2	0	3	2	4	0	110
8:00 AM	5	54	11	1	24	14	1	1	3	0	3	0	1	1	14	0	133
8:15 AM	3	51	8	3	27	19	1	0	4	1	0	0	4	1	8	0	130
8:30 AM	1	49	13	0	24	22	1	0	0	0	0	0	3	3	9	0	125
8:45 AM	1	38	13	0	28	24	1	2	0	0	0	0	4	0	9	0	120
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	388	97	6	260	219	29	11	21	7	13	0	18	10	80	0	1188
APPROACH %'s :	5.58%	74.62%	18.65%	1.15%	50.10%	42.20%	5.59%	2.12%	51.22%	17.07%	31.71%	0.00%	16.67%	9.26%	74.07%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	10	192	45	4	103	79	4	3	7	1	3	0	12	5	40	0	508
PEAK HR FACTOR :	0.500	0.889	0.865	0.333	0.920	0.823	1.000	0.375	0.438	0.250	0.250	0.000	0.750	0.417	0.714	0.000	0.955
		0.884				0.859				0.458				0.891			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	29	2	0	28	34	1	3	5	2	1	0	2	0	23	0	131
4:15 PM	2	30	7	0	31	44	1	1	4	5	5	0	3	3	28	0	164
4:30 PM	2	45	5	0	28	41	3	1	1	3	1	0	5	1	18	0	154
4:45 PM	3	37	3	1	43	31	1	1	1	4	1	0	2	0	23	0	151
5:00 PM	0	34	1	0	42	41	0	1	3	1	2	0	1	0	24	0	150
5:15 PM	0	34	8	0	35	30	1	0	1	1	0	0	2	0	11	0	123
5:30 PM	1	25	3	0	36	60	0	1	1	0	1	0	3	0	22	0	153
5:45 PM	0	29	6	1	39	47	0	0	1	0	3	0	4	0	16	0	146
6:00 PM	2	33	5	0	48	53	0	3	1	1	0	0	0	0	8	0	154
6:15 PM	0	41	6	2	42	47	1	2	0	0	4	0	1	0	5	0	151
6:30 PM	0	26	2	1	33	24	0	2	2	0	0	0	1	0	11	0	102
6:45 PM	1	28	2	1	25	21	0	1	2	0	0	0	3	0	11	0	95
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	391	50	6	430	473	8	16	22	17	18	0	27	4	200	0	1674
APPROACH %'s :	2.61%	85.19%	10.89%	1.31%	46.39%	51.02%	0.86%	1.73%	38.60%	29.82%	31.58%	0.00%	11.69%	1.73%	86.58%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	7	146	16	1	144	157	5	4	9	13	9	0	11	4	93	0	619
PEAK HR FACTOR :	0.583	0.811	0.571	0.250	0.837	0.892	0.417	1.000	0.563	0.650	0.450	0.000	0.550	0.333	0.830	0.000	0.944
		0.817				0.923				0.554				0.794			

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston
Control: Signalized

Project ID: 25-430193-016
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	5
8:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	5	0	0	0	0	0	0	0	0	13	0	19
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	2	0	0	0	0	0	0	0	0	4	0	7
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.583
		0.250				0.500								0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	1	5	0	0	0	0	0	0	0	0	11	0	18
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	16.67%	83.33%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.625
		0.250				0.500								0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston
Control: Signalized

Project ID: 25-430193-016
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	3	0	0	1	1	0	0	0	0	1	0	0	0	0	0	7
6:15 AM	0	2	0	0	0	3	0	0	0	1	0	0	0	0	2	0	8
6:30 AM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
6:45 AM	0	5	0	0	0	1	0	1	0	0	0	0	0	0	3	0	10
7:00 AM	0	2	0	0	0	2	3	0	0	0	0	0	1	0	1	0	9
7:15 AM	0	5	0	0	2	3	0	0	1	0	0	0	0	0	4	0	15
7:30 AM	0	3	0	0	0	2	0	0	0	0	0	0	1	0	2	0	8
7:45 AM	0	4	0	0	1	7	2	0	0	0	0	0	0	0	2	0	16
8:00 AM	0	4	0	0	2	3	1	0	0	0	0	0	0	0	4	0	14
8:15 AM	0	4	0	0	1	2	0	0	2	0	0	0	0	0	2	0	11
8:30 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	2	0	6
8:45 AM	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	40	0	0	7	38	6	1	3	1	1	0	2	0	22	0	122
APPROACH %'s :	2.44%	97.56%	0.00%	0.00%	13.46%	73.08%	11.54%	1.92%	60.00%	20.00%	20.00%	0.00%	8.33%	0.00%	91.67%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	14	0	0	3	14	1	0	2	0	0	0	0	0	8	0	42
PEAK HR FACTOR :	0.000	0.700	0.000	0.000	0.375	0.583	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.750
	0.700				0.750				0.250				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3
4:15 PM	0	0	1	0	0	3	0	0	1	0	0	0	0	1	2	0	8
4:30 PM	0	1	0	0	2	0	1	0	0	0	0	0	0	0	1	0	5
4:45 PM	0	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0	5
5:00 PM	0	2	0	0	1	0	0	0	2	0	0	0	0	0	1	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
5:45 PM	0	1	0	0	1	1	1	0	0	0	0	0	0	0	1	0	5
6:00 PM	0	0	1	0	3	0	0	0	0	0	0	0	0	0	2	0	6
6:15 PM	0	2	1	0	2	0	0	0	1	0	0	0	0	0	0	0	6
6:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	10	3	0	14	5	3	1	5	0	0	0	0	2	9	0	52
APPROACH %'s :	0.00%	76.92%	23.08%	0.00%	60.87%	21.74%	13.04%	4.35%	100.00%	0.00%	0.00%	0.00%	0.00%	18.18%	81.82%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	5	1	0	4	4	2	0	3	0	0	0	0	1	4	0	24
PEAK HR FACTOR :	0.000	0.625	0.250	0.000	0.500	0.333	0.500	0.000	0.375	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.750
	0.750				0.833				0.375				0.417				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston
Control: Signalized

Project ID: 25-430193-016
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				Fargo St				Fargo St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	20	3	0	0	1	0	0	0	0	0	0	1	0	0	0	25
APPROACH %'s :	0.00%	86.96%	13.04%	0.00%	0.00%	100.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	9	2	0	0	0	0	0	0	0	0	0	1	0	0	0	12
PEAK HR FACTOR :	0.000	0.450	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500
	0.550												0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	0.5	0.5	0	0.5	0.5	1	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	3
5:00 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	1	0	5
5:15 PM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	2	0	7
5:30 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
6:00 PM	0	2	0	0	1	4	0	0	0	0	0	0	0	0	0	0	7
6:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	0	0	1	23	0	0	0	0	0	0	1	0	6	0	40
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	4.17%	95.83%	0.00%	0.00%					14.29%	0.00%	85.71%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	4	0	0	0	6	0	0	0	0	0	0	0	0	3	0	13
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.650
	0.500				0.500								0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Fargo St
City: Boston

Project ID: 25-430193-016
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		Fargo St		Fargo St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	1	0	4	0	0	1	0	6
6:15 AM	0	2	1	2	3	0	1	1	10
6:30 AM	2	2	2	2	1	1	1	0	11
6:45 AM	2	6	3	6	6	1	4	2	30
7:00 AM	0	3	0	5	8	4	5	4	29
7:15 AM	1	4	2	2	11	9	5	1	35
7:30 AM	3	1	4	6	9	1	6	2	32
7:45 AM	0	6	4	4	12	2	10	3	41
8:00 AM	4	5	2	6	10	2	16	4	49
8:15 AM	1	8	1	6	11	1	18	0	46
8:30 AM	3	0	3	8	11	4	14	8	51
8:45 AM	4	4	7	8	17	0	19	5	64
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	20	42	29	59	99	25	100	30	404
APPROACH %'s :	32.26%	67.74%	32.95%	67.05%	79.84%	20.16%	76.92%	23.08%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	12	17	13	28	49	7	67	17	210
PEAK HR FACTOR :	0.750	0.531	0.464	0.875	0.721	0.438	0.882	0.531	0.820
	0.806		0.683		0.824		0.875		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	2	3	1	1	1	4	9	7	28
4:15 PM	2	3	9	3	3	4	9	8	41
4:30 PM	5	3	9	3	2	8	9	8	47
4:45 PM	2	0	6	2	3	2	5	9	29
5:00 PM	5	1	5	4	5	9	12	8	49
5:15 PM	2	2	8	2	1	8	6	16	45
5:30 PM	3	1	7	2	7	9	6	10	45
5:45 PM	2	2	8	1	4	11	1	14	43
6:00 PM	3	1	8	2	9	9	1	13	46
6:15 PM	0	2	2	4	4	7	13	5	37
6:30 PM	1	4	3	1	5	2	3	7	26
6:45 PM	0	0	1	1	3	9	4	11	29
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	27	22	67	26	47	82	78	116	465
APPROACH %'s :	55.10%	44.90%	72.04%	27.96%	36.43%	63.57%	40.21%	59.79%	
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	14	7	29	12	13	23	35	33	166
PEAK HR FACTOR :	0.700	0.583	0.806	0.750	0.650	0.639	0.729	0.917	0.847
	0.656		0.854		0.643		0.850		

Prepared by National Data & Surveying Services

D St & Fargo St

Peak Hour Turning Movement Count

ID: 25-430193-016
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (D St)

AM	5	95	106	3	271	AM
NOON	0	0	0	0	0	NOON
PM	7	162	149	4	267	PM
	0.5	0.5	1	0		

EASTBOUND (Fargo St)

AM	NOON	PM	
20	0	19	
0	0	0	0
9	0	12	0.5
1	0	13	0.5
3	0	9	1
AM	NOON	PM	

WESTBOUND (Fargo St)

PM	NOON	AM	
99	0	52	1
5	0	5	0.5
11	0	12	0.5
0	0	0	0
179	0	152	
PM	NOON	AM	

CONTROL

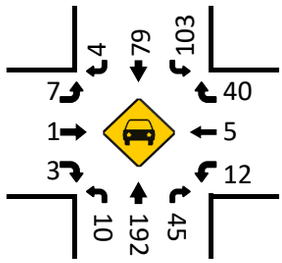
Signalized

TEV	557 AM	0 NOON	648 PM
PHF	0.93		0.94

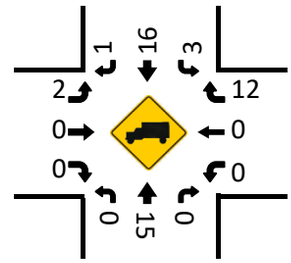
NORTHBOUND (D St)

	0	0	2	0		
PM	183	1	7	152	17	PM
NOON	0	0	0	0	0	NOON
AM	114	4	10	207	45	AM

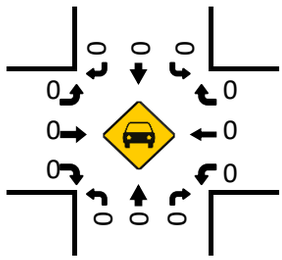
Cars (AM)



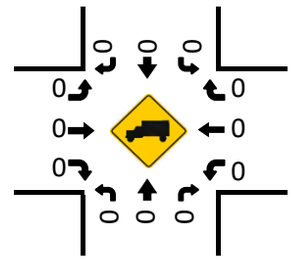
Total Trucks (AM)



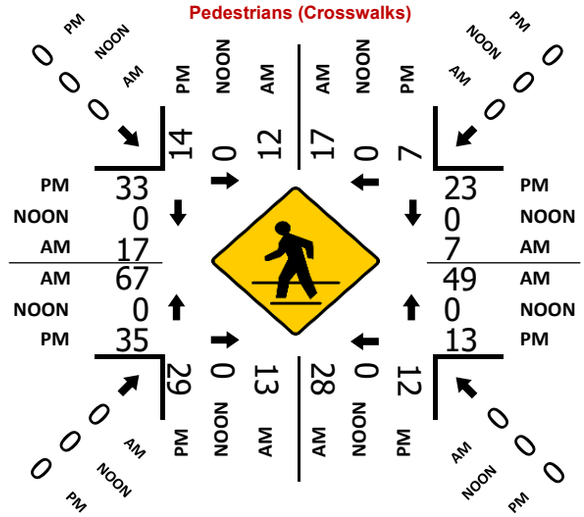
Cars (NOON)



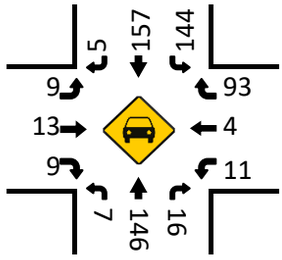
Total Trucks (NOON)



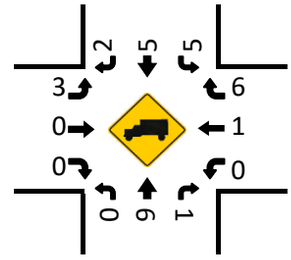
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-016
Location: D St & Fargo St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						Fargo St Eastbound						Fargo St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	3	19	2	1	4	25	17	13	4	0	1	34	1	1	2	0	1	4	0	0	3	0	0	3	66
6:15 AM	2	23	6	0	3	31	18	17	2	1	2	38	0	2	1	0	2	3	1	0	4	0	3	5	77
6:30 AM	1	12	7	0	4	20	20	26	3	2	4	51	1	0	0	0	1	1	1	1	4	0	2	6	78
6:45 AM	2	27	4	0	9	33	19	24	4	2	8	49	2	0	2	0	6	4	0	1	6	0	7	7	93
Total	8	81	19	1	20	109	74	80	13	5	15	172	4	3	5	0	10	12	2	2	17	0	12	21	314
7:00 AM	4	26	11	0	5	41	23	16	10	1	3	50	3	1	1	0	9	5	2	0	11	0	12	13	109
7:15 AM	2	41	5	1	4	49	18	24	1	1	5	44	4	2	1	0	6	7	0	1	11	0	20	12	112
7:30 AM	2	33	6	0	10	41	24	18	2	1	4	45	1	1	2	0	8	4	1	0	15	0	10	16	106
7:45 AM	4	41	11	0	8	56	22	29	4	1	6	56	3	0	2	0	13	5	3	2	9	0	14	14	131
Total	12	141	33	1	27	187	87	87	17	4	18	195	11	4	6	0	36	21	6	3	46	0	56	55	458
8:00 AM	5	59	11	1	8	76	26	18	2	1	9	47	3	0	3	0	20	6	1	1	18	0	12	20	149
8:15 AM	3	55	8	3	7	69	28	22	1	0	9	51	6	1	0	0	18	7	4	1	12	0	12	17	144
8:30 AM	1	50	13	0	11	64	24	25	1	0	3	50	0	0	0	0	22	0	3	3	11	0	15	17	131
8:45 AM	1	43	13	0	15	57	28	30	1	2	8	61	0	0	0	0	24	0	4	0	11	0	17	15	133
Total	10	207	45	4	41	266	106	95	5	3	29	209	9	1	3	0	84	13	12	5	52	0	56	69	557
BREAK																									
4:00 PM	1	30	2	0	2	33	29	35	1	3	5	68	6	2	1	0	16	9	2	0	24	0	5	26	136
4:15 PM	2	30	8	0	12	40	32	47	1	1	5	81	5	5	5	0	17	15	3	4	30	0	7	37	173
4:30 PM	2	46	5	0	12	53	30	42	4	1	8	77	1	3	1	0	17	5	5	1	19	0	10	25	160
4:45 PM	3	40	3	1	8	47	44	32	2	1	2	79	1	4	1	0	14	6	2	0	24	0	5	26	158
Total	8	146	18	1	34	173	135	156	8	6	20	305	13	14	8	0	64	35	12	5	97	0	27	114	627
5:00 PM	0	36	1	0	9	37	43	41	0	1	6	85	5	1	2	0	20	8	1	0	26	0	14	27	157
5:15 PM	0	34	8	0	10	42	35	30	1	0	4	66	1	1	0	0	22	2	2	0	12	0	9	14	124
5:30 PM	1	25	3	0	9	29	37	61	0	1	4	99	1	0	1	0	16	2	3	0	25	0	16	28	158
5:45 PM	0	30	6	1	9	37	40	48	1	0	4	89	1	0	3	0	15	4	4	0	17	0	15	21	151
Total	1	125	18	1	37	145	155	180	2	2	18	339	8	2	6	0	73	16	10	0	80	0	54	90	590
6:00 PM	2	33	6	0	10	41	51	54	0	3	4	108	1	1	0	0	14	2	0	0	10	0	18	10	161
6:15 PM	0	43	7	2	6	52	44	47	1	2	2	94	1	0	4	0	18	5	1	0	8	0	11	9	160
6:30 PM	0	26	2	1	4	29	35	25	0	2	5	62	2	0	0	0	10	2	1	0	12	0	7	13	106
6:45 PM	1	29	2	1	2	33	25	21	0	2	0	48	2	0	0	0	15	2	3	1	13	0	12	17	100
Total	3	131	17	4	22	155	155	147	1	9	11	312	6	1	4	0	57	11	5	1	43	0	48	49	527
Grand Total	42	831	150	12	181	1035	712	745	46	29	111	1532	51	25	32	0	324	108	47	16	335	0	253	398	3073
Apprch %	4.1	80.3	14.5	1.2	17.5		46.5	48.6	3.0	1.9	7.2		47.2	23.1	29.6	0.0	300.0		11.8	4.0	84.2	0.0	63.6		
Total %	1.4	27.0	4.9	0.4	5.9	33.7	23.2	24.2	1.5	0.9	3.6	49.9	1.7	0.8	1.0	0.0	10.5	3.5	1.5	0.5	10.9	0.0	8.2	13.0	
Cars, PU, Vans	41	779	147	12		979	690	692	37	27		1446	43	24	31	0		98	45	14	280	0		339	2862
% Cars, PU, Vans	97.6	93.7	98.0	100.0		94.6	96.9	92.9	80.4	93.1		94.4	84.3	96.0	96.9	0.0		90.7	95.7	87.5	83.6	0.0		85.2	93.1
Buses	0	2	0	0		2	1	10	0	0		11	0	0	0	0		0	0	0	24	0		24	37
%Buses	0.0	0.2	0.0	0.0		0.2	0.1	1.3	0.0	0.0		0.7	0.0	0.0	0.0	0.0		0.0	0.0	0.0	7.2	0.0		6.0	1.2
Heavy Trucks	1	50	3	0		54	21	43	9	2		75	8	1	1	0		10	2	2	31	0		35	174
%Heavy Trucks	2.4	6.0	2.0	0.0		5.2	2.9	5.8	19.6	6.9		4.9	15.7	4.0	3.1	0.0		9.3	4.3	12.5	9.3	0.0		8.8	5.7

Project ID: 25-430193-016
Location: D St & Fargo St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					Fargo St Eastbound					Fargo St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	5	59	11	1	76	26	18	2	1	47	3	0	3	0	6	1	1	18	0	20	149
8:15 AM	3	55	8	3	69	28	22	1	0	51	6	1	0	0	7	4	1	12	0	17	144
8:30 AM	1	50	13	0	64	24	25	1	0	50	0	0	0	0	0	3	3	11	0	17	131
8:45 AM	1	43	13	0	57	28	30	1	2	61	0	0	0	0	0	4	0	11	0	15	133
Total Volume	10	207	45	4	266	106	95	5	3	209	9	1	3	0	13	12	5	52	0	69	557
% App. Total	3.8	77.8	16.9	1.5	100	50.7	45.5	2.4	1.4	100	69.2	7.7	23.1	0.0	100	17.4	7.2	75.4	0.0	100	
PHF					0.875					0.857					0.464					0.863	0.935
Cars, PU, Vans	10	192	45	4	251	103	79	4	3	189	7	1	3	0	11	12	5	40	0	57	508
% Cars, PU, Vans	100.0	92.8	100.0	100.0	94.4	97.2	83.2	80.0	100.0	90.4	77.8	100.0	100.0	0.0	84.6	100.0	100.0	76.9	0.0	82.6	91.2
Buses	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	4	0	4	7
%Buses	0.0	0.5	0.0	0.0	0.4	0.0	2.1	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	5.8	1.3
Heavy Trucks	0	14	0	0	14	3	14	1	0	18	2	0	0	0	2	0	0	8	0	8	42
%Heavy Trucks	0.0	6.8	0.0	0.0	5.3	2.8	14.7	20.0	0.0	8.6	22.2	0.0	0.0	0.0	15.4	0.0	0.0	15.4	0.0	11.6	7.5

PM

	D St Northbound					D St Southbound					Fargo St Eastbound					Fargo St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	2	30	8	0	40	32	47	1	1	81	5	5	5	0	15	3	4	30	0	37	173
4:30 PM	2	46	5	0	53	30	42	4	1	77	1	3	1	0	5	5	1	19	0	25	160
4:45 PM	3	40	3	1	47	44	32	2	1	79	1	4	1	0	6	2	0	24	0	26	158
5:00 PM	0	36	1	0	37	43	41	0	1	85	5	1	2	0	8	1	0	26	0	27	157
Total Volume	7	152	17	1	177	149	162	7	4	322	12	13	9	0	34	11	5	99	0	115	648
% App. Total	4.0	85.9	9.6	0.6	100	46.3	50.3	2.2	1.2	100	35.3	38.2	26.5	0.0	100	9.6	4.3	86.1	0.0	100	
PHF					0.835					0.947					0.567					0.777	0.936
Cars, PU, Vans	7	146	16	1	170	144	157	5	4	310	9	13	9	0	31	11	4	93	0	108	619
% Cars, PU, Vans	100.0	96.1	94.1	100.0	96.0	96.6	96.9	71.4	100.0	96.3	75.0	100.0	100.0	0.0	91.2	100.0	80.0	93.9	0.0	93.9	95.5
Buses	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	2	0	2	5
%Buses	0.0	0.7	0.0	0.0	0.6	0.7	0.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.7	0.8
Heavy Trucks	0	5	1	0	6	4	4	2	0	10	3	0	0	0	3	0	1	4	0	5	24
%Heavy Trucks	0.0	3.3	5.9	0.0	3.4	2.7	2.5	28.6	0.0	3.1	25.0	0.0	0.0	0.0	8.8	0.0	20.0	4.0	0.0	4.3	3.7

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-017
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	7	11	2	0	22	17	11	0	10	44	14	3	3	43	26	0	213
6:15 AM	6	18	4	1	37	22	8	0	11	54	13	0	2	27	43	1	247
6:30 AM	3	12	3	0	29	28	11	0	8	36	22	2	3	59	44	0	260
6:45 AM	10	24	4	0	48	27	15	0	8	42	18	0	2	34	49	0	281
7:00 AM	17	19	1	1	37	28	11	1	13	46	17	0	3	58	58	0	310
7:15 AM	18	37	6	0	42	32	21	0	9	44	11	1	3	44	48	0	316
7:30 AM	7	32	3	0	26	27	17	0	9	55	16	2	2	52	65	0	313
7:45 AM	21	34	7	0	54	37	22	0	23	51	13	2	9	55	63	0	391
8:00 AM	14	56	7	0	43	28	27	0	16	53	15	4	3	61	70	0	397
8:15 AM	24	44	4	0	39	32	25	0	17	57	16	1	0	74	61	0	394
8:30 AM	27	33	2	0	52	38	21	0	9	68	12	0	2	72	75	0	411
8:45 AM	17	29	9	0	52	40	19	0	15	56	19	1	3	62	58	0	380
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	171	349	52	2	481	356	208	1	148	606	186	16	35	641	660	1	3913
APPROACH %'s :	29.79%	60.80%	9.06%	0.35%	45.98%	34.03%	19.89%	0.10%	15.48%	63.39%	19.46%	1.67%	2.62%	47.94%	49.36%	0.07%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	86	167	20	0	188	135	95	0	65	229	56	7	14	262	269	0	1593
PEAK HR FACTOR :	0.796	0.746	0.714	0.000	0.870	0.888	0.880	0.000	0.707	0.842	0.875	0.438	0.389	0.885	0.897	0.000	0.969
	0.886				0.925				0.981				0.914				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	45	10	2	63	42	14	0	28	84	23	2	0	41	24	0	387
4:15 PM	21	41	5	0	81	54	29	0	25	113	24	5	3	39	49	0	489
4:30 PM	22	38	3	0	75	55	29	0	30	96	20	2	5	34	61	0	470
4:45 PM	21	38	4	0	66	49	24	0	27	86	32	5	5	41	44	0	442
5:00 PM	23	51	6	0	61	44	23	0	31	103	28	9	1	42	42	0	464
5:15 PM	11	28	2	1	85	30	17	0	28	114	28	3	5	39	41	0	432
5:30 PM	17	29	4	0	95	65	29	0	27	110	35	2	2	37	35	0	487
5:45 PM	13	36	3	0	65	50	24	0	29	89	33	3	6	40	41	0	432
6:00 PM	13	30	2	0	68	74	25	0	27	88	28	2	4	41	40	0	442
6:15 PM	19	26	6	0	60	50	26	0	28	118	39	3	3	54	24	1	457
6:30 PM	14	21	5	1	56	26	24	0	24	113	35	4	1	60	27	0	411
6:45 PM	15	33	4	0	40	29	27	0	27	78	16	5	2	33	25	0	334
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	198	416	54	4	815	568	291	0	331	1192	341	45	37	501	453	1	5247
APPROACH %'s :	29.46%	61.90%	8.04%	0.60%	48.69%	33.93%	17.38%	0.00%	17.34%	62.44%	17.86%	2.36%	3.73%	50.50%	45.67%	0.10%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	87	168	18	0	283	202	105	0	113	398	104	21	14	156	196	0	1865
PEAK HR FACTOR :	0.946	0.824	0.750	0.000	0.873	0.918	0.905	0.000	0.911	0.881	0.813	0.583	0.700	0.929	0.803	0.000	0.953
	0.853				0.899				0.930				0.915				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-017
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	7	8	1	0	19	15	10	0	8	39	14	3	3	41	23	0	191
6:15 AM	5	16	4	1	34	21	8	0	10	50	11	0	1	23	41	0	225
6:30 AM	3	11	1	0	27	26	10	0	8	32	18	2	3	54	42	0	237
6:45 AM	7	17	4	0	44	27	14	0	8	38	18	0	1	30	44	0	252
7:00 AM	15	16	1	1	35	28	10	1	12	40	15	0	0	46	52	0	272
7:15 AM	15	30	5	0	37	28	18	0	9	40	10	1	3	36	47	0	279
7:30 AM	6	28	2	0	23	26	15	0	9	47	16	2	1	43	62	0	280
7:45 AM	17	30	6	0	49	32	22	0	23	48	10	2	5	49	61	0	354
8:00 AM	12	51	6	0	40	24	26	0	16	50	13	4	2	53	67	0	364
8:15 AM	21	36	4	0	37	29	24	0	16	49	15	1	0	67	58	0	357
8:30 AM	27	31	1	0	45	36	20	0	8	61	12	0	1	61	63	0	366
8:45 AM	16	25	7	0	51	37	18	0	15	51	18	1	1	57	45	0	342
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	151	299	42	2	441	329	195	1	142	545	170	16	21	560	605	0	3519
APPROACH %'s :	30.57%	60.53%	8.50%	0.40%	45.65%	34.06%	20.19%	0.10%	16.27%	62.43%	19.47%	1.83%	1.77%	47.22%	51.01%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	77	148	17	0	171	121	92	0	63	208	50	7	8	230	249	0	1441
PEAK HR FACTOR :	0.713	0.725	0.708	0.000	0.872	0.840	0.885	0.000	0.685	0.852	0.833	0.438	0.400	0.858	0.929	0.000	0.984
	0.877				0.932				0.988				0.974				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	45	9	2	61	40	14	0	28	80	23	2	0	35	22	0	368
4:15 PM	20	39	5	0	78	52	28	0	23	108	23	5	2	34	48	0	465
4:30 PM	22	36	3	0	71	55	29	0	30	91	18	2	3	33	58	0	451
4:45 PM	19	37	3	0	66	47	21	0	27	79	31	5	5	39	44	0	423
5:00 PM	22	48	5	0	61	44	23	0	31	98	27	9	1	36	42	0	447
5:15 PM	10	27	2	1	83	30	16	0	28	113	28	3	5	36	39	0	421
5:30 PM	16	28	3	0	92	64	29	0	27	105	34	2	2	34	32	0	468
5:45 PM	13	35	2	0	63	49	24	0	29	82	30	3	6	36	40	0	412
6:00 PM	13	29	2	0	65	73	25	0	26	84	26	2	4	36	39	0	424
6:15 PM	16	25	4	0	55	50	24	0	28	112	37	3	3	50	24	1	432
6:30 PM	13	20	5	1	55	25	21	0	23	108	33	4	1	55	27	0	391
6:45 PM	14	30	4	0	39	28	25	0	27	74	16	5	2	30	25	0	319
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	185	399	47	4	789	557	279	0	327	1134	326	45	34	454	440	1	5021
APPROACH %'s :	29.13%	62.83%	7.40%	0.63%	48.55%	34.28%	17.17%	0.00%	17.85%	61.90%	17.79%	2.46%	3.66%	48.87%	47.36%	0.11%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	83	160	16	0	276	198	101	0	111	376	99	21	11	142	192	0	1786
PEAK HR FACTOR :	0.943	0.833	0.800	0.000	0.885	0.900	0.871	0.000	0.895	0.870	0.798	0.583	0.550	0.910	0.828	0.000	0.960
	0.863				0.910				0.920				0.918				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-017
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	1	0	0	0	0	2	0	0	0	2	0	0	6
6:15 AM	0	0	0	0	1	1	0	0	0	2	0	0	0	4	0	0	8
6:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
6:45 AM	1	0	0	0	1	0	0	0	0	2	0	0	0	2	0	0	6
7:00 AM	1	1	0	0	0	0	0	0	0	1	0	0	0	7	1	0	11
7:15 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	8
7:30 AM	0	1	0	0	0	0	1	0	0	3	0	0	0	7	0	0	12
7:45 AM	2	1	0	0	2	1	0	0	0	2	1	0	0	4	0	0	13
8:00 AM	0	0	1	0	0	1	0	0	0	3	0	0	0	7	0	0	12
8:15 AM	1	1	0	0	0	0	0	0	0	3	1	0	0	5	0	0	11
8:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	9	1	0	13
8:45 AM	1	1	0	0	0	0	0	0	0	2	0	0	0	4	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	6	1	0	5	3	1	0	0	27	2	0	0	59	2	0	113
APPROACH %'s :	50.00%	42.86%	7.14%	0.00%	55.56%	33.33%	11.11%	0.00%	0.00%	93.10%	6.90%	0.00%	0.00%	96.72%	3.28%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	3	2	1	0	2	2	0	0	0	11	2	0	0	25	1	0	49
PEAK HR FACTOR :	0.375	0.500	0.250	0.000	0.250	0.500	0.000	0.000	0.000	0.917	0.500	0.000	0.000	0.694	0.250	0.000	0.942
	0.500				0.333				0.813				0.650				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	1	1	0	0	0	3	0	0	0	5	0	0	11
4:15 PM	0	0	0	0	3	0	0	0	2	3	1	0	0	3	0	0	12
4:30 PM	0	0	0	0	1	0	0	0	0	2	1	0	0	1	1	0	6
4:45 PM	2	0	0	0	0	0	2	0	0	5	0	0	0	2	0	0	11
5:00 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	6	0	0	10
5:15 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	5
5:30 PM	1	1	0	0	2	1	0	0	0	4	0	0	0	3	0	0	12
5:45 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	3	0	0	9
6:00 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	0	9
6:15 PM	3	0	0	0	1	0	2	0	0	4	0	0	0	4	0	0	14
6:30 PM	1	0	0	0	0	0	2	0	1	3	1	0	0	2	0	0	10
6:45 PM	0	1	0	0	0	0	2	0	0	4	0	0	0	3	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	2	0	0	8	2	8	0	3	41	4	0	0	40	1	0	119
APPROACH %'s :	83.33%	16.67%	0.00%	0.00%	44.44%	11.11%	44.44%	0.00%	6.25%	85.42%	8.33%	0.00%	0.00%	97.56%	2.44%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	3	0	0	0	4	0	2	0	2	13	2	0	0	12	1	0	39
PEAK HR FACTOR :	0.375	0.000	0.000	0.000	0.333	0.000	0.250	0.000	0.250	0.650	0.500	0.000	0.000	0.500	0.250	0.000	0.813
	0.375				0.500				0.708				0.542				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-017
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	2	1	0	2	2	1	0	2	3	0	0	0	0	3	0	16
6:15 AM	1	2	0	0	2	0	0	0	1	2	2	0	1	0	2	1	14
6:30 AM	0	1	2	0	2	2	1	0	0	3	4	0	0	1	2	0	18
6:45 AM	2	7	0	0	3	0	1	0	0	2	0	0	1	2	5	0	23
7:00 AM	1	2	0	0	2	0	1	0	1	5	2	0	3	5	5	0	27
7:15 AM	2	7	1	0	5	4	3	0	0	1	1	0	0	4	1	0	29
7:30 AM	1	3	1	0	3	1	1	0	0	5	0	0	1	2	3	0	21
7:45 AM	2	3	1	0	3	4	0	0	0	1	2	0	4	2	2	0	24
8:00 AM	2	5	0	0	3	3	1	0	0	0	2	0	1	1	3	0	21
8:15 AM	2	7	0	0	2	3	1	0	1	5	0	0	0	2	3	0	26
8:30 AM	0	2	1	0	7	2	1	0	1	4	0	0	1	2	11	0	32
8:45 AM	0	3	2	0	1	3	1	0	0	3	1	0	2	1	13	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	13	44	9	0	35	24	12	0	6	34	14	0	14	22	53	1	281
APPROACH %'s :	19.70%	66.67%	13.64%	0.00%	49.30%	33.80%	16.90%	0.00%	11.11%	62.96%	25.93%	0.00%	15.56%	24.44%	58.89%	1.11%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	6	17	2	0	15	12	3	0	2	10	4	0	6	7	19	0	103
PEAK HR FACTOR :	0.750	0.607	0.500	0.000	0.536	0.750	0.750	0.000	0.500	0.500	0.500	0.000	0.375	0.875	0.432	0.000	0.805
	0.694				0.750				0.667				0.571				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	1	0	1	1	0	0	0	1	0	0	0	1	2	0	8
4:15 PM	1	2	0	0	0	2	1	0	0	2	0	0	1	2	1	0	12
4:30 PM	0	2	0	0	3	0	0	0	0	3	1	0	2	0	2	0	13
4:45 PM	0	1	1	0	0	2	1	0	0	2	1	0	0	0	0	0	8
5:00 PM	0	3	1	0	0	0	0	0	0	2	1	0	0	0	0	0	7
5:15 PM	0	1	0	0	2	0	1	0	0	0	0	0	0	0	2	0	6
5:30 PM	0	0	1	0	1	0	0	0	0	1	1	0	0	0	3	0	7
5:45 PM	0	1	1	0	2	1	0	0	0	1	3	0	0	1	1	0	11
6:00 PM	0	1	0	0	3	1	0	0	1	1	1	0	0	0	1	0	9
6:15 PM	0	1	2	0	4	0	0	0	0	2	2	0	0	0	0	0	11
6:30 PM	0	1	0	0	1	1	1	0	0	2	1	0	0	3	0	0	10
6:45 PM	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	15	7	0	18	9	4	0	1	17	11	0	3	7	12	0	107
APPROACH %'s :	12.00%	60.00%	28.00%	0.00%	58.06%	29.03%	12.90%	0.00%	3.45%	58.62%	37.93%	0.00%	13.64%	31.82%	54.55%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	1	8	2	0	3	4	2	0	0	9	3	0	3	2	3	0	40
PEAK HR FACTOR :	0.250	0.667	0.500	0.000	0.250	0.500	0.500	0.000	0.000	0.750	0.750	0.000	0.375	0.250	0.375	0.000	0.769
	0.688				0.750				0.750				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston
Control: Signalized

Project ID: 25-430193-017
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				Summer St				Summer St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
7:00 AM	1	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	6
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	2	1	0	5
7:45 AM	2	0	0	0	0	0	0	0	0	1	0	0	0	3	1	0	7
8:00 AM	0	2	1	0	0	0	0	0	0	2	0	0	0	1	1	0	7
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
8:30 AM	0	2	0	0	1	0	0	0	0	1	0	0	0	3	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	10	1	0	1	0	1	0	0	8	0	0	0	21	6	0	53
APPROACH %'s :	31.25%	62.50%	6.25%	0.00%	50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	77.78%	22.22%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	2	4	1	0	1	0	0	0	0	4	0	0	0	12	2	0	26
PEAK HR FACTOR :	0.250	0.500	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.600	0.500	0.000	0.929
	0.583				0.250				0.500				0.700				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1.5	1	0.5	0	1	2	0	0	0.5	1.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	0	1	0	0	3	0	0	0	2	0	0	7
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	0	2	0	0	1	1	0	0	0	0	0	0	6
4:45 PM	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	5
5:00 PM	1	1	0	0	1	1	0	0	0	2	2	0	0	0	0	0	8
5:15 PM	2	1	0	0	0	2	0	0	0	4	1	0	2	1	0	0	13
5:30 PM	1	0	0	0	1	0	0	0	1	2	2	0	0	1	0	0	8
5:45 PM	1	0	0	0	2	2	0	0	0	0	0	0	1	0	0	0	6
6:00 PM	1	1	0	0	0	5	0	0	0	1	0	0	0	2	0	0	10
6:15 PM	0	0	0	0	0	2	0	0	0	6	0	0	0	0	0	0	8
6:30 PM	0	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	5
6:45 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	7	0	0	6	17	1	0	2	24	5	0	3	8	0	0	79
APPROACH %'s :	46.15%	53.85%	0.00%	0.00%	25.00%	70.83%	4.17%	0.00%	6.45%	77.42%	16.13%	0.00%	27.27%	72.73%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	1	3	0	0	1	5	0	0	1	6	2	0	0	0	0	0	19
PEAK HR FACTOR :	0.250	0.375	0.000	0.000	0.250	0.625	0.000	0.000	0.250	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.594
	0.500				0.750				0.563								

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Summer St
City: Boston

Project ID: 25-430193-017
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		Summer St		Summer St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	1	1	0	0	0	0	2	4
6:15 AM	2	2	2	5	0	1	1	2	15
6:30 AM	0	2	5	5	1	1	1	0	15
6:45 AM	3	5	5	5	1	1	3	0	23
7:00 AM	2	5	11	7	2	2	2	2	33
7:15 AM	3	6	9	5	4	6	4	2	39
7:30 AM	3	6	6	9	4	0	4	2	34
7:45 AM	2	5	7	7	7	3	6	2	39
8:00 AM	5	10	10	12	5	3	15	6	66
8:15 AM	9	18	15	17	2	8	14	5	88
8:30 AM	6	20	19	19	4	11	12	8	99
8:45 AM	7	15	30	11	9	3	10	13	98
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	42	95	120	102	39	39	72	44	553
APPROACH %'s :	30.66%	69.34%	54.05%	45.95%	50.00%	50.00%	62.07%	37.93%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	22	53	51	55	18	25	47	21	292
PEAK HR FACTOR :	0.611	0.663	0.671	0.724	0.643	0.568	0.783	0.656	
	0.694		0.697		0.717		0.810		0.737

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	6	3	9	7	3	3	4	8	43
4:15 PM	5	5	7	15	10	4	14	5	65
4:30 PM	5	5	10	12	3	2	7	5	49
4:45 PM	4	7	11	15	4	0	9	8	58
5:00 PM	22	2	16	24	4	4	20	4	96
5:15 PM	15	5	31	12	7	4	7	5	86
5:30 PM	21	5	20	3	8	5	7	6	75
5:45 PM	18	3	16	4	3	5	9	8	66
6:00 PM	12	5	12	6	6	6	9	13	69
6:15 PM	2	4	12	6	5	2	11	2	44
6:30 PM	10	8	8	8	9	3	9	6	61
6:45 PM	12	2	2	2	1	5	4	2	30
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	132	54	154	114	63	43	110	72	742
APPROACH %'s :	70.97%	29.03%	57.46%	42.54%	59.43%	40.57%	60.44%	39.56%	
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	36	19	44	66	21	10	50	22	268
PEAK HR FACTOR :	0.409	0.679	0.688	0.688	0.525	0.625	0.625	0.688	
	0.573		0.688		0.554		0.750		0.698

Prepared by National Data & Surveying Services

D St & Summer St

Peak Hour Turning Movement Count

ID: 25-430193-017
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS

AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM

SOUTHBOUND (D St)

AM	95	135	188	0	501	AM
NOON	0	0	0	0	0	NOON
PM	105	202	283	0	477	PM
	0.5	1	1.5	0		

EASTBOUND (Summer St)

AM	NOON	PM	
450	0	369	
7	0	21	0
65	0	113	1
229	0	398	2
56	0	104	0

WESTBOUND (Summer St)

PM	NOON	AM	
196	0	269	1
156	0	262	1.5
14	0	14	0.5
0	0	0	0
699	0	437	

NORTHBOUND (D St)

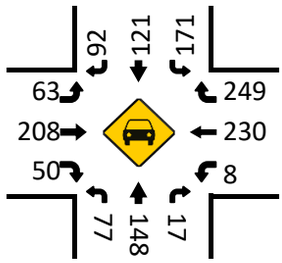
PM	320	0	87	168	18	PM
NOON	0	0	0	0	0	NOON
AM	205	0	86	167	20	AM
		0	1.5	1	0.5	

CONTROL

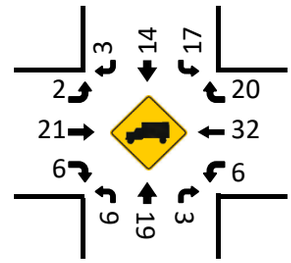
Signalized

TEV	1593 AM	0 NOON	1865 PM
PHF	0.97		0.95

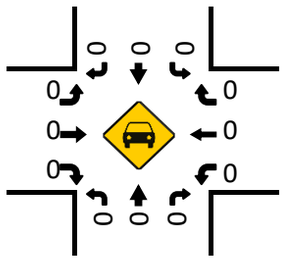
Cars (AM)



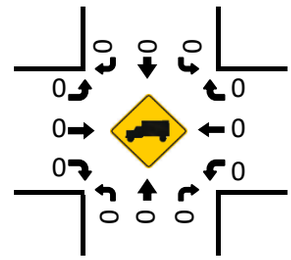
Total Trucks (AM)



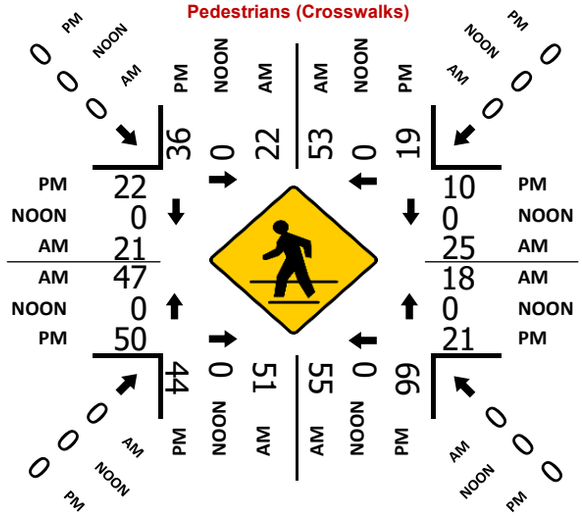
Cars (NOON)



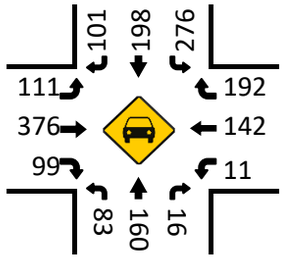
Total Trucks (NOON)



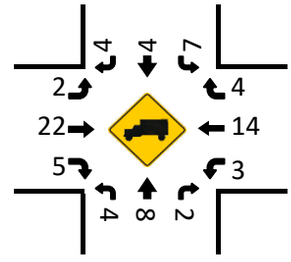
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-017
Location: D St & Summer St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						Summer St Eastbound						Summer St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	7	11	2	0	1	20	22	17	11	0	1	50	10	44	14	3	2	71	3	43	26	0	0	72	213
6:15 AM	6	18	4	1	7	29	37	22	8	0	4	67	11	54	13	0	3	78	2	27	43	1	1	73	247
6:30 AM	3	12	3	0	10	18	29	28	11	0	2	68	8	36	22	2	1	68	3	59	44	0	2	106	260
6:45 AM	10	24	4	0	10	38	48	27	15	0	8	90	8	42	18	0	3	68	2	34	49	0	2	85	281
Total	26	65	13	1	28	105	136	94	45	0	15	275	37	176	67	5	9	285	10	163	162	1	5	336	1001
7:00 AM	17	19	1	1	18	38	37	28	11	1	7	77	13	46	17	0	4	76	3	58	58	0	4	119	310
7:15 AM	18	37	6	0	14	61	42	32	21	0	9	95	9	44	11	1	6	65	3	44	48	0	10	95	316
7:30 AM	7	32	3	0	15	42	26	27	17	0	9	70	9	55	16	2	6	82	2	52	65	0	4	119	313
7:45 AM	21	34	7	0	14	62	54	37	22	0	7	113	23	51	13	2	8	89	9	55	63	0	10	127	391
Total	63	122	17	1	61	203	159	124	71	1	32	355	54	196	57	5	24	312	17	209	234	0	28	460	1330
8:00 AM	14	56	7	0	22	77	43	28	27	0	15	98	16	53	15	4	21	88	3	61	70	0	8	134	397
8:15 AM	24	44	4	0	32	72	39	32	25	0	27	96	17	57	16	1	19	91	0	74	61	0	10	135	394
8:30 AM	27	33	2	0	38	62	52	38	21	0	26	111	9	68	12	0	20	89	2	72	75	0	15	149	411
8:45 AM	17	29	9	0	41	55	52	40	19	0	22	111	15	56	19	1	23	91	3	62	58	0	12	123	380
Total	82	162	22	0	133	266	186	138	92	0	90	416	57	234	62	6	83	359	8	269	264	0	45	541	1582
BREAK																									
4:00 PM	9	45	10	2	16	66	63	42	14	0	9	119	28	84	23	2	12	137	0	41	24	0	6	65	387
4:15 PM	21	41	5	0	22	67	81	54	29	0	10	164	25	113	24	5	19	167	3	39	49	0	14	91	489
4:30 PM	22	38	3	0	22	63	75	55	29	0	10	159	30	96	20	2	12	148	5	34	61	0	5	100	470
4:45 PM	21	38	4	0	26	63	66	49	24	0	11	139	27	86	32	5	17	150	5	41	44	0	4	90	442
Total	73	162	22	2	86	259	285	200	96	0	40	581	110	379	99	14	60	602	13	155	178	0	29	346	1788
5:00 PM	23	51	6	0	40	80	61	44	23	0	24	128	31	103	28	9	24	171	1	42	42	0	8	85	464
5:15 PM	11	28	2	1	43	42	85	30	17	0	20	132	28	114	28	3	12	173	5	39	41	0	11	85	432
5:30 PM	17	29	4	0	23	50	95	65	29	0	26	189	27	110	35	2	13	174	2	37	35	0	13	74	487
5:45 PM	13	36	3	0	20	52	65	50	24	0	21	139	29	89	33	3	17	154	6	40	41	0	8	87	432
Total	64	144	15	1	126	224	306	189	93	0	91	588	115	416	124	17	66	672	14	158	159	0	40	331	1815
6:00 PM	13	30	2	0	18	45	68	74	25	0	17	167	27	88	28	2	22	145	4	41	40	0	12	85	442
6:15 PM	19	26	6	0	18	51	60	50	26	0	6	136	28	118	39	3	13	188	3	54	24	1	7	82	457
6:30 PM	14	21	5	1	16	41	56	26	24	0	18	106	24	113	35	4	15	176	1	60	27	0	12	88	411
6:45 PM	15	33	4	0	4	52	40	29	27	0	14	96	27	78	16	5	6	126	2	33	25	0	6	60	334
Total	61	110	17	1	56	189	224	179	102	0	55	505	106	397	118	14	56	635	10	188	116	1	37	315	1644
Grand Total	369	765	106	6	490	1246	1296	924	499	1	323	2720	479	1798	527	61	298	2865	72	1142	1113	2	184	2329	9160
Apprch %	29.6	61.4	8.5	0.5	39.3		47.6	34.0	18.3	0.0	11.9		16.7	62.8	18.4	2.1	10.4		3.1	49.0	47.8	0.1	7.9		
Total %	4.0	8.4	1.2	0.1	5.3	13.6	14.1	10.1	5.4	0.0	3.5	29.7	5.2	19.6	5.8	0.7	3.3	31.3	0.8	12.5	12.2	0.0	2.0	25.4	
Cars, PU, Vans	336	698	89	6		1129	1230	886	474	1		2591	469	1679	496	61		2705	55	1014	1045	1		2115	8540
% Cars, PU, Vans	91.1	91.2	84.0	100.0		90.6	94.9	95.9	95.0	100.0		95.3	97.9	93.4	94.1	100.0		94.4	76.4	88.8	93.9	50.0		90.8	93.2
Buses	17	8	1	0		26	13	5	9	0		27	3	68	6	0		77	0	99	3	0		102	232
%Buses	4.6	1.0	0.9	0.0		2.1	1.0	0.5	1.8	0.0		1.0	0.6	3.8	1.1	0.0		2.7	0.0	8.7	0.3	0.0		4.4	2.5
Heavy Trucks	16	59	16	0		91	53	33	16	0		102	7	51	25	0		83	17	29	65	1		112	388
%Heavy Trucks	4.3	7.7	15.1	0.0		7.3	4.1	3.6	3.2	0.0		3.8	1.5	2.8	4.7	0.0		2.9	23.6	2.5	5.8	50.0		4.8	4.2

Project ID: 25-430193-017
Location: D St & Summer St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	21	34	7	0	62	54	37	22	0	113	23	51	13	2	89	9	55	63	0	127	391
8:00 AM	14	56	7	0	77	43	28	27	0	98	16	53	15	4	88	3	61	70	0	134	397
8:15 AM	24	44	4	0	72	39	32	25	0	96	17	57	16	1	91	0	74	61	0	135	394
8:30 AM	27	33	2	0	62	52	38	21	0	111	9	68	12	0	89	2	72	75	0	149	411
Total Volume	86	167	20	0	273	188	135	95	0	418	65	229	56	7	357	14	262	269	0	545	1593
% App. Total	31.5	61.2	7.3	0.0	100	45.0	32.3	22.7	0.0	100	18.2	64.1	15.7	2.0	100	2.6	48.1	49.4	0.0	100	
PHF					0.886					0.925					0.981					0.914	0.969
Cars, PU, Vans	77	148	17	0	242	171	121	92	0	384	63	208	50	7	328	8	230	249	0	487	1441
% Cars, PU, Vans	89.5	88.6	85.0	0.0	88.6	91.0	89.6	96.8	0.0	91.9	96.9	90.8	89.3	100.0	91.9	57.1	87.8	92.6	0.0	89.4	90.5
Buses	3	2	1	0	6	2	2	0	0	4	0	11	2	0	13	0	25	1	0	26	49
%Buses	3.5	1.2	5.0	0.0	2.2	1.1	1.5	0.0	0.0	1.0	0.0	4.8	3.6	0.0	3.6	0.0	9.5	0.4	0.0	4.8	3.1
Heavy Trucks	6	17	2	0	25	15	12	3	0	30	2	10	4	0	16	6	7	19	0	32	103
%Heavy Trucks	7.0	10.2	10.0	0.0	9.2	8.0	8.9	3.2	0.0	7.2	3.1	4.4	7.1	0.0	4.5	42.9	2.7	7.1	0.0	5.9	6.5

PM

	D St Northbound					D St Southbound					Summer St Eastbound					Summer St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	21	41	5	0	67	81	54	29	0	164	25	113	24	5	167	3	39	49	0	91	489
4:30 PM	22	38	3	0	63	75	55	29	0	159	30	96	20	2	148	5	34	61	0	100	470
4:45 PM	21	38	4	0	63	66	49	24	0	139	27	86	32	5	150	5	41	44	0	90	442
5:00 PM	23	51	6	0	80	61	44	23	0	128	31	103	28	9	171	1	42	42	0	85	464
Total Volume	87	168	18	0	273	283	202	105	0	590	113	398	104	21	636	14	156	196	0	366	1865
% App. Total	31.9	61.5	6.6	0.0	100	48.0	34.2	17.8	0.0	100	17.8	62.6	16.4	3.3	100	3.8	42.6	53.6	0.0	100	
PHF					0.853					0.899					0.930					0.915	0.953
Cars, PU, Vans	83	160	16	0	259	276	198	101	0	575	111	376	99	21	607	11	142	192	0	345	1786
% Cars, PU, Vans	95.4	95.2	88.9	0.0	94.9	97.5	98.0	96.2	0.0	97.5	98.2	94.5	95.2	100.0	95.4	78.6	91.0	98.0	0.0	94.3	95.8
Buses	3	0	0	0	3	4	0	2	0	6	2	13	2	0	17	0	12	1	0	13	39
%Buses	3.4	0.0	0.0	0.0	1.1	1.4	0.0	1.9	0.0	1.0	1.8	3.3	1.9	0.0	2.7	0.0	7.7	0.5	0.0	3.6	2.1
Heavy Trucks	1	8	2	0	11	3	4	2	0	9	0	9	3	0	12	3	2	3	0	8	40
%Heavy Trucks	1.1	4.8	11.1	0.0	4.0	1.1	2.0	1.9	0.0	1.5	0.0	2.3	2.9	0.0	1.9	21.4	1.3	1.5	0.0	2.2	2.1

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston
Control: Signalized

Project ID: 25-430193-018
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				I 90/Haul Rd WB On Ramp				I 90/Haul Rd WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	10	33	0	1	0	53	12	0	0	0	0	0	0	0	0	0	109
6:15 AM	21	53	0	1	0	69	14	0	0	0	0	0	0	0	0	0	158
6:30 AM	13	50	0	0	0	66	20	0	0	0	0	0	0	0	0	0	149
6:45 AM	26	54	0	0	0	85	19	0	0	0	0	0	0	0	0	0	184
7:00 AM	25	68	0	0	0	79	27	0	0	0	0	0	0	0	0	0	199
7:15 AM	28	62	0	0	0	93	30	0	0	0	0	0	0	0	0	0	213
7:30 AM	24	86	0	0	0	78	36	1	0	0	0	0	0	0	0	0	225
7:45 AM	36	83	0	0	0	105	26	0	0	0	0	0	0	0	0	0	250
8:00 AM	47	93	0	0	0	104	32	0	0	0	0	0	0	0	0	0	276
8:15 AM	45	80	0	0	0	97	48	0	0	0	0	0	0	0	0	0	270
8:30 AM	30	86	0	0	0	107	29	0	0	0	0	0	0	0	0	0	252
8:45 AM	26	77	0	0	0	109	31	0	0	0	0	0	0	0	0	0	243
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	331	825	0	2	0	1045	324	1	0	0	0	0	0	0	0	0	2528
APPROACH %'s :	28.58%	71.24%	0.00%	0.17%	0.00%	76.28%	23.65%	0.07%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	158	342	0	0	0	413	135	0	0	0	0	0	0	0	0	0	1048
PEAK HR FACTOR :	0.840	0.919	0.000	0.000	0.000	0.965	0.703	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.949
	0.893				0.945												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	40	54	0	0	0	128	87	0	0	0	0	0	0	0	0	0	309
4:15 PM	39	81	0	0	0	159	95	1	0	0	0	0	0	0	0	0	375
4:30 PM	46	82	0	0	0	155	79	0	0	0	0	0	0	0	0	0	362
4:45 PM	34	74	0	2	0	142	102	0	0	0	0	0	0	0	0	0	354
5:00 PM	34	87	0	1	0	122	96	0	0	0	0	0	0	0	0	0	340
5:15 PM	31	68	0	0	0	144	99	0	0	0	0	0	0	0	0	0	342
5:30 PM	33	57	0	0	0	177	95	0	0	0	0	0	0	0	0	0	362
5:45 PM	34	73	0	0	0	149	83	0	0	0	0	0	0	0	0	0	339
6:00 PM	27	69	0	0	0	157	86	0	0	0	0	0	0	0	0	0	339
6:15 PM	23	52	0	0	0	138	89	1	0	0	0	0	0	0	0	0	303
6:30 PM	22	51	0	0	0	114	68	0	0	0	0	0	0	0	0	0	255
6:45 PM	19	69	0	0	0	89	70	1	0	0	0	0	0	0	0	0	248
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	382	817	0	3	0	1674	1049	3	0	0	0	0	0	0	0	0	3928
APPROACH %'s :	31.78%	67.97%	0.00%	0.25%	0.00%	61.41%	38.48%	0.11%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	153	324	0	3	0	578	372	1	0	0	0	0	0	0	0	0	1431
PEAK HR FACTOR :	0.832	0.931	0.000	0.375	0.000	0.909	0.912	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.954
	0.938				0.932												

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston
Control: Signalized

Project ID: 25-430193-018
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				I 90/Haul Rd WB On Ramp				I 90/Haul Rd WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	9	26	0	1	0	47	11	0	0	0	0	0	0	0	0	0	94
6:15 AM	18	51	0	1	0	65	13	0	0	0	0	0	0	0	0	0	148
6:30 AM	12	48	0	0	0	61	20	0	0	0	0	0	0	0	0	0	141
6:45 AM	19	49	0	0	0	80	17	0	0	0	0	0	0	0	0	0	165
7:00 AM	22	61	0	0	0	76	26	0	0	0	0	0	0	0	0	0	185
7:15 AM	25	57	0	0	0	81	28	0	0	0	0	0	0	0	0	0	191
7:30 AM	21	82	0	0	0	70	34	1	0	0	0	0	0	0	0	0	208
7:45 AM	34	79	0	0	0	97	26	0	0	0	0	0	0	0	0	0	236
8:00 AM	43	89	0	0	0	94	32	0	0	0	0	0	0	0	0	0	258
8:15 AM	41	72	0	0	0	92	45	0	0	0	0	0	0	0	0	0	250
8:30 AM	26	75	0	0	0	98	29	0	0	0	0	0	0	0	0	0	228
8:45 AM	23	63	0	0	0	103	31	0	0	0	0	0	0	0	0	0	220
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	293	752	0	2	0	964	312	1	0	0	0	0	0	0	0	0	2324
APPROACH %'s :	27.98%	71.82%	0.00%	0.19%	0.00%	75.49%	24.43%	0.08%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	144	315	0	0	0	381	132	0	0	0	0	0	0	0	0	0	972
PEAK HR FACTOR :	0.837	0.885	0.000	0.000	0.000	0.972	0.733	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.942
	0.869				0.936												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	39	51	0	0	0	122	87	0	0	0	0	0	0	0	0	0	299
4:15 PM	37	78	0	0	0	155	95	1	0	0	0	0	0	0	0	0	366
4:30 PM	46	77	0	0	0	151	79	0	0	0	0	0	0	0	0	0	353
4:45 PM	33	74	0	2	0	137	100	0	0	0	0	0	0	0	0	0	346
5:00 PM	33	85	0	1	0	122	95	0	0	0	0	0	0	0	0	0	336
5:15 PM	29	67	0	0	0	141	99	0	0	0	0	0	0	0	0	0	336
5:30 PM	32	54	0	0	0	173	95	0	0	0	0	0	0	0	0	0	354
5:45 PM	34	71	0	0	0	146	83	0	0	0	0	0	0	0	0	0	334
6:00 PM	26	67	0	0	0	153	85	0	0	0	0	0	0	0	0	0	331
6:15 PM	23	51	0	0	0	131	88	1	0	0	0	0	0	0	0	0	294
6:30 PM	20	51	0	0	0	109	68	0	0	0	0	0	0	0	0	0	248
6:45 PM	19	66	0	0	0	85	69	1	0	0	0	0	0	0	0	0	240
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	371	792	0	3	0	1625	1043	3	0	0	0	0	0	0	0	0	3837
APPROACH %'s :	31.82%	67.92%	0.00%	0.26%	0.00%	60.84%	39.05%	0.11%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	149	314	0	3	0	565	369	1	0	0	0	0	0	0	0	0	1401
PEAK HR FACTOR :	0.810	0.924	0.000	0.375	0.000	0.911	0.923	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.957
	0.947				0.931												

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston
Control: Signalized

Project ID: 25-430193-018
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				I 90/Haul Rd WB On Ramp				I 90/Haul Rd WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	8	0	0	0	9	2	0	0	0	0	0	0	0	0	0	19
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	81.82%	18.18%	0.00%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.000	0.750	0.000	0.000	0.000	0.333	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438
		0.750				0.333											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
6:30 PM	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:45 PM	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	4	0	0	0	18	4	0	0	0	0	0	0	0	0	0	28
APPROACH %'s :	33.33%	66.67%	0.00%	0.00%	0.00%	81.82%	18.18%	0.00%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	1	2	0	0	0	6	2	0	0	0	0	0	0	0	0	0	11
PEAK HR FACTOR :	0.250	0.500	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.550
		0.375				0.667											

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston
Control: Signalized

Project ID: 25-430193-018
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				I 90/Haul Rd WB On Ramp				I 90/Haul Rd WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	12
6:15 AM	3	2	0	0	0	2	1	0	0	0	0	0	0	0	0	0	8
6:30 AM	1	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8
6:45 AM	7	5	0	0	0	4	1	0	0	0	0	0	0	0	0	0	17
7:00 AM	3	5	0	0	0	3	1	0	0	0	0	0	0	0	0	0	12
7:15 AM	3	5	0	0	0	12	2	0	0	0	0	0	0	0	0	0	22
7:30 AM	3	3	0	0	0	7	2	0	0	0	0	0	0	0	0	0	15
7:45 AM	2	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10
8:00 AM	4	4	0	0	0	9	0	0	0	0	0	0	0	0	0	0	17
8:15 AM	4	7	0	0	0	5	3	0	0	0	0	0	0	0	0	0	19
8:30 AM	4	10	0	0	0	9	0	0	0	0	0	0	0	0	0	0	23
8:45 AM	3	13	0	0	0	6	0	0	0	0	0	0	0	0	0	0	22
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	38	65	0	0	0	72	10	0	0	0	0	0	0	0	0	0	185
APPROACH %'s :	36.89%	63.11%	0.00%	0.00%	0.00%	87.80%	12.20%	0.00%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	14	24	0	0	0	28	3	0	0	0	0	0	0	0	0	0	69
PEAK HR FACTOR :	0.875	0.600	0.000	0.000	0.000	0.778	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
	0.679				0.861												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8
4:15 PM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
4:45 PM	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	5
5:00 PM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
6:00 PM	1	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
6:15 PM	0	1	0	0	0	4	1	0	0	0	0	0	0	0	0	0	6
6:30 PM	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	21	0	0	0	31	2	0	0	0	0	0	0	0	0	0	63
APPROACH %'s :	30.00%	70.00%	0.00%	0.00%	0.00%	93.94%	6.06%	0.00%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	3	8	0	0	0	7	1	0	0	0	0	0	0	0	0	0	19
PEAK HR FACTOR :	0.750	0.500	0.000	0.000	0.000	0.583	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.679
	0.688				0.500												

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston
Control: Signalized

Project ID: 25-430193-018
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				I 90/Haul Rd WB On Ramp				I 90/Haul Rd WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	2	0	0	0	0	0	0	0	0	0	0	18
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
PEAK HR FACTOR :	0.000	0.417	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
		0.417				0.250											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
6:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	0	0	0	24	0	0	0	0	0	0	0	0	0	0	33
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	10
PEAK HR FACTOR :	0.000	0.333	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
		0.333				0.750											

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & I 90/Haul Rd WB On Ramp
City: Boston

Project ID: 25-430193-018
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		I 90/Haul Rd WB On Ramp		I 90/Haul Rd WB On Ramp		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	1	0	0	0	1	2
6:15 AM	0	0	0	0	0	0	1	1	2
6:30 AM	0	0	0	0	0	0	1	1	2
6:45 AM	0	2	0	0	0	0	4	1	7
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	4	1	1	1	0	0	1	3	11
7:30 AM	0	1	0	0	0	0	1	3	5
7:45 AM	2	4	0	0	0	0	5	6	17
8:00 AM	1	3	0	0	0	0	6	2	12
8:15 AM	3	2	0	0	0	0	8	5	18
8:30 AM	3	4	0	0	0	0	4	10	21
8:45 AM	0	3	0	0	0	0	7	7	17
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	13	20	1	2	0	0	38	40	114
APPROACH %'s :	39.39%	60.61%	33.33%	66.67%			48.72%	51.28%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	9	13	0	0	0	0	23	23	68
PEAK HR FACTOR :	0.750	0.813					0.719	0.575	
	0.786						0.821		0.810

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	2	0	0	0	0	2	5	10
4:15 PM	3	7	0	0	0	0	13	1	24
4:30 PM	7	4	0	0	0	0	4	7	22
4:45 PM	3	0	0	0	0	0	4	9	16
5:00 PM	2	0	0	0	0	0	7	8	17
5:15 PM	0	1	0	0	0	0	5	9	15
5:30 PM	2	2	1	0	0	0	10	5	20
5:45 PM	1	2	0	0	0	0	8	8	19
6:00 PM	6	2	0	0	0	0	9	15	32
6:15 PM	0	3	0	0	0	0	10	1	14
6:30 PM	2	4	0	0	0	0	6	5	17
6:45 PM	1	0	0	0	0	0	3	6	10
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	28	27	1	0	0	0	81	79	216
APPROACH %'s :	50.91%	49.09%	100.00%	0.00%			50.63%	49.38%	
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	15	11	0	0	0	0	28	25	79
PEAK HR FACTOR :	0.536	0.393					0.538	0.694	
	0.591						0.883		0.823

Prepared by National Data & Surveying Services

D St & I 90/Haul Rd WB On Ramp

Peak Hour Turning Movement Count

ID: 25-430193-018
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1048	0	1431
PHF	0.95		0.95

SOUTHBOUND (D St)

	Left	Thru	Right	U-Turn	Total	
AM	135	413	0	0	342	AM
NOON	0	0	0	0	0	NOON
PM	372	578	0	1	325	PM

EASTBOUND (I 90/Haul Rd WB On Ramp)

	Left	Thru	Right	
AM	293	0	525	
NOON	0	0	0	0
PM	0	0	0	0
	0	0	0	0
	0	0	0	0

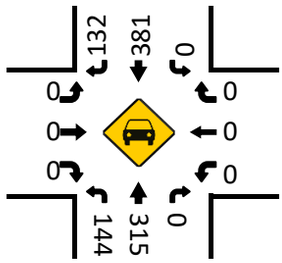
WESTBOUND (I 90/Haul Rd WB On Ramp)

	Left	Thru	Right	
PM	0	0	0	0
NOON	0	0	0	0
AM	0	0	0	0
	0	0	0	0
	0	0	0	

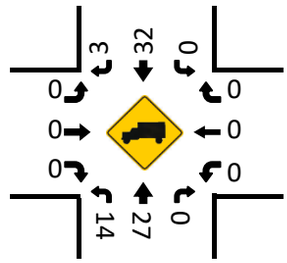
NORTHBOUND (D St)

	Left	Thru	Right	U-Turn	Total	
PM	581	3	153	324	0	PM
NOON	0	0	0	0	0	NOON
AM	413	0	158	342	0	AM

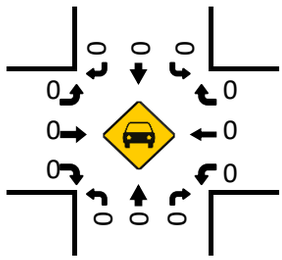
Cars (AM)



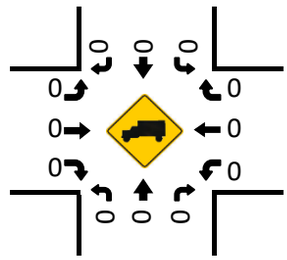
Total Trucks (AM)



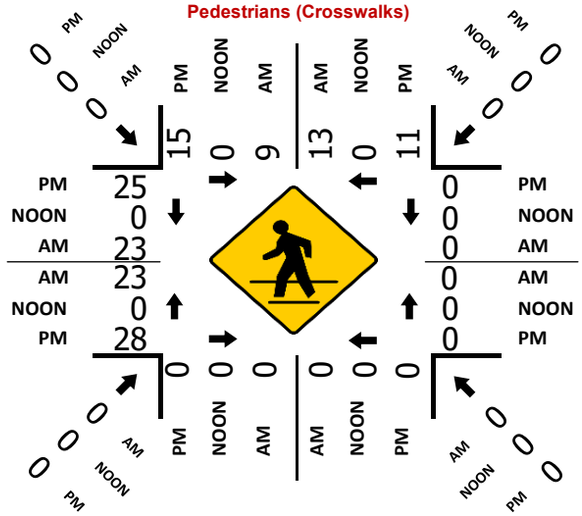
Cars (NOON)



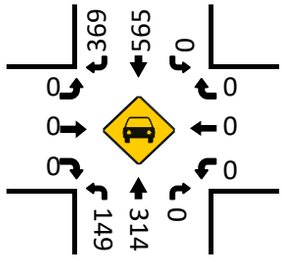
Total Trucks (NOON)



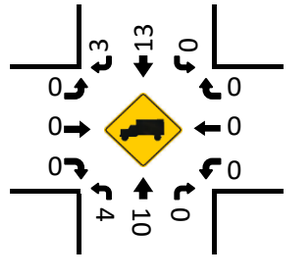
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-018
Location: D St & I 90/Haul Rd WB On Ramp
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						I 90/Haul Rd WB On Ramp Eastbound						I 90/Haul Rd WB On Ramp Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	10	33	0	1	1	44	0	53	12	0	0	65	0	0	0	0	1	0	0	0	0	0	0	0	109
6:15 AM	21	53	0	1	0	75	0	69	14	0	0	83	0	0	0	0	2	0	0	0	0	0	0	0	158
6:30 AM	13	50	0	0	0	63	0	66	20	0	0	86	0	0	0	0	2	0	0	0	0	0	0	0	149
6:45 AM	26	54	0	0	0	80	0	85	19	0	2	104	0	0	0	0	5	0	0	0	0	0	0	0	184
Total	70	190	0	2	1	262	0	273	65	0	2	338	0	0	0	0	10	0	0	0	0	0	0	0	600
7:00 AM	25	68	0	0	0	93	0	79	27	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	199
7:15 AM	28	62	0	0	2	90	0	93	30	0	5	123	0	0	0	0	4	0	0	0	0	0	0	0	213
7:30 AM	24	86	0	0	0	110	0	78	36	1	1	115	0	0	0	0	4	0	0	0	0	0	0	0	225
7:45 AM	36	83	0	0	0	119	0	105	26	0	6	131	0	0	0	0	11	0	0	0	0	0	0	0	250
Total	113	299	0	0	2	412	0	355	119	1	12	475	0	0	0	0	19	0	0	0	0	0	0	0	887
8:00 AM	47	93	0	0	0	140	0	104	32	0	4	136	0	0	0	0	8	0	0	0	0	0	0	0	276
8:15 AM	45	80	0	0	0	125	0	97	48	0	5	145	0	0	0	0	13	0	0	0	0	0	0	0	270
8:30 AM	30	86	0	0	0	116	0	107	29	0	7	136	0	0	0	0	14	0	0	0	0	0	0	0	252
8:45 AM	26	77	0	0	0	103	0	109	31	0	3	140	0	0	0	0	14	0	0	0	0	0	0	0	243
Total	148	336	0	0	0	484	0	417	140	0	19	557	0	0	0	0	49	0	0	0	0	0	0	0	1041
BREAK																									
4:00 PM	40	54	0	0	0	94	0	128	87	0	3	215	0	0	0	0	7	0	0	0	0	0	0	0	309
4:15 PM	39	81	0	0	0	120	0	159	95	1	10	255	0	0	0	0	14	0	0	0	0	0	0	0	375
4:30 PM	46	82	0	0	0	128	0	155	79	0	11	234	0	0	0	0	11	0	0	0	0	0	0	0	362
4:45 PM	34	74	0	2	0	110	0	142	102	0	3	244	0	0	0	0	13	0	0	0	0	0	0	0	354
Total	159	291	0	2	0	452	0	584	363	1	27	948	0	0	0	0	45	0	0	0	0	0	0	0	1400
5:00 PM	34	87	0	1	0	122	0	122	96	0	2	218	0	0	0	0	15	0	0	0	0	0	0	0	340
5:15 PM	31	68	0	0	0	99	0	144	99	0	1	243	0	0	0	0	14	0	0	0	0	0	0	0	342
5:30 PM	33	57	0	0	1	90	0	177	95	0	4	272	0	0	0	0	15	0	0	0	0	0	0	0	362
5:45 PM	34	73	0	0	0	107	0	149	83	0	3	232	0	0	0	0	16	0	0	0	0	0	0	0	339
Total	132	285	0	1	1	418	0	592	373	0	10	965	0	0	0	0	60	0	0	0	0	0	0	0	1383
6:00 PM	27	69	0	0	0	96	0	157	86	0	8	243	0	0	0	0	24	0	0	0	0	0	0	0	339
6:15 PM	23	52	0	0	0	75	0	138	89	1	3	228	0	0	0	0	11	0	0	0	0	0	0	0	303
6:30 PM	22	51	0	0	0	73	0	114	68	0	6	182	0	0	0	0	11	0	0	0	0	0	0	0	255
6:45 PM	19	69	0	0	0	88	0	89	70	1	1	160	0	0	0	0	9	0	0	0	0	0	0	0	248
Total	91	241	0	0	0	332	0	498	313	2	18	813	0	0	0	0	55	0	0	0	0	0	0	0	1145
Grand Total	713	1642	0	5	4	2360	0	2719	1373	4	88	4096	0	0	0	0	238	0	0	0	0	0	0	0	6456
Apprch %	30.2	69.6	0.0	0.2	0.2		0.0	66.4	33.5	0.1	2.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	11.0	25.4	0.0	0.1	0.1	36.6	0.0	42.1	21.3	0.1	1.4	63.4	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	664	1544	0	5		2213	0	2589	1355	4		3948	0	0	0	0		0	0	0	0	0		0	6161
% Cars, PU, Vans	93.1	94.0	0.0	100.0		93.8	0.0	95.2	98.7	100.0		96.4	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	95.4
Buses	2	12	0	0		14	0	27	6	0		33	0	0	0	0		0	0	0	0	0		0	47
%Buses	0.3	0.7	0.0	0.0		0.6	0.0	1.0	0.4	0.0		0.8	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.7
Heavy Trucks	47	86	0	0		133	0	103	12	0		115	0	0	0	0		0	0	0	0	0		0	248
%Heavy Trucks	6.6	5.2	0.0	0.0		5.6	0.0	3.8	0.9	0.0		2.8	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	3.8

Project ID: 25-430193-018
Location: D St & I 90/Haul Rd WB On Ramp
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					I 90/Haul Rd WB On Ramp Eastbound					I 90/Haul Rd WB On Ramp Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	36	83	0	0	119	0	105	26	0	131	0	0	0	0	0	0	0	0	0	0	250
8:00 AM	47	93	0	0	140	0	104	32	0	136	0	0	0	0	0	0	0	0	0	0	276
8:15 AM	45	80	0	0	125	0	97	48	0	145	0	0	0	0	0	0	0	0	0	0	270
8:30 AM	30	86	0	0	116	0	107	29	0	136	0	0	0	0	0	0	0	0	0	0	252
Total Volume	158	342	0	0	500	0	413	135	0	548	0	0	0	0	0	0	0	0	0	0	1048
% App. Total	31.6	68.4	0.0	0.0	100	0.0	75.4	24.6	0.0	100	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	
PHF					0.893					0.945											0.949
Cars, PU, Vans	144	315	0	0	459	0	381	132	0	513	0	0	0	0	0	0	0	0	0	0	972
% Cars, PU, Vans	91.1	92.1	0.0	0.0	91.8	0.0	92.3	97.8	0.0	93.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.7
Buses	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
%Buses	0.0	0.9	0.0	0.0	0.6	0.0	1.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Heavy Trucks	14	24	0	0	38	0	28	3	0	31	0	0	0	0	0	0	0	0	0	0	69
%Heavy Trucks	8.9	7.0	0.0	0.0	7.6	0.0	6.8	2.2	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6

PM

	D St Northbound					D St Southbound					I 90/Haul Rd WB On Ramp Eastbound					I 90/Haul Rd WB On Ramp Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	39	81	0	0	120	0	159	95	1	255	0	0	0	0	0	0	0	0	0	0	375
4:30 PM	46	82	0	0	128	0	155	79	0	234	0	0	0	0	0	0	0	0	0	0	362
4:45 PM	34	74	0	2	110	0	142	102	0	244	0	0	0	0	0	0	0	0	0	0	354
5:00 PM	34	87	0	1	122	0	122	96	0	218	0	0	0	0	0	0	0	0	0	0	340
Total Volume	153	324	0	3	480	0	578	372	1	951	0	0	0	0	0	0	0	0	0	0	1431
% App. Total	31.9	67.5	0.0	0.6	100	0.0	60.8	39.1	0.1	100	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	
PHF					0.938					0.932											0.954
Cars, PU, Vans	149	314	0	3	466	0	565	369	1	935	0	0	0	0	0	0	0	0	0	0	1401
% Cars, PU, Vans	97.4	96.9	0.0	100.0	97.1	0.0	97.8	99.2	100.0	98.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.9
Buses	1	2	0	0	3	0	6	2	0	8	0	0	0	0	0	0	0	0	0	0	11
%Buses	0.7	0.6	0.0	0.0	0.6	0.0	1.0	0.5	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Heavy Trucks	3	8	0	0	11	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	19
%Heavy Trucks	2.0	2.5	0.0	0.0	2.3	0.0	1.2	0.3	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston
Control: Signalized

Project ID: 25-430193-019
Date: 12/16/2025

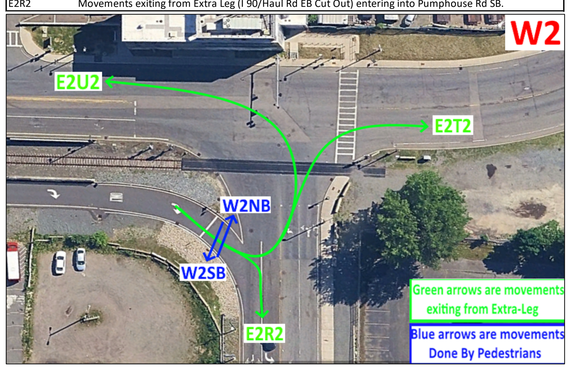
Data - Total

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				I 90/Haul Rd				I 90/Haul Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
6:00 AM	37	0	2	0	0	0	0	0	0	47	28	0	2	20	0	0	0	0	0	136
6:15 AM	57	0	3	0	0	0	0	0	0	59	34	0	8	17	0	0	0	1	0	179
6:30 AM	93	0	2	0	0	0	0	0	0	64	27	0	5	22	0	0	0	3	0	216
6:45 AM	91	0	6	0	0	0	0	0	0	59	26	0	9	18	0	0	0	1	0	210
7:00 AM	114	0	4	0	0	0	0	0	0	50	40	0	5	24	0	0	0	2	1	240
7:15 AM	124	0	4	0	0	0	0	0	0	66	34	0	5	24	0	0	0	2	0	259
7:30 AM	143	0	8	0	0	0	0	0	0	64	34	0	3	30	0	0	0	1	0	283
7:45 AM	130	0	2	0	0	0	0	0	0	67	42	0	9	24	0	0	1	2	0	277
8:00 AM	118	0	2	0	0	0	0	0	0	70	45	0	1	23	0	1	0	2	0	262
8:15 AM	115	0	5	0	0	0	0	0	0	71	50	0	2	19	0	0	0	0	0	262
8:30 AM	110	0	9	0	0	0	0	0	0	71	39	0	7	19	0	0	0	0	0	255
8:45 AM	80	0	7	0	0	0	0	0	0	79	53	0	3	21	0	0	0	0	0	243
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	1212	0	54	0	0	0	0	0	0	767	452	0	59	261	0	1	1	14	1	2822
APPROACH %'s :	95.73%	0.00%	4.27%	0.00%					0.00%	62.92%	37.08%	0.00%	18.38%	81.31%	0.00%	0.31%	6.25%	87.50%	6.25%	
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	506	0	17	0	0	0	0	0	0	272	171	0	15	96	0	1	1	5	0	1084
PEAK HR FACTOR :	0.885	0.000	0.531	0.000	0.000	0.000	0.000	0.000	0.000	0.958	0.855	0.000	0.417	0.800	0.000	0.250	0.250	0.625	0.000	0.958
	0.866								0.915				0.848							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
4:00 PM	53	0	4	0	0	0	0	0	0	25	67	0	17	67	0	0	0	2	1	236
4:15 PM	51	0	6	0	0	0	0	0	0	23	70	0	12	79	0	0	0	0	0	241
4:30 PM	45	0	6	0	0	0	0	0	0	20	67	1	13	86	0	0	0	0	0	238
4:45 PM	38	0	5	0	0	0	0	0	0	22	50	0	17	92	0	0	0	0	0	224
5:00 PM	53	0	10	0	0	0	0	0	0	16	69	0	10	113	0	0	0	1	0	272
5:15 PM	53	0	9	0	0	0	0	0	0	31	96	0	12	80	0	0	0	0	0	281
5:30 PM	52	0	15	0	0	0	0	0	0	27	82	0	9	69	0	0	0	1	0	255
5:45 PM	40	0	8	0	0	0	0	0	0	30	115	0	12	58	0	0	0	1	0	264
6:00 PM	30	0	10	0	0	0	0	0	0	31	115	0	9	49	0	0	0	1	0	245
6:15 PM	51	0	5	0	0	0	0	0	0	39	89	0	12	49	0	0	0	0	0	245
6:30 PM	33	0	10	0	0	0	0	0	0	29	85	0	8	51	0	0	0	0	0	216
6:45 PM	30	0	6	0	0	0	0	0	0	38	96	0	6	43	0	0	0	0	0	219
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	529	0	94	0	0	0	0	0	0	331	1001	1	137	836	0	0	0	6	1	2936
APPROACH %'s :	84.91%	0.00%	15.09%	0.00%					0.00%	24.83%	75.09%	0.08%	14.08%	85.92%	0.00%	0.00%	0.00%	85.71%	14.29%	
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	198	0	42	0	0	0	0	0	0	104	362	0	43	320	0	0	0	3	0	1072
PEAK HR FACTOR :	0.934	0.000	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.839	0.787	0.000	0.896	0.708	0.000	0.000	0.000	0.750	0.000	0.954
	0.896								0.803				0.738							

Explanation for extra leg movements
Movements exiting the extra leg

E2T2	Movements exiting from Extra Leg (I 90/Haul Rd EB Cut Out) entering into I 90/Haul Rd EB.
E2U2	Movements exiting from Extra Leg (I 90/Haul Rd EB Cut Out) entering into I 90/Haul Rd WB.
E2R2	Movements exiting from Extra Leg (I 90/Haul Rd EB Cut Out) entering into Pumphouse Rd SB.



National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston
Control: Signalized

Project ID: 25-430193-019
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				I 90/Haul Rd				I 90/Haul Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
6:00 AM	34	0	2	0	0	0	0	0	0	38	23	0	2	12	0	0	0	0	0	111
6:15 AM	54	0	2	0	0	0	0	0	0	55	27	0	8	9	0	0	0	0	0	155
6:30 AM	89	0	2	0	0	0	0	0	0	55	25	0	5	16	0	0	0	2	0	194
6:45 AM	78	0	5	0	0	0	0	0	0	54	23	0	9	5	0	0	0	1	0	175
7:00 AM	107	0	4	0	0	0	0	0	0	44	31	0	5	18	0	0	0	1	1	211
7:15 AM	120	0	4	0	0	0	0	0	0	60	29	0	4	11	0	0	0	2	0	230
7:30 AM	137	0	7	0	0	0	0	0	0	60	28	0	2	22	0	0	0	1	0	257
7:45 AM	126	0	2	0	0	0	0	0	0	59	33	0	8	15	0	0	0	2	0	245
8:00 AM	112	0	2	0	0	0	0	0	0	66	38	0	0	15	0	1	0	1	0	235
8:15 AM	112	0	4	0	0	0	0	0	0	63	43	0	2	12	0	0	0	0	0	236
8:30 AM	103	0	9	0	0	0	0	0	0	63	33	0	6	14	0	0	0	0	0	228
8:45 AM	73	0	7	0	0	0	0	0	0	72	48	0	3	11	0	0	0	0	0	214
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	1145	0	50	0	0	0	0	0	0	689	381	0	54	160	0	1	0	10	1	2491
APPROACH %'s :	95.82%	0.00%	4.18%	0.00%					0.00%	64.39%	35.61%	0.00%	25.12%	74.42%	0.00%	0.47%	0.00%	90.91%	9.09%	
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	487	0	15	0	0	0	0	0	0	248	142	0	12	64	0	1	0	4	0	973
PEAK HR FACTOR :	0.889	0.000	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.939	0.826	0.000	0.375	0.727	0.000	0.250	0.000	0.500	0.000	0.946
	0.872								0.920				0.802							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
4:00 PM	46	0	4	0	0	0	0	0	0	22	67	0	16	61	0	0	0	1	0	217
4:15 PM	48	0	6	0	0	0	0	0	0	19	69	0	11	76	0	0	0	0	0	229
4:30 PM	44	0	6	0	0	0	0	0	0	16	66	1	12	83	0	0	0	0	0	228
4:45 PM	36	0	5	0	0	0	0	0	0	20	49	0	17	81	0	0	0	0	0	208
5:00 PM	51	0	10	0	0	0	0	0	0	14	68	0	9	106	0	0	0	0	0	258
5:15 PM	52	0	9	0	0	0	0	0	0	30	95	0	11	71	0	0	0	0	0	268
5:30 PM	50	0	14	0	0	0	0	0	0	24	82	0	8	64	0	0	0	0	0	242
5:45 PM	38	0	8	0	0	0	0	0	0	25	114	0	12	51	0	0	0	0	0	248
6:00 PM	29	0	10	0	0	0	0	0	0	30	115	0	8	46	0	0	0	1	0	239
6:15 PM	47	0	5	0	0	0	0	0	0	35	88	0	12	44	0	0	0	0	0	231
6:30 PM	32	0	10	0	0	0	0	0	0	27	84	0	8	48	0	0	0	0	0	209
6:45 PM	29	0	6	0	0	0	0	0	0	34	93	0	6	39	0	0	0	0	0	207
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	502	0	93	0	0	0	0	0	0	296	990	1	130	770	0	0	0	2	0	2784
APPROACH %'s :	84.37%	0.00%	15.63%	0.00%					0.00%	23.00%	76.92%	0.08%	14.44%	85.56%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	191	0	41	0	0	0	0	0	0	93	359	0	40	292	0	0	0	0	0	1016
PEAK HR FACTOR :	0.918	0.000	0.732	0.000	0.000	0.000	0.000	0.000	0.000	0.775	0.787	0.000	0.833	0.689	0.000	0.000	0.000	0.000	0.000	0.948
	0.906								0.813				0.722							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston
Control: Signalized

Project ID: 25-430193-019
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				I 90/Haul Rd				I 90/Haul Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
6:00 AM	2	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0	0	8
6:15 AM	2	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	6
6:30 AM	2	0	0	0	0	0	0	0	0	4	1	0	0	2	0	0	0	0	0	9
6:45 AM	3	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	0	0	0	10
7:00 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	7
7:15 AM	1	0	0	0	0	0	0	0	0	2	1	0	1	3	0	0	0	0	0	8
7:30 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	5	0	0	0	0	0	10
7:45 AM	2	0	0	0	0	0	0	0	0	2	2	0	1	3	0	0	0	0	0	10
8:00 AM	0	0	0	0	0	0	0	0	0	2	2	0	1	2	0	0	0	0	0	7
8:15 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	4	0	0	0	0	0	7
8:30 AM	1	0	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	6
8:45 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	16	0	1	0	0	0	0	0	0	23	13	0	4	40	0	0	0	0	0	97
APPROACH %'s :	94.12%	0.00%	5.88%	0.00%					0.00%	63.89%	36.11%	0.00%	9.09%	90.91%	0.00%	0.00%				
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	3	0	0	0	0	0	0	0	0	8	7	0	2	14	0	0	0	0	0	34
PEAK HR FACTOR :	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.875	0.000	0.500	0.700	0.000	0.000	0.000	0.000	0.000	0.850
	0.375								0.938				0.800							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	6
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
4:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	7
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	5
5:30 PM	1	0	1	0	0	0	0	0	0	1	0	0	1	4	0	0	0	0	0	8
5:45 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	0	0	8
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	4
6:15 PM	1	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	0	0	0	8
6:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	4
6:45 PM	1	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	6	0	1	0	0	0	0	0	0	13	4	0	5	36	0	0	0	0	0	65
APPROACH %'s :	85.71%	0.00%	14.29%	0.00%					0.00%	76.47%	23.53%	0.00%	12.20%	87.80%	0.00%	0.00%				
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	2	0	1	0	0	0	0	0	0	6	0	0	2	13	0	0	0	0	0	24
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.813	0.000	0.000	0.000	0.000	0.000	0.750
	0.375								0.500				0.750							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston
Control: Signalized

Project ID: 25-430193-019
Date: 12/16/2025

Data - HT

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				I 90/Haul Rd				I 90/Haul Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	0	8	5	0	0	3	0	0	0	0	0	17
6:15 AM	1	0	0	0	0	0	0	0	0	4	7	0	0	5	0	0	0	1	0	18
6:30 AM	2	0	0	0	0	0	0	0	0	5	1	0	0	4	0	0	0	1	0	13
6:45 AM	10	0	1	0	0	0	0	0	0	4	2	0	0	8	0	0	0	0	0	25
7:00 AM	6	0	0	0	0	0	0	0	0	4	7	0	0	4	0	0	0	1	0	22
7:15 AM	3	0	0	0	0	0	0	0	0	4	4	0	0	10	0	0	0	0	0	21
7:30 AM	5	0	1	0	0	0	0	0	0	2	4	0	1	3	0	0	0	0	0	16
7:45 AM	2	0	0	0	0	0	0	0	0	6	7	0	0	6	0	0	1	0	0	22
8:00 AM	6	0	0	0	0	0	0	0	0	2	5	0	0	6	0	0	0	1	0	20
8:15 AM	3	0	1	0	0	0	0	0	0	6	6	0	0	3	0	0	0	0	0	19
8:30 AM	6	0	0	0	0	0	0	0	0	6	5	0	0	4	0	0	0	0	0	21
8:45 AM	6	0	0	0	0	0	0	0	0	4	5	0	0	5	0	0	0	0	0	20
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	51	0	3	0	0	0	0	0	0	55	58	0	1	61	0	0	1	4	0	234
APPROACH %'s :	94.44%	0.00%	5.56%	0.00%					0.00%	48.67%	51.33%	0.00%	1.61%	98.39%	0.00%	0.00%	20.00%	80.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	16	0	2	0	0	0	0	0	0	16	22	0	1	18	0	0	1	1	0	77
PEAK HR FACTOR :	0.667	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.786	0.000	0.250	0.750	0.000	0.000	0.250	0.250	0.000	0.875
	0.750								0.731				0.792							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
4:00 PM	6	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	1	1	13
4:15 PM	3	0	0	0	0	0	0	0	0	4	1	0	0	2	0	0	0	0	0	10
4:30 PM	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	5
4:45 PM	2	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	0	0	0	9
5:00 PM	2	0	0	0	0	0	0	0	0	1	1	0	0	6	0	0	0	1	0	11
5:15 PM	1	0	0	0	0	0	0	0	0	0	1	0	1	5	0	0	0	0	0	8
5:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	5
5:45 PM	1	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	1	0	8
6:00 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
6:15 PM	3	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	6
6:30 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
6:45 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	2	0	0	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	21	0	0	0	0	0	0	0	0	22	7	0	2	30	0	0	0	4	1	87
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	75.86%	24.14%	0.00%	6.25%	93.75%	0.00%	0.00%	0.00%	80.00%	20.00%	
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	5	0	0	0	0	0	0	0	0	5	3	0	1	15	0	0	0	3	0	32
PEAK HR FACTOR :	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.750	0.000	0.250	0.625	0.000	0.000	0.000	0.750	0.000	0.727
	0.625								0.667				0.667							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston
Control: Signalized

Project ID: 25-430193-019
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Pumphouse Rd				Pumphouse Rd				I 90/Haul Rd				I 90/Haul Rd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																				
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				EASTBOUND2			
	1.5	0	0.5	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3
APPROACH %'s :									0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%				
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pumphouse Rd & I 90/Haul Rd
City: Boston

Project ID: 25-430193-019
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Pumphouse Rd		Pumphouse Rd		I 90/Haul Rd		I 90/Haul Rd				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		WEST LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	3	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	3	0	0	0	0	3
6:30 AM	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	1	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	4	0	0	0	0	0	4
8:15 AM	0	0	0	0	2	0	0	0	0	0	2
8:30 AM	0	0	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	11	5	0	0	0	0	16
APPROACH %'s :					68.75%	31.25%					
PEAK HR :	**07:30 AM - 08:30 AM**										TOTAL
PEAK HR VOL :	0	0	0	0	6	1	0	0	0	0	7
PEAK HR FACTOR :					0.375	0.250					0.438
					0.438						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		WEST LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	2	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	1	1	0	1	0	4
5:00 PM	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	3	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	1	2	0	0	0	0	3
6:45 PM	0	0	0	0	0	2	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	12	1	0	1	0	16
APPROACH %'s :					14.29%	85.71%	100.00%	0.00%	100.00%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**										TOTAL
PEAK HR VOL :	0	0	0	0	0	5	0	0	0	0	5
PEAK HR FACTOR :						0.417					0.417
					0.417						

Prepared by National Data & Surveying Services

Pumphouse Rd & I 90/Haul Rd

Peak Hour Turning Movement Count

ID: 25-430193-019
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (Pumphouse Rd)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (I 90/Haul Rd)

AM	NOON	PM	
602	0	518	
0	0	0	0
0	0	0	0
272	0	104	1
171	0	362	1

WESTBOUND (I 90/Haul Rd)

PM	NOON	AM	
0	0	0	0
320	0	96	1
43	0	15	1
0	0	1	0
146	0	290	

NORTHBOUND (Pumphouse Rd)

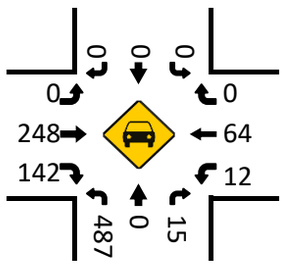
PM	405	0	198	0	42	PM
NOON	0	0	0	0	0	NOON
AM	186	0	506	0	17	AM
		0	1.5	0	0.5	

CONTROL

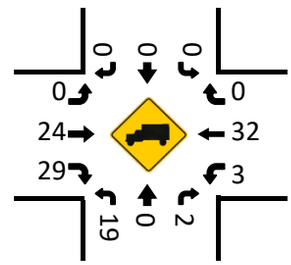
Signalized

TEV	1078 AM	0 NOON	1069 PM
PHF	0.96		0.95

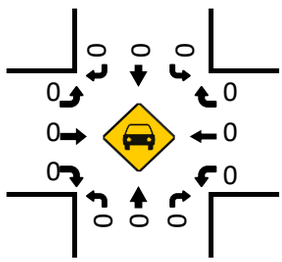
Cars (AM)



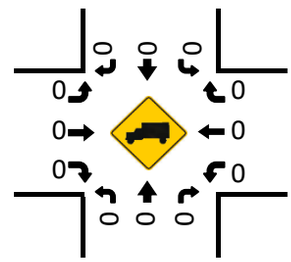
Total Trucks (AM)



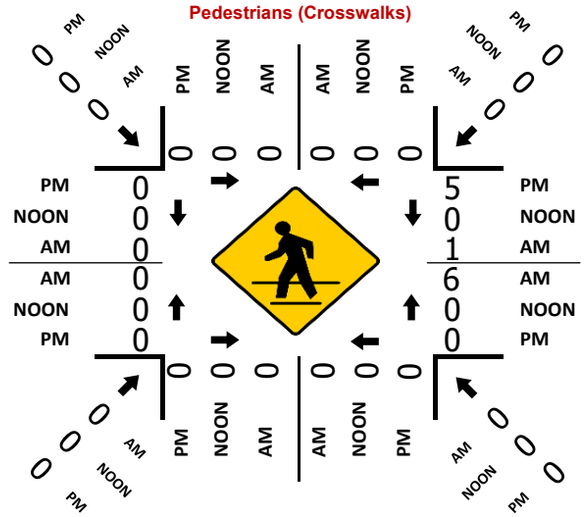
Cars (NOON)



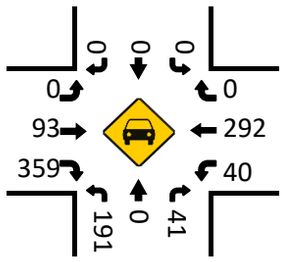
Total Trucks (NOON)



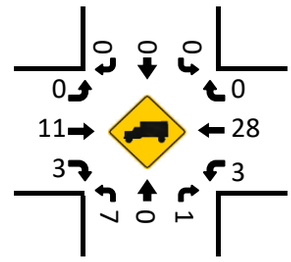
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-019
Location: Pumphouse Rd & I 90/Haul Rd
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pumphouse Rd Northbound						Pumphouse Rd Southbound						I 90/Haul Rd Eastbound						I 90/Haul Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	37	0	2	0	0	39	0	0	0	0	0	0	0	47	28	0	0	75	2	20	0	0	3	22	136
6:15 AM	57	0	3	0	0	60	0	0	0	0	0	0	0	59	34	0	0	93	8	17	0	0	3	25	178
6:30 AM	93	0	2	0	0	95	0	0	0	0	0	0	0	64	27	0	0	91	5	22	0	0	0	27	213
6:45 AM	91	0	6	0	0	97	0	0	0	0	0	0	0	59	26	0	0	85	9	18	0	0	1	27	209
Total	278	0	13	0	0	291	0	0	0	0	0	0	0	229	115	0	0	344	24	77	0	0	7	101	736
7:00 AM	114	0	4	0	0	118	0	0	0	0	0	0	0	50	40	0	0	90	5	24	0	0	0	29	237
7:15 AM	124	0	4	0	0	128	0	0	0	0	0	0	0	66	34	0	0	100	5	24	0	0	1	29	257
7:30 AM	143	0	8	0	0	151	0	0	0	0	0	0	0	64	34	0	0	98	3	30	0	0	1	33	282
7:45 AM	130	0	2	0	0	132	0	0	0	0	0	0	0	67	42	0	0	109	9	24	0	0	0	33	274
Total	511	0	18	0	0	529	0	0	0	0	0	0	0	247	150	0	0	397	22	102	0	0	2	124	1050
8:00 AM	118	0	2	0	0	120	0	0	0	0	0	0	0	70	45	0	0	115	1	23	0	1	4	25	260
8:15 AM	115	0	5	0	0	120	0	0	0	0	0	0	0	71	50	0	0	121	2	19	0	0	2	21	262
8:30 AM	110	0	9	0	0	119	0	0	0	0	0	0	0	71	39	0	0	110	7	19	0	0	1	26	255
8:45 AM	80	0	7	0	0	87	0	0	0	0	0	0	0	79	53	0	0	132	3	21	0	0	0	24	243
Total	423	0	23	0	0	446	0	0	0	0	0	0	0	291	187	0	0	478	13	82	0	1	7	96	1020
BREAK																									
4:00 PM	53	0	4	0	0	57	0	0	0	0	0	0	0	25	67	0	0	92	17	67	0	0	0	84	233
4:15 PM	51	0	6	0	0	57	0	0	0	0	0	0	0	23	70	0	0	93	12	79	0	0	2	91	241
4:30 PM	45	0	6	0	0	51	0	0	0	0	0	0	0	20	67	1	0	88	13	86	0	0	0	99	238
4:45 PM	38	0	5	0	0	43	0	0	0	0	0	0	0	22	50	0	1	72	17	92	0	0	2	109	224
Total	187	0	21	0	0	208	0	0	0	0	0	0	0	90	254	1	1	345	59	324	0	0	4	383	936
5:00 PM	53	0	10	0	0	63	0	0	0	0	0	0	0	16	69	0	0	85	10	113	0	0	1	123	271
5:15 PM	53	0	9	0	0	62	0	0	0	0	0	0	0	31	96	0	0	127	12	80	0	0	1	92	281
5:30 PM	52	0	15	0	0	67	0	0	0	0	0	0	0	27	82	0	0	109	9	69	0	0	3	78	254
5:45 PM	40	0	8	0	0	48	0	0	0	0	0	0	0	30	115	0	0	145	12	58	0	0	0	70	263
Total	198	0	42	0	0	240	0	0	0	0	0	0	0	104	362	0	0	466	43	320	0	0	5	363	1069
6:00 PM	30	0	10	0	0	40	0	0	0	0	0	0	0	31	115	0	0	146	9	49	0	0	0	58	244
6:15 PM	51	0	5	0	0	56	0	0	0	0	0	0	0	39	89	0	0	128	12	49	0	0	0	61	245
6:30 PM	33	0	10	0	0	43	0	0	0	0	0	0	0	29	85	0	0	114	8	51	0	0	3	59	216
6:45 PM	30	0	6	0	0	36	0	0	0	0	0	0	0	38	96	0	0	134	6	43	0	0	2	49	219
Total	144	0	31	0	0	175	0	0	0	0	0	0	0	137	385	0	0	522	35	192	0	0	5	227	924
Grand Total	1741	0	148	0	0	1889	0	0	0	0	0	0	0	1098	1453	1	1	2552	196	1097	0	1	30	1294	5735
Apprch %	92.2	0.0	7.8	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	43.0	56.9	0.0	0.0		15.1	84.8	0.0	0.1	2.3		
Total %	30.4	0.0	2.6	0.0	0.0	32.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	25.3	0.0	0.0	44.5	3.4	19.1	0.0	0.0	0.5	22.6	
Cars, PU, Vans	1647	0	143	0		1790	0	0	0	0		0	0	985	1371	1		2357	184	930	0	1		1115	5262
% Cars, PU, Vans	94.6	0.0	96.6	0.0		94.8	0.0	0.0	0.0	0.0		0.0	0.0	89.7	94.4	100.0		92.4	93.9	84.8	0.0	100.0		86.2	91.8
Buses	22	0	2	0		24	0	0	0	0		0	0	36	17	0		53	9	76	0	0		85	162
%Buses	1.3	0.0	1.4	0.0		1.3	0.0	0.0	0.0	0.0		0.0	0.0	3.3	1.2	0.0		2.1	4.6	6.9	0.0	0.0		6.6	2.8
Heavy Trucks	72	0	3	0		75	0	0	0	0		0	0	77	65	0		142	3	91	0	0		94	311
%Heavy Trucks	4.1	0.0	2.0	0.0		4.0	0.0	0.0	0.0	0.0		0.0	0.0	7.0	4.5	0.0		5.6	1.5	8.3	0.0	0.0		7.3	5.4

Project ID: 25-430193-019
Location: Pumphouse Rd & I 90/Haul Rd
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Pumphouse Rd Northbound					Pumphouse Rd Southbound					I 90/Haul Rd Eastbound					I 90/Haul Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	143	0	8	0	151	0	0	0	0	0	0	64	34	0	98	3	30	0	0	33	282
7:45 AM	130	0	2	0	132	0	0	0	0	0	0	67	42	0	109	9	24	0	0	33	274
8:00 AM	118	0	2	0	120	0	0	0	0	0	0	70	45	0	115	1	23	0	1	25	260
8:15 AM	115	0	5	0	120	0	0	0	0	0	0	71	50	0	121	2	19	0	0	21	262
Total Volume	506	0	17	0	523	0	0	0	0	0	0	272	171	0	443	15	96	0	1	112	1078
% App. Total	96.7	0.0	3.3	0.0	100	0.0	0.0	0.0	0.0	0	0.0	61.4	38.6	0.0	100	13.4	85.7	0.0	0.9	100	
PHF					0.866										0.915					0.848	0.958
Cars, PU, Vans	487	0	15	0	502	0	0	0	0	0	0	248	142	0	390	12	64	0	1	77	969
% Cars, PU, Vans	96.2	0.0	88.2	0.0	96.0	0.0	0.0	0.0	0.0	0.0	0.0	91.2	83.0	0.0	88.0	80.0	66.7	0.0	100.0	68.8	89.9
Buses	3	0	0	0	3	0	0	0	0	0	0	8	7	0	15	2	14	0	0	16	34
%Buses	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.1	0.0	3.4	13.3	14.6	0.0	0.0	14.3	3.2
Heavy Trucks	16	0	2	0	18	0	0	0	0	0	0	16	22	0	38	1	18	0	0	19	75
%Heavy Trucks	3.2	0.0	11.8	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	5.9	12.9	0.0	8.6	6.7	18.8	0.0	0.0	17.0	7.0

PM

	Pumphouse Rd Northbound					Pumphouse Rd Southbound					I 90/Haul Rd Eastbound					I 90/Haul Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	53	0	10	0	63	0	0	0	0	0	0	16	69	0	85	10	113	0	0	123	271
5:15 PM	53	0	9	0	62	0	0	0	0	0	0	31	96	0	127	12	80	0	0	92	281
5:30 PM	52	0	15	0	67	0	0	0	0	0	0	27	82	0	109	9	69	0	0	78	254
5:45 PM	40	0	8	0	48	0	0	0	0	0	0	30	115	0	145	12	58	0	0	70	263
Total Volume	198	0	42	0	240	0	0	0	0	0	0	104	362	0	466	43	320	0	0	363	1069
% App. Total	82.5	0.0	17.5	0.0	100	0.0	0.0	0.0	0.0	0	0.0	22.3	77.7	0.0	100	11.8	88.2	0.0	0.0	100	
PHF					0.896										0.803					0.738	0.954
Cars, PU, Vans	191	0	41	0	232	0	0	0	0	0	0	93	359	0	452	40	292	0	0	332	1016
% Cars, PU, Vans	96.5	0.0	97.6	0.0	96.7	0.0	0.0	0.0	0.0	0.0	0.0	89.4	99.2	0.0	97.0	93.0	91.3	0.0	0.0	91.5	95.0
Buses	2	0	1	0	3	0	0	0	0	0	0	6	0	0	6	2	13	0	0	15	24
%Buses	1.0	0.0	2.4	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	1.3	4.7	4.1	0.0	0.0	4.1	2.2
Heavy Trucks	5	0	0	0	5	0	0	0	0	0	0	5	3	0	8	1	15	0	0	16	29
%Heavy Trucks	2.5	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.8	0.0	1.7	2.3	4.7	0.0	0.0	4.4	2.7

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-020
Date: 12/16/2025

Data - Total

NS/EW Streets:	D St				D St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	19	8	3	0	0	12	0	2	3	33	47	2	4	3	3	0	139
6:15 AM	37	11	5	1	0	17	1	1	13	36	59	0	8	5	4	0	198
6:30 AM	34	6	4	0	2	16	4	0	7	31	65	0	10	9	5	0	193
6:45 AM	37	7	1	0	2	25	6	0	8	32	60	1	6	9	5	0	199
7:00 AM	58	17	0	0	0	24	3	1	10	20	72	4	8	6	5	0	228
7:15 AM	49	8	0	1	1	46	3	2	5	26	64	3	5	9	4	0	226
7:30 AM	71	11	1	0	0	35	7	1	12	24	80	2	5	9	5	0	263
7:45 AM	61	16	2	0	3	30	2	2	13	26	84	2	7	12	3	0	263
8:00 AM	73	14	4	0	1	51	2	5	14	42	70	2	9	21	3	0	311
8:15 AM	65	10	1	0	0	57	3	1	6	24	76	2	14	8	3	0	270
8:30 AM	81	13	2	1	1	37	4	4	7	30	81	3	15	10	9	0	298
8:45 AM	57	17	0	0	2	51	6	1	13	36	84	1	9	9	6	0	292
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	642	138	23	3	12	401	41	20	111	360	842	22	100	110	55	0	2880
APPROACH %'s :	79.65%	17.12%	2.85%	0.37%	2.53%	84.60%	8.65%	4.22%	8.31%	26.97%	63.07%	1.65%	37.74%	41.51%	20.75%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	276	54	7	1	4	196	15	11	40	132	311	8	47	48	21	0	1171
PEAK HR FACTOR :	0.852	0.794	0.438	0.250	0.500	0.860	0.625	0.550	0.714	0.786	0.926	0.667	0.783	0.571	0.583	0.000	0.941
	0.871				0.926				0.916				0.853				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	10	7	0	2	92	6	1	10	21	108	2	12	23	2	0	332
4:15 PM	49	16	4	1	1	111	7	0	13	16	141	2	8	9	4	0	382
4:30 PM	66	15	5	1	1	100	4	1	16	19	114	6	5	19	3	0	375
4:45 PM	53	19	5	1	1	109	6	2	8	22	112	5	14	24	0	0	381
5:00 PM	60	18	5	0	0	131	7	1	13	27	86	5	12	18	1	0	384
5:15 PM	50	17	3	1	3	131	4	1	20	27	99	1	14	18	5	0	394
5:30 PM	36	14	4	0	0	113	4	1	24	33	130	3	13	23	4	0	402
5:45 PM	44	30	6	1	0	114	4	0	20	27	112	3	10	21	4	0	396
6:00 PM	45	20	2	2	1	122	5	1	20	25	99	3	16	19	7	0	387
6:15 PM	32	24	4	2	2	120	10	0	10	18	91	6	9	17	6	0	351
6:30 PM	33	12	3	0	4	98	7	2	13	24	66	3	15	14	8	0	302
6:45 PM	39	14	11	2	0	80	7	0	19	27	63	6	10	21	4	0	303
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	543	209	59	11	15	1321	71	10	186	286	1221	45	138	226	48	0	4389
APPROACH %'s :	66.06%	25.43%	7.18%	1.34%	1.06%	93.23%	5.01%	0.71%	10.70%	16.46%	70.25%	2.59%	33.50%	54.85%	11.65%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	175	81	15	4	4	480	17	3	84	112	440	10	53	81	20	0	1579
PEAK HR FACTOR :	0.875	0.675	0.625	0.500	0.333	0.916	0.850	0.750	0.875	0.848	0.846	0.833	0.828	0.880	0.714	0.000	0.982
	0.849				0.906				0.850				0.917				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-020
Date: 12/16/2025

Data - Cars

NS/EW Streets:	D St				D St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	15	8	1	0	0	11	0	2	1	31	42	1	4	1	3	0	120
6:15 AM	34	11	5	1	0	16	1	1	10	30	55	0	8	4	4	0	180
6:30 AM	33	6	3	0	2	15	3	0	6	25	63	0	8	8	5	0	177
6:45 AM	36	4	1	0	2	23	6	0	8	26	55	1	6	8	5	0	181
7:00 AM	54	13	0	0	0	23	3	1	8	15	69	4	8	6	4	0	208
7:15 AM	45	7	0	1	1	37	2	1	4	20	60	3	4	8	2	0	195
7:30 AM	70	8	1	0	0	31	4	0	11	20	74	1	5	9	5	0	239
7:45 AM	58	15	2	0	2	29	2	2	13	23	78	2	6	10	3	0	245
8:00 AM	71	13	4	0	1	46	2	5	13	33	65	1	9	20	2	0	285
8:15 AM	62	7	0	0	0	52	2	1	5	21	73	2	14	7	3	0	249
8:30 AM	68	13	2	1	1	33	3	4	6	25	76	3	15	10	7	0	267
8:45 AM	45	16	0	0	2	48	5	1	11	30	81	1	9	8	6	0	263
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	591	121	19	3	11	364	33	18	96	299	791	19	96	99	49	0	2609
APPROACH %'s :	80.52%	16.49%	2.59%	0.41%	2.58%	85.45%	7.75%	4.23%	7.97%	24.81%	65.64%	1.58%	39.34%	40.57%	20.08%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	246	49	6	1	4	179	12	11	35	109	295	7	47	45	18	0	1064
PEAK HR FACTOR :	0.866	0.766	0.375	0.250	0.500	0.861	0.600	0.550	0.673	0.826	0.910	0.583	0.783	0.563	0.643	0.000	0.933
	0.858				0.920				0.907				0.859				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	9	7	0	2	90	6	1	10	19	106	2	11	23	2	0	321
4:15 PM	48	16	4	1	1	111	6	0	13	11	137	2	8	9	4	0	371
4:30 PM	62	13	5	1	1	99	4	0	16	17	110	6	5	18	3	0	360
4:45 PM	53	19	5	1	0	107	6	2	8	18	111	5	12	24	0	0	371
5:00 PM	59	17	5	0	0	131	7	1	13	19	86	5	12	18	1	0	374
5:15 PM	49	17	3	1	3	130	4	1	20	25	97	1	14	18	5	0	388
5:30 PM	35	13	4	0	0	112	3	1	24	29	127	3	13	23	4	0	391
5:45 PM	41	30	6	1	0	114	4	0	20	23	109	3	9	20	4	0	384
6:00 PM	44	20	2	2	1	122	5	1	20	21	95	3	16	18	7	0	377
6:15 PM	31	23	4	2	2	116	10	0	10	16	87	6	9	16	6	0	338
6:30 PM	33	12	3	0	4	95	7	2	13	19	65	3	14	14	8	0	292
6:45 PM	38	14	11	2	0	76	7	0	19	23	62	6	10	21	2	0	291
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	526	203	59	11	14	1303	69	9	186	240	1192	45	133	222	46	0	4258
APPROACH %'s :	65.83%	25.41%	7.38%	1.38%	1.00%	93.41%	4.95%	0.65%	11.18%	14.43%	71.68%	2.71%	33.17%	55.36%	11.47%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	169	80	15	4	4	478	16	3	84	98	428	10	52	79	20	0	1540
PEAK HR FACTOR :	0.862	0.667	0.625	0.500	0.333	0.919	0.800	0.750	0.875	0.845	0.843	0.833	0.813	0.859	0.714	0.000	0.985
	0.859				0.908				0.847				0.921				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-020
Date: 12/16/2025

Data - Buses

NS/EW Streets:	D St				D St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
6:15 AM	1	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	7
6:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
6:45 AM	0	0	0	0	0	1	0	0	0	3	1	0	0	0	0	0	5
7:00 AM	1	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
7:30 AM	1	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	5
7:45 AM	1	0	0	0	0	1	0	0	0	2	2	0	0	1	0	0	7
8:00 AM	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	5
8:15 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
8:30 AM	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5
8:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	1	0	0	0	3	0	0	0	35	7	0	0	2	0	0	54
APPROACH %'s :	85.71%	14.29%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	0	0	0	0	1	0	0	0	14	0	0	0	0	0	0	17
PEAK HR FACTOR :	0.500	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.000	0.850
	0.500				0.250				0.875								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0	5	3	0	0	0	0	0	8
4:30 PM	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:30 PM	1	0	0	0	0	1	0	0	0	3	2	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
6:00 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5
6:15 PM	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	4
6:30 PM	0	0	0	0	0	1	0	0	0	4	0	0	1	0	0	0	6
6:45 PM	1	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	9	0	0	0	39	9	0	2	1	0	0	63
APPROACH %'s :	66.67%	33.33%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	81.25%	18.75%	0.00%	66.67%	33.33%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	1	0	0	0	13	3	0	0	1	0	0	19
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.813	0.375	0.000	0.000	0.250	0.000	0.000	0.679
	0.250				0.250				0.800				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-020
Date: 12/16/2025

Data - HT

NS/EW Streets:	D St				D St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	4	0	2	0	0	1	0	0	2	1	4	1	0	2	0	0	17
6:15 AM	2	0	0	0	0	1	0	0	3	2	2	0	0	1	0	0	11
6:30 AM	1	0	1	0	0	1	1	0	1	4	2	0	2	0	0	0	13
6:45 AM	1	3	0	0	0	1	0	0	0	3	4	0	0	1	0	0	13
7:00 AM	3	3	0	0	0	1	0	0	2	2	3	0	0	0	1	0	15
7:15 AM	4	1	0	0	0	9	1	1	1	3	4	0	1	1	2	0	28
7:30 AM	0	3	0	0	0	4	3	1	1	1	5	1	0	0	0	0	19
7:45 AM	2	1	0	0	1	0	0	0	0	1	4	0	1	1	0	0	11
8:00 AM	2	1	0	0	0	4	0	0	1	5	5	1	0	1	1	0	21
8:15 AM	2	3	1	0	0	5	1	0	1	0	3	0	0	1	0	0	17
8:30 AM	12	0	0	0	0	4	1	0	1	1	5	0	0	0	2	0	26
8:45 AM	12	1	0	0	0	3	1	0	2	3	3	0	0	1	0	0	26
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	45	16	4	0	1	34	8	2	15	26	44	3	4	9	6	0	217
APPROACH %'s :	69.23%	24.62%	6.15%	0.00%	2.22%	75.56%	17.78%	4.44%	17.05%	29.55%	50.00%	3.41%	21.05%	47.37%	31.58%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	28	5	1	0	0	16	3	0	5	9	16	1	0	3	3	0	90
PEAK HR FACTOR :	0.583	0.417	0.250	0.000	0.000	0.800	0.750	0.000	0.625	0.450	0.800	0.250	0.000	0.750	0.375	0.000	0.865
	0.654				0.792				0.646				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	7
4:15 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
4:30 PM	4	1	0	0	0	1	0	1	0	1	3	0	0	1	0	0	12
4:45 PM	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	0	5
5:00 PM	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
5:15 PM	1	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	4
5:30 PM	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	4
5:45 PM	3	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	7
6:00 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	5
6:15 PM	1	1	0	0	0	2	0	0	0	1	3	0	0	1	0	0	9
6:30 PM	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	4
6:45 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	5	0	0	1	9	2	1	0	7	20	0	3	3	2	0	68
APPROACH %'s :	75.00%	25.00%	0.00%	0.00%	7.69%	69.23%	15.38%	7.69%	0.00%	25.93%	74.07%	0.00%	37.50%	37.50%	25.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	5	1	0	0	0	1	1	0	0	1	9	0	1	1	0	0	20
PEAK HR FACTOR :	0.417	0.250	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.750	0.000	0.250	0.250	0.000	0.000	0.714
	0.500				0.500				0.833				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-020
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	D St				D St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
7:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	9	1	0	0	2	0	0	0	0	0	0	0	1	0	0	22
APPROACH %'s :	47.37%	47.37%	5.26%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	4	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	10
PEAK HR FACTOR :	0.500	0.625	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
	0.750				0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	0	0	0	2	0	0	0.5	1	1.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
4:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
6:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	4	1	0	0	16	0	0	0	1	0	0	1	1	0	0	26
APPROACH %'s :	28.57%	57.14%	14.29%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	1	1	0	0	6	0	0	0	1	0	0	0	0	0	0	9
PEAK HR FACTOR :	0.000	0.250	0.250	0.000	0.000	0.300	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.450
	0.500				0.300				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: D St & Congress St
City: Boston

Project ID: 25-430193-020
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	D St		D St		Congress St		Congress St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	1	0	1	0	0	4	0	1	7
6:15 AM	1	4	0	0	5	2	0	1	13
6:30 AM	0	2	3	0	1	3	2	2	13
6:45 AM	0	6	3	7	4	0	4	0	24
7:00 AM	2	2	2	3	3	3	1	0	16
7:15 AM	2	9	1	1	5	0	4	4	26
7:30 AM	2	7	3	0	6	1	3	5	27
7:45 AM	4	21	4	5	7	2	9	9	61
8:00 AM	7	14	0	4	7	0	13	0	45
8:15 AM	2	18	3	5	6	4	9	3	50
8:30 AM	5	15	4	4	6	1	6	1	42
8:45 AM	3	12	1	2	7	1	15	4	45
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	29	110	25	31	57	21	66	30	369
APPROACH %'s :	20.86%	79.14%	44.64%	55.36%	73.08%	26.92%	68.75%	31.25%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	17	59	8	15	26	6	43	8	182
PEAK HR FACTOR :	0.607	0.819	0.500	0.750	0.929	0.375	0.717	0.500	0.910
	0.905		0.719		0.800		0.671		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	3	3	1	0	0	3	2	7	19
4:15 PM	9	4	1	2	7	5	11	4	43
4:30 PM	7	3	1	6	1	2	2	6	28
4:45 PM	14	12	0	9	7	9	5	12	68
5:00 PM	6	6	11	12	2	7	8	9	61
5:15 PM	8	4	1	3	7	6	3	6	38
5:30 PM	9	2	7	2	7	11	4	2	44
5:45 PM	11	4	5	2	5	7	11	8	53
6:00 PM	10	16	7	2	3	4	9	14	65
6:15 PM	14	3	6	8	8	20	14	5	78
6:30 PM	3	4	1	5	4	5	3	7	32
6:45 PM	3	2	2	1	0	4	3	6	21
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	97	63	43	52	51	83	75	86	550
APPROACH %'s :	60.63%	39.38%	45.26%	54.74%	38.06%	61.94%	46.58%	53.42%	
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	38	26	20	9	22	28	27	30	200
PEAK HR FACTOR :	0.864	0.406	0.714	0.750	0.786	0.636	0.614	0.536	0.769
	0.615		0.806		0.694		0.620		

Prepared by National Data & Surveying Services

D St & Congress St

Peak Hour Turning Movement Count

ID: 25-430193-020
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 05:15 PM - 06:15 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (D St)

AM	15	196	4	11	126	AM
NOON	0	0	0	0	0	NOON
PM	17	480	4	3	188	PM
	0	2	0	0		

EASTBOUND (Congress St)

AM	NOON	PM	
347	0	283	
8	0	10	0
40	0	84	0.5
132	0	112	1
311	0	440	1.5

WESTBOUND (Congress St)

PM	NOON	AM	
20	0	21	0.5
81	0	48	1
53	0	47	0.5
0	0	0	0
131	0	143	

CONTROL

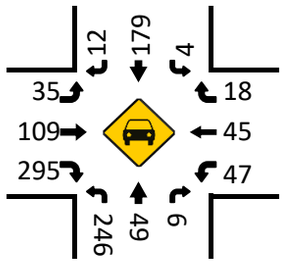
Signalized

TEV	1171 AM	0 NOON	1579 PM
PHF	0.94		0.98

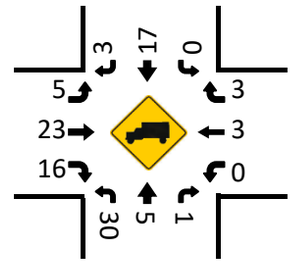
NORTHBOUND (D St)

PM	977	4	175	81	15	PM
NOON	0	0	0	0	0	NOON
AM	555	1	276	54	7	AM
		0	2	1	0	

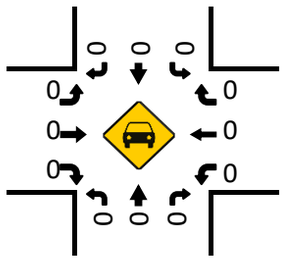
Cars (AM)



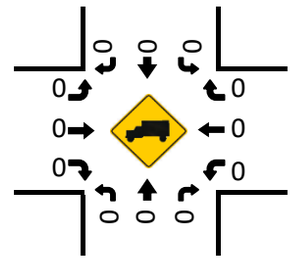
Total Trucks (AM)



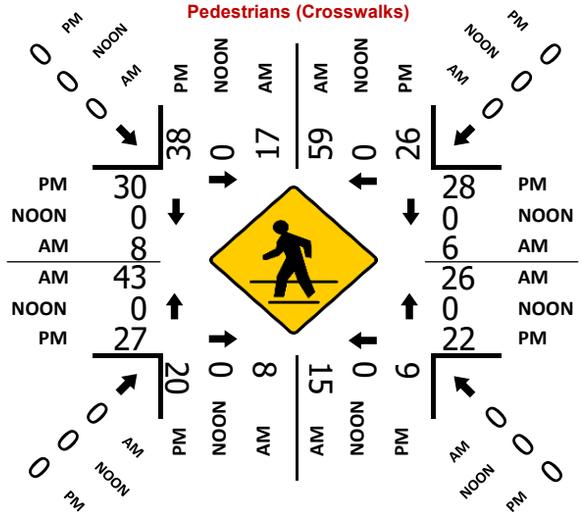
Cars (NOON)



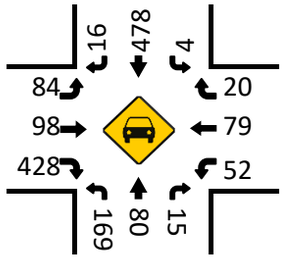
Total Trucks (NOON)



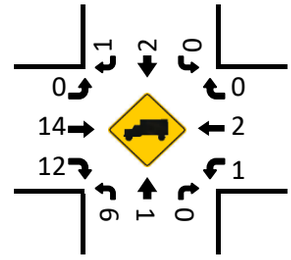
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-020
Location: D St & Congress St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	D St Northbound						D St Southbound						Congress St Eastbound						Congress St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	19	8	3	0	1	30	0	12	0	2	1	14	3	33	47	2	1	85	4	3	3	0	4	10	139
6:15 AM	37	11	5	1	0	54	0	17	1	1	5	19	13	36	59	0	1	108	8	5	4	0	7	17	198
6:30 AM	34	6	4	0	3	44	2	16	4	0	2	22	7	31	65	0	4	103	10	9	5	0	4	24	193
6:45 AM	37	7	1	0	10	45	2	25	6	0	6	33	8	32	60	1	4	101	6	9	5	0	4	20	199
Total	127	32	13	1	14	173	4	70	11	3	14	88	31	132	231	3	10	397	28	26	17	0	19	71	729
7:00 AM	58	17	0	0	5	75	0	24	3	1	4	28	10	20	72	4	1	106	8	6	5	0	6	19	228
7:15 AM	49	8	0	1	2	58	1	46	3	2	11	52	5	26	64	3	8	98	5	9	4	0	5	18	226
7:30 AM	71	11	1	0	3	83	0	35	7	1	9	43	12	24	80	2	8	118	5	9	5	0	7	19	263
7:45 AM	61	16	2	0	9	79	3	30	2	2	25	37	13	26	84	2	18	125	7	12	3	0	9	22	263
Total	239	52	3	1	19	295	4	135	15	6	49	160	40	96	300	11	35	447	25	36	17	0	27	78	980
8:00 AM	73	14	4	0	4	91	1	51	2	5	21	59	14	42	70	2	13	128	9	21	3	0	7	33	311
8:15 AM	65	10	1	0	8	76	0	57	3	1	20	61	6	24	76	2	12	108	14	8	3	0	10	25	270
8:30 AM	81	13	2	1	8	97	1	37	4	4	20	46	7	30	81	3	7	121	15	10	9	0	7	34	298
8:45 AM	57	17	0	0	3	74	2	51	6	1	15	60	13	36	84	1	19	134	9	9	6	0	8	24	292
Total	276	54	7	1	23	338	4	196	15	11	76	226	40	132	311	8	51	491	47	48	21	0	32	116	1171
BREAK																									
4:00 PM	36	10	7	0	1	53	2	92	6	1	6	101	10	21	108	2	9	141	12	23	2	0	3	37	332
4:15 PM	49	16	4	1	3	70	1	111	7	0	13	119	13	16	141	2	15	172	8	9	4	0	12	21	382
4:30 PM	66	15	5	1	7	87	1	100	4	1	10	106	16	19	114	6	8	155	5	19	3	0	3	27	375
4:45 PM	53	19	5	1	9	78	1	109	6	2	26	118	8	22	112	5	17	147	14	24	0	0	16	38	381
Total	204	60	21	3	20	288	5	412	23	4	55	444	47	78	475	15	49	615	39	75	9	0	34	123	1470
5:00 PM	60	18	5	0	23	83	0	131	7	1	12	139	13	27	86	5	17	131	12	18	1	0	9	31	384
5:15 PM	50	17	3	1	4	71	3	131	4	1	12	139	20	27	99	1	9	147	14	18	5	0	13	37	394
5:30 PM	36	14	4	0	9	54	0	113	4	1	11	118	24	33	130	3	6	190	13	23	4	0	18	40	402
5:45 PM	44	30	6	1	7	81	0	114	4	0	15	118	20	27	112	3	19	162	10	21	4	0	12	35	396
Total	190	79	18	2	43	289	3	489	19	3	50	514	77	114	427	12	51	630	49	80	14	0	52	143	1576
6:00 PM	45	20	2	2	9	69	1	122	5	1	26	129	20	25	99	3	23	147	16	19	7	0	7	42	387
6:15 PM	32	24	4	2	14	62	2	120	10	0	17	132	10	18	91	6	19	125	9	17	6	0	28	32	351
6:30 PM	33	12	3	0	6	48	4	98	7	2	7	111	13	24	66	3	10	106	15	14	8	0	9	37	302
6:45 PM	39	14	11	2	3	66	0	80	7	0	5	87	19	27	63	6	9	115	10	21	4	0	4	35	303
Total	149	70	20	6	32	245	7	420	29	3	55	459	62	94	319	18	61	493	50	71	25	0	48	146	1343
Grand Total	1185	347	82	14	151	1628	27	1722	112	30	299	1891	297	646	2063	67	257	3073	238	336	103	0	212	677	7269
Apprch %	72.8	21.3	5.0	0.9	9.3		1.4	91.1	5.9	1.6	15.8		9.7	21.0	67.1	2.2	8.4		35.2	49.6	15.2	0.0	31.3		
Total %	16.3	4.8	1.1	0.2	2.1	22.4	0.4	23.7	1.5	0.4	4.1	26.0	4.1	8.9	28.4	0.9	3.5	42.3	3.3	4.6	1.4	0.0	2.9	9.3	
Cars, PU, Vans	1117	324	78	14		1533	25	1667	102	27		1821	282	539	1983	64		2868	229	321	95	0		645	6867
% Cars, PU, Vans	94.3	93.4	95.1	100.0		94.2	92.6	96.8	91.1	90.0		96.3	94.9	83.4	96.1	95.5		93.3	96.2	95.5	92.2	0.0		95.3	94.5
Buses	8	2	0	0		10	0	12	0	0		12	0	74	16	0		90	2	3	0	0		5	117
%Buses	0.7	0.6	0.0	0.0		0.6	0.0	0.7	0.0	0.0		0.6	0.0	11.5	0.8	0.0		2.9	0.8	0.9	0.0	0.0		0.7	1.6
Heavy Trucks	60	21	4	0		85	2	43	10	3		58	15	33	64	3		115	7	12	8	0		27	285
%Heavy Trucks	5.1	6.1	4.9	0.0		5.2	7.4	2.5	8.9	10.0		3.1	5.1	5.1	3.1	4.5		3.7	2.9	3.6	7.8	0.0		4.0	3.9

Project ID: 25-430193-020
Location: D St & Congress St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	D St Northbound					D St Southbound					Congress St Eastbound					Congress St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	73	14	4	0	91	1	51	2	5	59	14	42	70	2	128	9	21	3	0	33	311
8:15 AM	65	10	1	0	76	0	57	3	1	61	6	24	76	2	108	14	8	3	0	25	270
8:30 AM	81	13	2	1	97	1	37	4	4	46	7	30	81	3	121	15	10	9	0	34	298
8:45 AM	57	17	0	0	74	2	51	6	1	60	13	36	84	1	134	9	9	6	0	24	292
Total Volume	276	54	7	1	338	4	196	15	11	226	40	132	311	8	491	47	48	21	0	116	1171
% App. Total	81.7	16.0	2.1	0.3	100	1.8	86.7	6.6	4.9	100	8.1	26.9	63.3	1.6	100	40.5	41.4	18.1	0.0	100	
PHF					0.871					0.926					0.916					0.853	0.941
Cars, PU, Vans	246	49	6	1	302	4	179	12	11	206	35	109	295	7	446	47	45	18	0	110	1064
% Cars, PU, Vans	89.1	90.7	85.7	100.0	89.3	100.0	91.3	80.0	100.0	91.2	87.5	82.6	94.9	87.5	90.8	100.0	93.8	85.7	0.0	94.8	90.9
Buses	2	0	0	0	2	0	1	0	0	1	0	14	0	0	14	0	0	0	0	0	17
%Buses	0.7	0.0	0.0	0.0	0.6	0.0	0.5	0.0	0.0	0.4	0.0	10.6	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	1.5
Heavy Trucks	28	5	1	0	34	0	16	3	0	19	5	9	16	1	31	0	3	3	0	6	90
%Heavy Trucks	10.1	9.3	14.3	0.0	10.1	0.0	8.2	20.0	0.0	8.4	12.5	6.8	5.1	12.5	6.3	0.0	6.3	14.3	0.0	5.2	7.7

PM

	D St Northbound					D St Southbound					Congress St Eastbound					Congress St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
5:15 PM	50	17	3	1	71	3	131	4	1	139	20	27	99	1	147	14	18	5	0	37	394
5:30 PM	36	14	4	0	54	0	113	4	1	118	24	33	130	3	190	13	23	4	0	40	402
5:45 PM	44	30	6	1	81	0	114	4	0	118	20	27	112	3	162	10	21	4	0	35	396
6:00 PM	45	20	2	2	69	1	122	5	1	129	20	25	99	3	147	16	19	7	0	42	387
Total Volume	175	81	15	4	275	4	480	17	3	504	84	112	440	10	646	53	81	20	0	154	1579
% App. Total	63.6	29.5	5.5	1.5	100	0.8	95.2	3.4	0.6	100	13.0	17.3	68.1	1.5	100	34.4	52.6	13.0	0.0	100	
PHF					0.849					0.906					0.850					0.917	0.982
Cars, PU, Vans	169	80	15	4	268	4	478	16	3	501	84	98	428	10	620	52	79	20	0	151	1540
% Cars, PU, Vans	96.6	98.8	100.0	100.0	97.5	100.0	99.6	94.1	100.0	99.4	100.0	87.5	97.3	100.0	96.0	98.1	97.5	100.0	0.0	98.1	97.5
Buses	1	0	0	0	1	0	1	0	0	1	0	13	3	0	16	0	1	0	0	1	19
%Buses	0.6	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.0	0.2	0.0	11.6	0.7	0.0	2.5	0.0	1.2	0.0	0.0	0.6	1.2
Heavy Trucks	5	1	0	0	6	0	1	1	0	2	0	1	9	0	10	1	1	0	0	2	20
%Heavy Trucks	2.9	1.2	0.0	0.0	2.2	0.0	0.2	5.9	0.0	0.4	0.0	0.9	2.0	0.0	1.5	1.9	1.2	0.0	0.0	1.3	1.3

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-021
Date: 12/16/2025

Data - Total

NS/EW Streets:	B St				B St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	30	29	70	0	6	11	9	0	17	22	6	0	25	4	6	0	235
6:15 AM	39	28	81	1	2	11	3	0	17	28	11	0	35	2	6	0	264
6:30 AM	28	28	79	0	5	7	6	0	26	22	14	0	43	9	5	0	272
6:45 AM	60	26	84	1	6	8	8	0	30	24	7	0	54	12	11	0	331
7:00 AM	38	31	88	0	6	9	10	0	33	20	13	0	73	9	4	1	335
7:15 AM	33	34	71	0	5	24	9	1	45	26	9	0	55	7	14	0	333
7:30 AM	39	31	80	0	10	32	6	0	43	27	5	1	65	15	11	0	365
7:45 AM	52	45	84	0	2	22	13	1	52	35	12	1	88	16	13	0	436
8:00 AM	68	46	91	0	3	20	17	0	60	40	15	2	70	17	9	0	458
8:15 AM	56	56	70	0	11	24	12	1	59	29	12	0	96	12	9	0	447
8:30 AM	58	39	90	0	7	24	10	0	52	29	11	0	65	14	14	0	413
8:45 AM	70	56	77	0	6	21	20	0	58	30	18	2	67	12	10	0	447
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	571	449	965	2	69	213	123	3	492	332	133	6	736	129	112	1	4336
APPROACH %'s :	28.74%	22.60%	48.57%	0.10%	16.91%	52.21%	30.15%	0.74%	51.09%	34.48%	13.81%	0.62%	75.26%	13.19%	11.45%	0.10%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	252	197	328	0	27	89	59	1	229	128	56	4	298	55	42	0	1765
PEAK HR FACTOR :	0.900	0.879	0.901	0.000	0.614	0.927	0.738	0.250	0.954	0.800	0.778	0.500	0.776	0.809	0.750	0.000	0.963
	0.948				0.917				0.891				0.844				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	69	37	91	0	9	41	35	0	13	41	32	1	69	22	12	0	472
4:15 PM	46	27	110	0	7	55	25	0	17	36	43	2	65	23	17	0	473
4:30 PM	44	19	94	0	10	57	42	0	17	43	53	4	111	26	14	0	534
4:45 PM	59	39	96	0	8	62	30	0	15	30	45	3	89	33	10	1	520
5:00 PM	66	33	100	0	14	53	41	0	18	24	43	1	112	15	17	2	539
5:15 PM	73	35	87	0	10	58	29	0	27	45	34	0	93	24	9	0	524
5:30 PM	51	27	107	0	8	38	40	2	28	40	35	4	56	33	12	2	483
5:45 PM	75	42	116	1	9	40	30	0	10	37	29	6	79	23	15	0	512
6:00 PM	36	27	94	1	4	63	27	0	28	48	31	6	67	26	13	0	471
6:15 PM	41	33	80	0	12	44	30	0	23	26	38	5	84	31	18	0	465
6:30 PM	30	30	66	1	6	39	30	0	17	40	34	4	59	16	19	0	391
6:45 PM	36	36	53	0	12	59	31	2	13	50	31	3	55	30	16	1	428
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	626	385	1094	3	109	609	390	4	226	460	448	39	939	302	172	6	5812
APPROACH %'s :	29.70%	18.26%	51.90%	0.14%	9.80%	54.77%	35.07%	0.36%	19.27%	39.22%	38.19%	3.32%	66.17%	21.28%	12.12%	0.42%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	242	126	377	0	42	230	142	0	77	142	175	8	405	98	50	3	2117
PEAK HR FACTOR :	0.829	0.808	0.943	0.000	0.750	0.927	0.845	0.000	0.713	0.789	0.825	0.500	0.904	0.742	0.735	0.375	0.982
	0.936				0.950				0.859				0.921				

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-021
Date: 12/16/2025

Data - Cars

NS/EW Streets:	B St				B St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	29	27	64	0	6	10	8	0	16	18	4	0	21	2	6	0	211
6:15 AM	37	28	72	1	2	10	2	0	16	25	11	0	29	2	6	0	241
6:30 AM	24	27	73	0	4	7	4	0	23	21	14	0	40	7	4	0	248
6:45 AM	59	25	76	1	6	6	7	0	30	21	7	0	52	11	11	0	312
7:00 AM	36	28	82	0	4	8	9	0	32	16	13	0	71	9	3	1	312
7:15 AM	33	34	63	0	4	24	9	1	43	22	8	0	45	6	14	0	306
7:30 AM	36	31	70	0	10	29	6	0	43	26	5	0	62	15	10	0	343
7:45 AM	50	44	77	0	2	19	12	1	52	35	11	1	82	15	11	0	412
8:00 AM	67	46	82	0	2	20	17	0	59	35	15	2	68	17	9	0	439
8:15 AM	54	56	66	0	10	21	12	1	57	28	10	0	91	11	9	0	426
8:30 AM	57	39	81	0	7	20	9	0	51	28	10	0	57	13	12	0	384
8:45 AM	69	56	69	0	6	21	18	0	57	29	18	2	50	12	9	0	416
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	551	441	875	2	63	195	113	3	479	304	126	5	668	120	104	1	4050
APPROACH %'s :	29.48%	23.60%	46.82%	0.11%	16.84%	52.14%	30.21%	0.80%	52.41%	33.26%	13.79%	0.55%	74.80%	13.44%	11.65%	0.11%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	247	197	298	0	25	82	56	1	224	120	53	4	266	53	39	0	1665
PEAK HR FACTOR :	0.895	0.879	0.909	0.000	0.625	0.976	0.778	0.250	0.949	0.857	0.736	0.500	0.731	0.779	0.813	0.000	0.948
	0.951				0.911				0.903				0.806				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	68	36	89	0	9	41	34	0	13	39	32	1	65	21	11	0	459
4:15 PM	44	27	100	0	7	48	24	0	15	36	41	2	64	22	15	0	445
4:30 PM	42	19	89	0	10	55	41	0	14	41	53	4	105	26	12	0	511
4:45 PM	59	39	91	0	8	62	30	0	14	30	45	3	89	33	10	1	514
5:00 PM	64	32	92	0	14	52	39	0	18	24	43	1	111	13	16	2	521
5:15 PM	70	35	84	0	9	58	28	0	24	45	34	0	91	21	8	0	507
5:30 PM	50	26	100	0	8	36	39	2	26	39	34	4	54	32	11	2	463
5:45 PM	72	42	112	1	9	40	30	0	9	34	29	6	77	19	12	0	492
6:00 PM	36	27	88	1	4	63	27	0	28	47	31	6	66	26	12	0	462
6:15 PM	39	33	74	0	12	44	29	0	23	25	37	5	81	30	16	0	448
6:30 PM	29	29	60	1	6	39	29	0	16	40	34	4	58	16	17	0	378
6:45 PM	35	35	49	0	12	59	31	2	12	50	31	3	54	30	15	1	419
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	608	380	1028	3	108	597	381	4	212	450	444	39	915	289	155	6	5619
APPROACH %'s :	30.11%	18.82%	50.92%	0.15%	9.91%	54.77%	34.95%	0.37%	18.52%	39.30%	38.78%	3.41%	67.03%	21.17%	11.36%	0.44%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	235	125	356	0	41	227	138	0	70	140	175	8	396	93	46	3	2053
PEAK HR FACTOR :	0.839	0.801	0.967	0.000	0.732	0.915	0.841	0.000	0.729	0.778	0.825	0.500	0.892	0.705	0.719	0.375	0.985
	0.947				0.958				0.877				0.941				

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-021
Date: 12/16/2025

Data - Buses

NS/EW Streets:	B St				B St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	0	6	0	0	0	0	0	0	0	0	0	1	0	0	0	7
6:30 AM	1	1	2	0	0	0	0	0	1	0	0	0	1	0	0	0	6
6:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:00 AM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4
7:30 AM	2	0	5	0	0	0	0	0	0	0	0	1	1	0	0	0	9
7:45 AM	1	0	3	0	0	0	1	0	0	0	1	0	1	0	1	0	8
8:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	4
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	2	41	0	0	0	1	0	1	0	1	1	7	1	1	0	60
APPROACH %'s :	8.51%	4.26%	87.23%	0.00%	0.00%	0.00%	100.00%	0.00%	33.33%	0.00%	33.33%	33.33%	77.78%	11.11%	11.11%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	13	0	0	0	0	0	0	0	0	0	2	1	0	0	16
PEAK HR FACTOR :	0.000	0.000	0.813	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	1.000
	0.813												0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	1	0	8	0	0	0	0	0	1	0	1	0	0	0	0	0	11
4:30 PM	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	1	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	8
5:15 PM	1	0	3	0	0	0	1	0	1	0	0	0	0	0	0	0	6
5:30 PM	0	0	6	0	0	0	0	0	0	0	0	0	1	0	0	0	7
5:45 PM	3	0	2	0	0	0	0	0	0	1	0	0	0	1	2	0	9
6:00 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:15 PM	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:45 PM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	1	48	0	0	0	1	0	2	1	1	0	1	3	2	0	70
APPROACH %'s :	16.95%	1.69%	81.36%	0.00%	0.00%	0.00%	100.00%	0.00%	50.00%	25.00%	25.00%	0.00%	16.67%	50.00%	33.33%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	4	0	14	0	0	0	1	0	1	0	0	0	0	2	0	0	22
PEAK HR FACTOR :	0.500	0.000	0.700	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.688
	0.750				0.250				0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-021
Date: 12/16/2025

Data - HT

NS/EW Streets:	B St				B St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	2	4	0	0	1	1	0	1	4	2	0	4	2	0	0	22
6:15 AM	2	0	3	0	0	1	1	0	1	3	0	0	5	0	0	0	16
6:30 AM	3	0	4	0	1	0	2	0	2	1	0	0	2	2	1	0	18
6:45 AM	1	1	4	0	0	2	1	0	0	3	0	0	2	1	0	0	15
7:00 AM	2	2	3	0	2	1	1	0	1	4	0	0	2	0	1	0	19
7:15 AM	0	0	5	0	1	0	0	0	2	4	1	0	9	1	0	0	23
7:30 AM	1	0	5	0	0	3	0	0	0	1	0	0	2	0	1	0	13
7:45 AM	1	1	4	0	0	3	0	0	0	0	0	0	5	1	1	0	16
8:00 AM	1	0	5	0	1	0	0	0	1	5	0	0	2	0	0	0	15
8:15 AM	2	0	1	0	1	3	0	0	2	1	2	0	4	1	0	0	17
8:30 AM	1	0	6	0	0	4	1	0	1	1	1	0	8	0	2	0	25
8:45 AM	1	0	5	0	0	0	2	0	1	1	0	0	16	0	1	0	27
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	16	6	49	0	6	18	9	0	12	28	6	0	61	8	7	0	226
APPROACH %'s :	22.54%	8.45%	69.01%	0.00%	18.18%	54.55%	27.27%	0.00%	26.09%	60.87%	13.04%	0.00%	80.26%	10.53%	9.21%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	0	17	0	2	7	3	0	5	8	3	0	30	1	3	0	84
PEAK HR FACTOR :	0.625	0.000	0.708	0.000	0.500	0.438	0.375	0.000	0.625	0.400	0.375	0.000	0.469	0.250	0.375	0.000	0.778
	0.786				0.600				0.667				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	0	1	0	0	2	0	0	4	1	1	0	10
4:15 PM	1	0	2	0	0	7	1	0	1	0	1	0	1	1	2	0	17
4:30 PM	0	0	2	0	0	2	1	0	3	2	0	0	6	0	2	0	18
4:45 PM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	3
5:00 PM	1	1	3	0	0	1	2	0	0	0	0	0	1	0	1	0	10
5:15 PM	2	0	0	0	1	0	0	0	2	0	0	0	2	3	1	0	11
5:30 PM	1	1	1	0	0	2	1	0	2	1	1	0	1	1	1	0	13
5:45 PM	0	0	2	0	0	0	0	0	1	2	0	0	2	3	1	0	11
6:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	4
6:15 PM	1	0	2	0	0	0	1	0	0	1	1	0	3	1	2	0	12
6:30 PM	1	1	3	0	0	0	1	0	1	0	0	0	1	0	2	0	10
6:45 PM	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	4	18	0	1	12	8	0	12	9	3	0	23	10	15	0	123
APPROACH %'s :	26.67%	13.33%	60.00%	0.00%	4.76%	57.14%	38.10%	0.00%	50.00%	37.50%	12.50%	0.00%	47.92%	20.83%	31.25%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	3	1	7	0	1	3	3	0	6	2	0	0	9	3	4	0	42
PEAK HR FACTOR :	0.375	0.250	0.583	0.000	0.250	0.375	0.375	0.000	0.500	0.250	0.000	0.000	0.375	0.250	0.500	0.000	0.583
	0.550				0.583				0.400				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston
Control: Signalized

Project ID: 25-430193-021
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	B St				B St				Congress St				Congress St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	0	1	0	0	0	5	1	0	9
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.500

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	0.5	1.5	1	0	0	2	1	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	2	0	5
6:15 PM	0	0	0	0	1	0	1	0	1	2	0	0	0	0	1	0	6
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	2	0	2	0	2	9	0	0	0	5	7	0	28
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	50.00%	0.00%	50.00%	0.00%	18.18%	81.82%	0.00%	0.00%	0.00%	41.67%	58.33%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.625
	0.250				0.500				0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: B St & Congress St
City: Boston

Project ID: 25-430193-021
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	B St		B St		Congress St		Congress St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	1	1	0	1	0	1	0	0	4
6:15 AM	2	2	0	0	0	0	2	0	6
6:30 AM	0	10	3	3	2	0	2	2	22
6:45 AM	0	7	1	8	0	1	2	2	21
7:00 AM	10	7	0	5	2	1	3	0	28
7:15 AM	6	6	1	4	1	0	0	1	19
7:30 AM	6	8	0	1	0	0	1	0	16
7:45 AM	15	18	6	6	1	0	6	2	54
8:00 AM	17	22	3	0	1	2	4	1	50
8:15 AM	19	13	1	2	1	0	4	2	42
8:30 AM	16	19	1	7	6	9	5	0	63
8:45 AM	21	22	3	3	8	3	4	1	65
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	113	135	19	40	22	17	33	11	390
APPROACH %'s :	45.56%	54.44%	32.20%	67.80%	56.41%	43.59%	75.00%	25.00%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	73	76	8	12	16	14	17	4	220
PEAK HR FACTOR :	0.869	0.864	0.667	0.429	0.500	0.389	0.850	0.500	
	0.866		0.625		0.500		0.875		0.846

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	12	11	6	2	5	3	0	3	42
4:15 PM	19	13	1	2	5	3	2	0	45
4:30 PM	29	26	3	2	5	3	1	2	71
4:45 PM	38	26	15	3	5	3	6	4	100
5:00 PM	30	19	3	2	4	2	4	1	65
5:15 PM	43	18	5	1	6	3	7	3	86
5:30 PM	51	13	5	2	8	6	5	1	91
5:45 PM	16	21	6	5	6	5	6	5	70
6:00 PM	31	12	5	5	2	9	3	3	70
6:15 PM	21	19	2	3	8	3	5	2	63
6:30 PM	20	12	2	8	6	3	3	0	54
6:45 PM	20	14	3	9	4	7	7	1	65
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	330	204	56	44	64	50	49	25	822
APPROACH %'s :	61.80%	38.20%	56.00%	44.00%	56.14%	43.86%	66.22%	33.78%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	140	89	26	8	20	11	18	10	322
PEAK HR FACTOR :	0.814	0.856	0.433	0.667	0.833	0.917	0.643	0.625	
	0.895		0.472		0.861		0.700		0.805

Prepared by National Data & Surveying Services

B St & Congress St

Peak Hour Turning Movement Count

ID: 25-430193-021
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

SOUTHBOUND (B St)

AM	59	89	27	1	469	AM
NOON	0	0	0	0	0	NOON
PM	142	230	42	0	253	PM
	1	1.5	0.5	0		

EASTBOUND (Congress St)

AM	NOON	PM	
370	0	490	
4	0	8	0
229	0	77	0
128	0	142	2
56	0	175	1
AM	NOON	PM	

WESTBOUND (Congress St)

PM	NOON	AM	
50	0	42	0
98	0	55	1.5
405	0	298	1.5
3	0	0	0
564	0	483	
PM	NOON	AM	

CONTROL

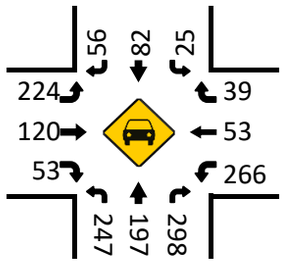
Signalized

TEV	1765 AM	0 NOON	2117 PM
PHF	0.96		0.98

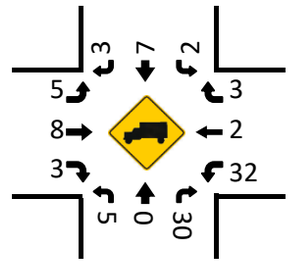
NORTHBOUND (B St)

PM	810	0	242	126	377	PM
NOON	0	0	0	0	0	NOON
AM	443	0	252	197	328	AM
		0	1	1	1	

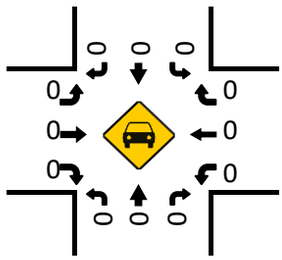
Cars (AM)



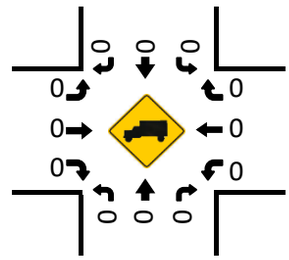
Total Trucks (AM)



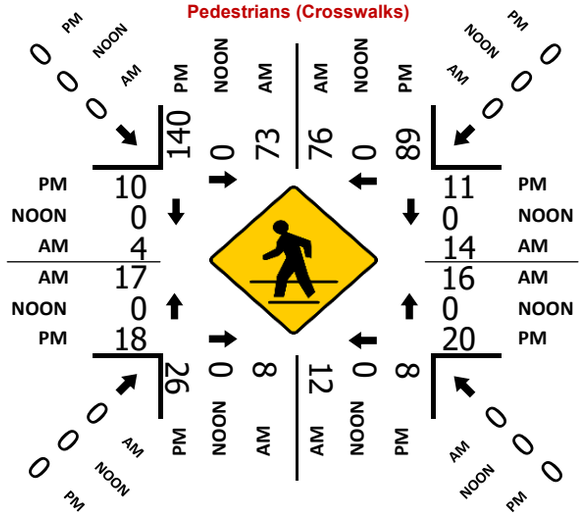
Cars (NOON)



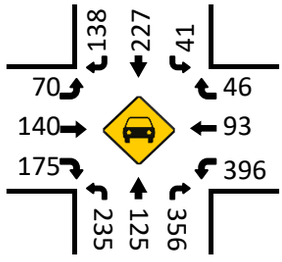
Total Trucks (NOON)



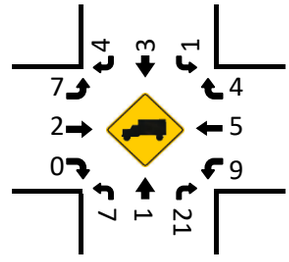
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-021
Location: B St & Congress St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	B St Northbound						B St Southbound						Congress St Eastbound						Congress St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	30	29	70	0	1	129	6	11	9	0	2	26	17	22	6	0	0	45	25	4	6	0	1	35	235
6:15 AM	39	28	81	1	0	149	2	11	3	0	4	16	17	28	11	0	2	56	35	2	6	0	0	43	264
6:30 AM	28	28	79	0	6	135	5	7	6	0	10	18	26	22	14	0	4	62	43	9	5	0	2	57	272
6:45 AM	60	26	84	1	9	171	6	8	8	0	7	22	30	24	7	0	4	61	54	12	11	0	1	77	331
Total	157	111	314	2	16	584	19	37	26	0	23	82	90	96	38	0	10	224	157	27	28	0	4	212	1102
7:00 AM	38	31	88	0	5	157	6	9	10	0	17	25	33	20	13	0	3	66	73	9	4	1	3	87	335
7:15 AM	33	34	71	0	5	138	5	24	9	1	12	39	45	26	9	0	1	80	55	7	14	0	1	76	333
7:30 AM	39	31	80	0	1	150	10	32	6	0	14	48	43	27	5	1	1	76	65	15	11	0	0	91	365
7:45 AM	52	45	84	0	12	181	2	22	13	1	33	38	52	35	12	1	8	100	88	16	13	0	1	117	436
Total	162	141	323	0	23	626	23	87	38	2	76	150	173	108	39	2	13	322	281	47	42	1	5	371	1469
8:00 AM	68	46	91	0	3	205	3	20	17	0	39	40	60	40	15	2	5	117	70	17	9	0	3	96	458
8:15 AM	56	56	70	0	3	182	11	24	12	1	32	48	59	29	12	0	6	100	96	12	9	0	1	117	447
8:30 AM	58	39	90	0	8	187	7	24	10	0	35	41	52	29	11	0	5	92	65	14	14	0	15	93	413
8:45 AM	70	56	77	0	6	203	6	21	20	0	43	47	58	30	18	2	5	108	67	12	10	0	11	89	447
Total	252	197	328	0	20	777	27	89	59	1	149	176	229	128	56	4	21	417	298	55	42	0	30	395	1765
BREAK																									
4:00 PM	69	37	91	0	8	197	9	41	35	0	23	85	13	41	32	1	3	87	69	22	12	0	8	103	472
4:15 PM	46	27	110	0	3	183	7	55	25	0	32	87	17	36	43	2	2	98	65	23	17	0	8	105	473
4:30 PM	44	19	94	0	5	157	10	57	42	0	55	109	17	43	53	4	3	117	111	26	14	0	8	151	534
4:45 PM	59	39	96	0	18	194	8	62	30	0	64	100	15	30	45	3	10	93	89	33	10	1	8	133	520
Total	218	122	391	0	34	731	34	215	132	0	174	381	62	150	173	10	18	395	334	104	53	1	32	492	1999
5:00 PM	66	33	100	0	5	199	14	53	41	0	49	108	18	24	43	1	5	86	112	15	17	2	6	146	539
5:15 PM	73	35	87	0	6	195	10	58	29	0	61	97	27	45	34	0	10	106	93	24	9	0	9	126	524
5:30 PM	51	27	107	0	7	185	8	38	40	2	64	88	28	40	35	4	6	107	56	33	12	2	14	103	483
5:45 PM	75	42	116	1	11	234	9	40	30	0	37	79	10	37	29	6	11	82	79	23	15	0	11	117	512
Total	265	137	410	1	29	813	41	189	140	2	211	372	83	146	141	11	32	381	340	95	53	4	40	492	2058
6:00 PM	36	27	94	1	10	158	4	63	27	0	43	94	28	48	31	6	6	113	67	26	13	0	11	106	471
6:15 PM	41	33	80	0	5	154	12	44	30	0	40	86	23	26	38	5	7	92	84	31	18	0	11	133	465
6:30 PM	30	30	66	1	10	127	6	39	30	0	32	75	17	40	34	4	3	95	59	16	19	0	9	94	391
6:45 PM	36	36	53	0	12	125	12	59	31	2	34	104	13	50	31	3	8	97	55	30	16	1	11	102	428
Total	143	126	293	2	37	564	34	205	118	2	149	359	81	164	134	18	24	397	265	103	66	1	42	435	1755
Grand Total	1197	834	2059	5	159	4095	178	822	513	7	782	1520	718	792	581	45	118	2136	1675	431	284	7	153	2397	10148
Apprch %	29.2	20.4	50.3	0.1	3.9		11.7	54.1	33.8	0.5	51.4		33.6	37.1	27.2	2.1	5.5		69.9	18.0	11.8	0.3	6.4		
Total %	11.8	8.2	20.3	0.0	1.6	40.4	1.8	8.1	5.1	0.1	7.7	15.0	7.1	7.8	5.7	0.4	1.2	21.0	16.5	4.2	2.8	0.1	1.5	23.6	
Cars, PU, Vans	1159	821	1903	5		3888	171	792	494	7		1464	691	754	570	44		2059	1583	409	259	7		2258	9669
% Cars, PU, Vans	96.8	98.4	92.4	100.0		94.9	96.1	96.4	96.3	100.0		96.3	96.2	95.2	98.1	97.8		96.4	94.5	94.9	91.2	100.0		94.2	95.3
Buses	14	3	89	0		106	0	0	2	0		2	3	1	2	1		7	8	4	3	0		15	130
%Buses	1.2	0.4	4.3	0.0		2.6	0.0	0.0	0.4	0.0		0.1	0.4	0.1	0.3	2.2		0.3	0.5	0.9	1.1	0.0		0.6	1.3
Heavy Trucks	24	10	67	0		101	7	30	17	0		54	24	37	9	0		70	84	18	22	0		124	349
%Heavy Trucks	2.0	1.2	3.3	0.0		2.5	3.9	3.6	3.3	0.0		3.6	3.3	4.7	1.5	0.0		3.3	5.0	4.2	7.7	0.0		5.2	3.4

Project ID: 25-430193-021
Location: B St & Congress St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	B St Northbound					B St Southbound					Congress St Eastbound					Congress St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	68	46	91	0	205	3	20	17	0	40	60	40	15	2	117	70	17	9	0	96	458
8:15 AM	56	56	70	0	182	11	24	12	1	48	59	29	12	0	100	96	12	9	0	117	447
8:30 AM	58	39	90	0	187	7	24	10	0	41	52	29	11	0	92	65	14	14	0	93	413
8:45 AM	70	56	77	0	203	6	21	20	0	47	58	30	18	2	108	67	12	10	0	89	447
Total Volume	252	197	328	0	777	27	89	59	1	176	229	128	56	4	417	298	55	42	0	395	1765
% App. Total	32.4	25.4	42.2	0.0	100	15.3	50.6	33.5	0.6	100	54.9	30.7	13.4	1.0	100	75.4	13.9	10.6	0.0	100	
PHF					0.948					0.917					0.891					0.844	0.963
Cars, PU, Vans	247	197	298	0	742	25	82	56	1	164	224	120	53	4	401	266	53	39	0	358	1665
% Cars, PU, Vans	98.0	100.0	90.9	0.0	95.5	92.6	92.1	94.9	100.0	93.2	97.8	93.8	94.6	100.0	96.2	89.3	96.4	92.9	0.0	90.6	94.3
Buses	0	0	13	0	13	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	16
%Buses	0.0	0.0	4.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.8	0.0	0.0	0.8	0.9
Heavy Trucks	5	0	17	0	22	2	7	3	0	12	5	8	3	0	16	30	1	3	0	34	84
%Heavy Trucks	2.0	0.0	5.2	0.0	2.8	7.4	7.9	5.1	0.0	6.8	2.2	6.3	5.4	0.0	3.8	10.1	1.8	7.1	0.0	8.6	4.8

PM

	B St Northbound					B St Southbound					Congress St Eastbound					Congress St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	44	19	94	0	157	10	57	42	0	109	17	43	53	4	117	111	26	14	0	151	534
4:45 PM	59	39	96	0	194	8	62	30	0	100	15	30	45	3	93	89	33	10	1	133	520
5:00 PM	66	33	100	0	199	14	53	41	0	108	18	24	43	1	86	112	15	17	2	146	539
5:15 PM	73	35	87	0	195	10	58	29	0	97	27	45	34	0	106	93	24	9	0	126	524
Total Volume	242	126	377	0	745	42	230	142	0	414	77	142	175	8	402	405	98	50	3	556	2117
% App. Total	32.5	16.9	50.6	0.0	100	10.1	55.6	34.3	0.0	100	19.2	35.3	43.5	2.0	100	72.8	17.6	9.0	0.5	100	
PHF					0.936					0.950					0.859					0.921	0.982
Cars, PU, Vans	235	125	356	0	716	41	227	138	0	406	70	140	175	8	393	396	93	46	3	538	2053
% Cars, PU, Vans	97.1	99.2	94.4	0.0	96.1	97.6	98.7	97.2	0.0	98.1	90.9	98.6	100.0	100.0	97.8	97.8	94.9	92.0	100.0	96.8	97.0
Buses	4	0	14	0	18	0	0	1	0	1	1	0	0	0	1	0	2	0	0	2	22
%Buses	1.7	0.0	3.7	0.0	2.4	0.0	0.0	0.7	0.0	0.2	1.3	0.0	0.0	0.0	0.2	0.0	2.0	0.0	0.0	0.4	1.0
Heavy Trucks	3	1	7	0	11	1	3	3	0	7	6	2	0	0	8	9	3	4	0	16	42
%Heavy Trucks	1.2	0.8	1.9	0.0	1.5	2.4	1.3	2.1	0.0	1.7	7.8	1.4	0.0	0.0	2.0	2.2	3.1	8.0	0.0	2.9	2.0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston
Control: Signalized

Project ID: 25-430193-022
Date: 12/16/2025

Data - Total

NS/EW Streets:	Summer St/L St				Summer St/L St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	104	2	0	14	24	2	0	5	8	3	0	5	2	34	0	208
6:15 AM	1	112	1	0	22	41	8	0	5	8	2	0	5	13	48	0	266
6:30 AM	7	139	1	0	16	45	7	0	6	6	2	0	2	11	60	0	302
6:45 AM	3	123	3	0	22	47	9	0	8	8	0	0	4	13	55	0	295
7:00 AM	3	160	2	0	19	56	4	0	6	8	3	0	2	10	70	0	343
7:15 AM	8	150	2	0	24	55	12	0	13	14	2	0	6	16	66	0	368
7:30 AM	7	171	2	0	22	51	5	0	11	12	4	0	4	18	84	0	391
7:45 AM	10	122	3	0	34	59	9	0	7	23	11	0	5	20	99	0	402
8:00 AM	4	171	3	1	23	86	8	0	8	12	6	0	2	34	79	0	437
8:15 AM	6	136	3	0	28	65	8	0	10	23	9	0	5	28	89	0	410
8:30 AM	10	145	1	0	28	71	12	0	5	20	4	0	3	20	73	0	392
8:45 AM	9	123	4	0	35	73	11	0	4	10	8	0	3	22	62	0	364
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	73	1656	27	1	287	673	95	0	88	152	54	0	46	207	819	0	4178
APPROACH %'s :	4.15%	94.25%	1.54%	0.06%	27.20%	63.79%	9.00%	0.00%	29.93%	51.70%	18.37%	0.00%	4.29%	19.31%	76.40%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	30	574	10	1	113	281	37	0	30	78	30	0	15	102	340	0	1641
PEAK HR FACTOR :	0.750	0.839	0.833	0.250	0.831	0.817	0.771	0.000	0.750	0.848	0.682	0.000	0.750	0.750	0.859	0.000	0.939
	0.859				0.921				0.821				0.921				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	45	6	0	43	156	24	0	7	18	9	0	2	16	37	0	367
4:15 PM	6	69	3	0	46	172	35	0	4	12	9	0	3	8	29	0	396
4:30 PM	4	61	4	0	46	154	19	0	1	22	13	0	4	9	29	0	366
4:45 PM	4	66	5	0	40	157	24	0	3	18	9	0	2	14	30	0	372
5:00 PM	4	61	8	1	49	155	22	0	2	14	18	0	3	16	40	0	393
5:15 PM	3	76	3	0	72	175	34	0	5	29	8	0	2	14	23	0	444
5:30 PM	4	57	5	0	56	193	28	0	9	19	11	0	2	9	19	0	412
5:45 PM	8	70	6	0	70	184	31	0	3	23	8	0	6	7	31	0	447
6:00 PM	3	66	3	0	59	171	32	0	3	18	9	1	4	14	22	0	405
6:15 PM	10	72	4	1	75	189	24	0	6	18	9	0	3	8	26	0	445
6:30 PM	6	55	8	0	72	133	14	0	4	18	11	0	3	9	26	0	359
6:45 PM	6	46	1	0	40	168	17	0	4	21	8	0	3	8	17	0	339
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	744	56	2	668	2007	304	0	51	230	122	1	37	132	329	0	4745
APPROACH %'s :	7.18%	86.11%	6.48%	0.23%	22.42%	67.37%	10.20%	0.00%	12.62%	56.93%	30.20%	0.25%	7.43%	26.51%	66.06%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	25	265	18	1	260	737	115	0	21	78	37	1	15	38	98	0	1709
PEAK HR FACTOR :	0.625	0.920	0.750	0.250	0.867	0.955	0.898	0.000	0.583	0.848	0.841	0.250	0.625	0.679	0.790	0.000	0.956
	0.888				0.965				0.878				0.858				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston
Control: Signalized

Project ID: 25-430193-022
Date: 12/16/2025

Data - Cars

NS/EW Streets:	Summer St/L St				Summer St/L St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	101	1	0	13	22	2	0	4	5	3	0	5	1	33	0	195
6:15 AM	1	110	1	0	20	39	8	0	5	7	2	0	4	13	48	0	258
6:30 AM	7	137	1	0	16	43	7	0	6	4	2	0	2	11	60	0	296
6:45 AM	3	119	1	0	20	44	8	0	6	5	0	0	4	11	55	0	276
7:00 AM	3	153	0	0	18	53	4	0	6	5	3	0	2	9	68	0	324
7:15 AM	8	148	1	0	18	54	11	0	12	9	1	0	5	16	65	0	348
7:30 AM	7	166	1	0	20	49	5	0	9	8	4	0	3	15	83	0	370
7:45 AM	10	118	2	0	32	58	8	0	6	19	10	0	5	19	97	0	384
8:00 AM	4	166	2	1	22	85	8	0	8	11	5	0	2	34	78	0	426
8:15 AM	6	132	0	0	24	61	6	0	10	22	8	0	5	28	89	0	391
8:30 AM	10	139	1	0	25	68	11	0	4	20	4	0	3	20	73	0	378
8:45 AM	9	118	3	0	34	68	10	0	4	10	7	0	3	20	62	0	348
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	73	1607	14	1	262	644	88	0	80	125	49	0	43	197	811	0	3994
APPROACH %'s :	4.31%	94.81%	0.83%	0.06%	26.36%	64.79%	8.85%	0.00%	31.50%	49.21%	19.29%	0.00%	4.09%	18.74%	77.16%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	30	555	5	1	103	272	33	0	28	72	27	0	15	101	337	0	1579
PEAK HR FACTOR :	0.750	0.836	0.625	0.250	0.805	0.800	0.750	0.000	0.700	0.818	0.675	0.000	0.750	0.743	0.869	0.000	0.927
	0.854				0.887				0.794				0.928				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	44	6	0	42	153	23	0	6	18	9	0	2	16	34	0	357
4:15 PM	6	67	3	0	45	169	35	0	4	12	9	0	3	8	27	0	388
4:30 PM	4	60	4	0	46	150	19	0	1	22	13	0	3	9	29	0	360
4:45 PM	4	65	5	0	40	153	23	0	3	18	9	0	2	14	27	0	363
5:00 PM	4	61	7	1	49	153	22	0	2	14	18	0	3	16	36	0	386
5:15 PM	3	76	3	0	72	174	33	0	5	29	8	0	2	14	22	0	441
5:30 PM	4	57	5	0	56	191	27	0	8	19	11	0	2	9	18	0	407
5:45 PM	8	70	6	0	70	180	29	0	2	23	8	0	6	7	28	0	437
6:00 PM	3	65	3	0	59	168	31	0	2	18	9	1	4	14	19	0	396
6:15 PM	10	72	4	1	74	185	23	0	5	18	9	0	3	7	25	0	436
6:30 PM	6	55	8	0	72	131	14	0	3	18	11	0	3	7	25	0	353
6:45 PM	6	43	1	0	40	165	15	0	3	20	8	0	3	6	16	0	326
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	735	55	2	665	1972	294	0	44	229	122	1	36	127	306	0	4650
APPROACH %'s :	7.26%	86.07%	6.44%	0.23%	22.69%	67.28%	10.03%	0.00%	11.11%	57.83%	30.81%	0.25%	7.68%	27.08%	65.25%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	25	264	18	1	259	724	110	0	17	78	37	1	15	37	90	0	1676
PEAK HR FACTOR :	0.625	0.917	0.750	0.250	0.875	0.948	0.887	0.000	0.531	0.848	0.841	0.250	0.625	0.661	0.804	0.000	0.959
	0.885				0.969				0.875				0.866				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston
Control: Signalized

Project ID: 25-430193-022
Date: 12/16/2025

Data - Buses

NS/EW Streets:	Summer St/L St				Summer St/L St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	1	0	1	0	0	0	1	3	0	0	0	0	0	0	7
6:15 AM	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	4
6:30 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
6:45 AM	0	2	2	0	2	1	0	0	1	2	0	0	0	0	0	0	10
7:00 AM	0	5	2	0	1	0	0	0	0	3	0	0	0	0	0	0	11
7:15 AM	0	2	1	0	3	0	0	0	1	2	1	0	0	0	0	0	10
7:30 AM	0	3	1	0	2	0	0	0	1	4	0	0	0	0	0	0	11
7:45 AM	0	2	1	0	2	1	1	0	1	3	0	0	0	0	1	0	12
8:00 AM	0	3	1	0	1	1	0	0	0	1	0	0	0	0	1	0	8
8:15 AM	0	4	3	0	4	2	2	0	0	1	0	0	0	0	0	0	16
8:30 AM	0	3	0	0	2	1	1	0	1	0	0	0	0	0	0	0	8
8:45 AM	0	3	1	0	1	1	0	0	0	0	0	0	0	2	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	31	13	0	20	7	4	0	6	22	1	0	0	2	2	0	108
APPROACH %'s :	0.00%	70.45%	29.55%	0.00%	64.52%	22.58%	12.90%	0.00%	20.69%	75.86%	3.45%	0.00%	0.00%	50.00%	50.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	12	5	0	9	5	4	0	2	5	0	0	0	0	2	0	44
PEAK HR FACTOR :	0.000	0.750	0.417	0.000	0.563	0.625	0.500	0.000	0.500	0.417	0.000	0.000	0.000	0.000	0.500	0.000	0.688
		0.607				0.563				0.438				0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	2	0	0	1	0	0	0	0	0	2	0	6
4:15 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	5
4:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	4
4:45 PM	0	0	0	0	0	4	1	0	0	0	0	0	0	0	2	0	7
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	5
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
5:30 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	4
5:45 PM	0	0	0	0	0	4	2	0	1	0	0	0	0	0	3	0	10
6:00 PM	0	0	0	0	0	3	0	0	1	0	0	0	0	0	3	0	7
6:15 PM	0	0	0	0	0	3	1	0	1	0	0	0	0	1	1	0	7
6:30 PM	0	0	0	0	0	2	0	0	1	0	0	0	0	2	1	0	6
6:45 PM	0	2	0	0	0	2	2	0	1	1	0	0	0	2	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	1	0	2	28	8	0	6	1	0	0	1	5	18	0	74
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	5.26%	73.68%	21.05%	0.00%	85.71%	14.29%	0.00%	0.00%	4.17%	20.83%	75.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	12	4	0	3	0	0	0	0	1	8	0	28
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.750	0.500	0.000	0.750	0.000	0.000	0.000	0.000	0.250	0.667	0.000	0.700
						0.667				0.750				0.750			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston
Control: Signalized

Project ID: 25-430193-022
Date: 12/16/2025

Data - HT

NS/EW Streets:	Summer St/L St				Summer St/L St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	1	1	0	6
6:15 AM	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	4
6:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:45 AM	0	2	0	0	0	2	1	0	1	1	0	0	0	2	0	0	9
7:00 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	1	2	0	8
7:15 AM	0	0	0	0	3	1	1	0	0	3	0	0	1	0	1	0	10
7:30 AM	0	2	0	0	0	2	0	0	1	0	0	0	1	3	1	0	10
7:45 AM	0	2	0	0	0	0	0	0	0	1	1	0	0	1	1	0	6
8:00 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3
8:30 AM	0	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	6
8:45 AM	0	2	0	0	0	4	1	0	0	0	1	0	0	0	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	18	0	0	5	22	3	0	2	5	4	0	3	8	6	0	76
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	16.67%	73.33%	10.00%	0.00%	18.18%	45.45%	36.36%	0.00%	17.65%	47.06%	35.29%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	7	0	0	1	4	0	0	0	1	3	0	0	1	1	0	18
PEAK HR FACTOR :	0.000	0.583	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.250	0.750	0.000	0.000	0.250	0.250	0.000	0.750
		0.583				0.417				0.500				0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	4
4:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
4:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	0	0	1	7	2	0	1	0	0	0	0	0	5	0	21
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	10.00%	70.00%	20.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	1	1	1	0	1	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.250	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
		0.250				0.375				0.250							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston
Control: Signalized

Project ID: 25-430193-022
Date: 12/16/2025

Data - Bikes

NS/EW Streets:	Summer St/L St				Summer St/L St				E 1st St				E 1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	1	2	0	5
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
8:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
8:15 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
8:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4
8:45 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	17	0	0	1	2	0	0	2	0	0	0	0	1	12	0	35
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	7.69%	92.31%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	11	0	0	0	1	0	0	0	0	0	0	0	0	5	0	17
PEAK HR FACTOR :	0.000	0.550	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.708
		0.550				0.250								0.625			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	1.5	0	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	2	0	0	0	1	0	0	0	0	1	0	4
4:30 PM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	4
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0	6
6:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	2	0	0	1	1	0	0	1	0	0	0	0	0	0	0	5
6:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	0	0	7	19	1	0	1	3	0	0	0	1	1	0	37
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	25.93%	70.37%	3.70%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	
PEAK HR :	05:30 PM - 06:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	10	1	0	0	1	0	0	0	0	0	0	12
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500
						0.550				0.250							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Summer St/L St & E 1st St
City: Boston

Project ID: 25-430193-022
Date: 12/16/2025

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Summer St/L St		Summer St/L St		E 1st St		E 1st St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	8	1	1	0	4	3	2	0	19
6:15 AM	0	0	0	1	7	3	5	3	19
6:30 AM	2	0	1	1	4	5	2	0	15
6:45 AM	1	1	1	2	10	9	1	1	26
7:00 AM	3	2	1	0	4	4	8	6	28
7:15 AM	1	2	2	1	7	5	2	1	21
7:30 AM	2	0	2	3	7	2	6	2	24
7:45 AM	5	0	2	2	6	1	8	3	27
8:00 AM	2	3	0	2	10	4	9	1	31
8:15 AM	3	3	2	0	17	4	6	5	40
8:30 AM	0	0	0	3	10	0	7	2	22
8:45 AM	4	1	3	1	3	0	5	3	20
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	31	13	15	16	89	40	61	27	292
APPROACH %'s :	70.45%	29.55%	48.39%	51.61%	68.99%	31.01%	69.32%	30.68%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	10	6	4	7	43	9	30	11	120
PEAK HR FACTOR :	0.500	0.500	0.500	0.583	0.632	0.563	0.833	0.550	0.750
	0.667		0.688		0.619		0.932		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	2	6	1	3	3	4	4	2	25
4:15 PM	1	1	4	2	2	5	3	6	24
4:30 PM	1	1	2	5	9	4	0	5	27
4:45 PM	3	2	7	2	7	5	2	14	42
5:00 PM	4	5	3	0	7	5	1	13	38
5:15 PM	3	0	5	5	6	15	6	17	57
5:30 PM	7	1	9	3	4	12	0	22	58
5:45 PM	5	2	4	4	12	18	6	9	60
6:00 PM	5	3	9	2	3	13	4	18	57
6:15 PM	1	3	3	4	11	6	4	16	48
6:30 PM	1	1	9	6	2	7	3	14	43
6:45 PM	3	5	1	2	2	12	2	6	33
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	36	30	57	38	68	106	35	142	512
APPROACH %'s :	54.55%	45.45%	60.00%	40.00%	39.08%	60.92%	19.77%	80.23%	
PEAK HR :	05:30 PM - 06:30 PM								TOTAL
PEAK HR VOL :	18	9	25	13	30	49	14	65	223
PEAK HR FACTOR :	0.643	0.750	0.694	0.813	0.625	0.681	0.583	0.739	0.929
	0.844		0.792		0.658		0.898		

Prepared by National Data & Surveying Services

Summer St/L St & E 1st St

Peak Hour Turning Movement Count

ID: 25-430193-022
City: Boston

Day: Tuesday
Date: 12/16/2025

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:30 PM - 06:30 PM

COUNT PERIODS

AM: 6:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 07:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1641	0	1709
PHF	0.94		0.96

SOUTHBOUND (Summer St/L St)

	Left	Thru	Right	U-Turn	Total
AM	37	281	113	0	944
NOON	0	0	0	0	0
PM	115	737	260	0	384

EASTBOUND (E 1st St)

	Left	Thru	Right	U-Turn	Total
AM	169	0	179		
NOON	0	0	1	0	
PM	30	0	21	0	
	78	0	78	1	
	30	0	37	0	

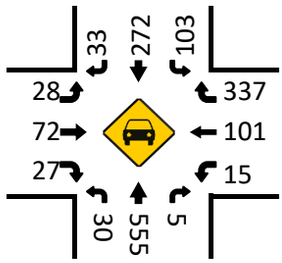
WESTBOUND (E 1st St)

	Left	Thru	Right	U-Turn	Total
PM	98	0	340	1	
NOON	38	0	102	1	
AM	15	0	15	0	
	0	0	0	0	
	356	0	201		

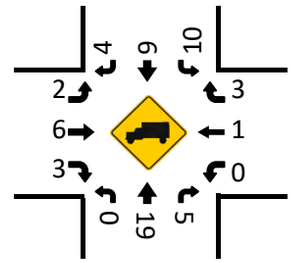
NORTHBOUND (Summer St/L St)

	Left	Thru	Right	U-Turn	Total
PM	790	1	25	265	18
NOON	0	0	0	0	0
AM	327	1	30	574	10

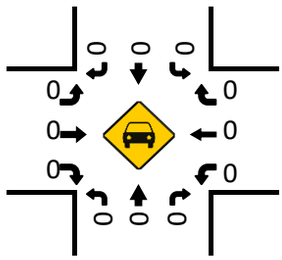
Cars (AM)



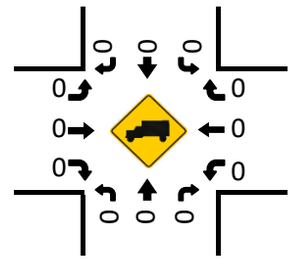
Total Trucks (AM)



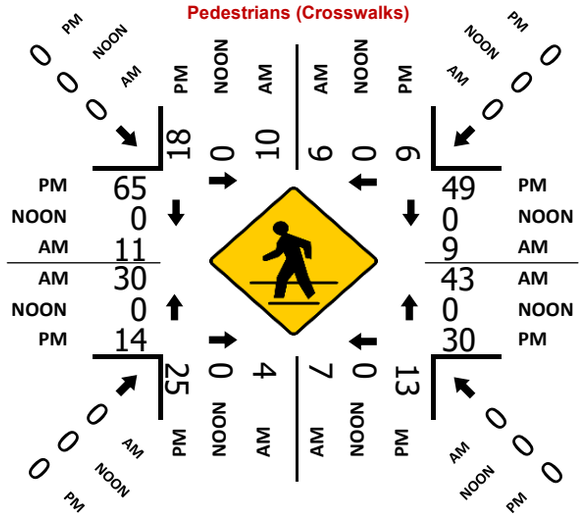
Cars (NOON)



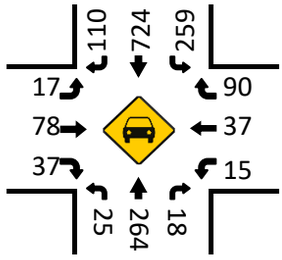
Total Trucks (NOON)



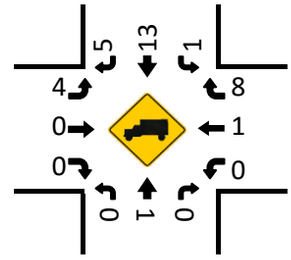
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Project ID: 25-430193-022
Location: Summer St/L St & E 1st St
City: Boston

Day: Tuesday
Date: 12/16/2025

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Summer St/L St Northbound						Summer St/L St Southbound						E 1st St Eastbound						E 1st St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	5	104	2	0	1	111	14	24	2	0	9	40	5	8	3	0	2	16	5	2	34	0	7	41	208
6:15 AM	1	112	1	0	1	114	22	41	8	0	0	71	5	8	2	0	8	15	5	13	48	0	10	66	266
6:30 AM	7	139	1	0	2	147	16	45	7	0	2	68	6	6	2	0	2	14	2	11	60	0	9	73	302
6:45 AM	3	123	3	0	3	129	22	47	9	0	2	78	8	8	0	0	2	16	4	13	55	0	19	72	295
Total	16	478	7	0	7	501	74	157	26	0	13	257	24	30	7	0	14	61	16	39	197	0	45	252	1071
7:00 AM	3	160	2	0	1	165	19	56	4	0	5	79	6	8	3	0	14	17	2	10	70	0	8	82	343
7:15 AM	8	150	2	0	3	160	24	55	12	0	3	91	13	14	2	0	3	29	6	16	66	0	12	88	368
7:30 AM	7	171	2	0	5	180	22	51	5	0	2	78	11	12	4	0	8	27	4	18	84	0	9	106	391
7:45 AM	10	122	3	0	4	135	34	59	9	0	5	102	7	23	11	0	11	41	5	20	99	0	7	124	402
Total	28	603	9	0	13	640	99	221	30	0	15	350	37	57	20	0	36	114	17	64	319	0	36	400	1504
8:00 AM	4	171	3	1	2	179	23	86	8	0	5	117	8	12	6	0	10	26	2	34	79	0	14	115	437
8:15 AM	6	136	3	0	2	145	28	65	8	0	6	101	10	23	9	0	11	42	5	28	89	0	21	122	410
8:30 AM	10	145	1	0	3	156	28	71	12	0	0	111	5	20	4	0	9	29	3	20	73	0	10	96	392
8:45 AM	9	123	4	0	4	136	35	73	11	0	5	119	4	10	8	0	8	22	3	22	62	0	3	87	364
Total	29	575	11	1	11	616	114	295	39	0	16	448	27	65	27	0	38	119	13	104	303	0	48	420	1603
BREAK																									
4:00 PM	4	45	6	0	4	55	43	156	24	0	8	223	7	18	9	0	6	34	2	16	37	0	7	55	367
4:15 PM	6	69	3	0	6	78	46	172	35	0	2	253	4	12	9	0	9	25	3	8	29	0	7	40	396
4:30 PM	4	61	4	0	7	69	46	154	19	0	2	219	1	22	13	0	5	36	4	9	29	0	13	42	366
4:45 PM	4	66	5	0	9	75	40	157	24	0	5	221	3	18	9	0	16	30	2	14	30	0	12	46	372
Total	18	241	18	0	26	277	175	639	102	0	17	916	15	70	40	0	36	125	11	47	125	0	39	183	1501
5:00 PM	4	61	8	1	3	74	49	155	22	0	9	226	2	14	18	0	14	34	3	16	40	0	12	59	393
5:15 PM	3	76	3	0	10	82	72	175	34	0	3	281	5	29	8	0	23	42	2	14	23	0	21	39	444
5:30 PM	4	57	5	0	12	66	56	193	28	0	8	277	9	19	11	0	22	39	2	9	19	0	16	30	412
5:45 PM	8	70	6	0	8	84	70	184	31	0	7	285	3	23	8	0	15	34	6	7	31	0	30	44	447
Total	19	264	22	1	33	306	247	707	115	0	27	1069	19	85	45	0	74	149	13	46	113	0	79	172	1696
6:00 PM	3	66	3	0	11	72	59	171	32	0	8	262	3	18	9	1	22	31	4	14	22	0	16	40	405
6:15 PM	10	72	4	1	7	87	75	189	24	0	4	288	6	18	9	0	20	33	3	8	26	0	17	37	445
6:30 PM	6	55	8	0	15	69	72	133	14	0	2	219	4	18	11	0	17	33	3	9	26	0	9	38	359
6:45 PM	6	46	1	0	3	53	40	168	17	0	8	225	4	21	8	0	8	33	3	8	17	0	14	28	339
Total	25	239	16	1	36	281	246	661	87	0	22	994	17	75	37	1	67	130	13	39	91	0	56	143	1548
Grand Total	135	2400	83	3	126	2621	955	2680	399	0	110	4034	139	382	176	1	265	698	83	339	1148	0	303	1570	8923
Apprch %	5.2	91.6	3.2	0.1	4.8		23.7	66.4	9.9	0.0	2.7		19.9	54.7	25.2	0.1	38.0		5.3	21.6	73.1	0.0	19.3		
Total %	1.5	26.9	0.9	0.0	1.4	29.4	10.7	30.0	4.5	0.0	1.2	45.2	1.6	4.3	2.0	0.0	3.0	7.8	0.9	3.8	12.9	0.0	3.4	17.6	
Cars, PU, Vans	135	2342	69	3		2549	927	2616	382	0		3925	124	354	171	1		650	79	324	1117	0		1520	8644
% Cars, PU, Vans	100.0	97.6	83.1	100.0		97.3	97.1	97.6	95.7	0.0		97.3	89.2	92.7	97.2	100.0		93.1	95.2	95.6	97.3	0.0		96.8	96.9
Buses	0	35	14	0		49	22	35	12	0		69	12	23	1	0		36	1	7	20	0		28	182
%Buses	0.0	1.5	16.9	0.0		1.9	2.3	1.3	3.0	0.0		1.7	8.6	6.0	0.6	0.0		5.2	1.2	2.1	1.7	0.0		1.8	2.0
Heavy Trucks	0	23	0	0		23	6	29	5	0		40	3	5	4	0		12	3	8	11	0		22	97
%Heavy Trucks	0.0	1.0	0.0	0.0		0.9	0.6	1.1	1.3	0.0		1.0	2.2	1.3	2.3	0.0		1.7	3.6	2.4	1.0	0.0		1.4	1.1

Project ID: 25-430193-022
Location: Summer St/L St & E 1st St
City: Boston

PEAK HOURS

Day: Tuesday
Date: 12/16/2025

AM

	Summer St/L St Northbound					Summer St/L St Southbound					E 1st St Eastbound					E 1st St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
7:45 AM	10	122	3	0	135	34	59	9	0	102	7	23	11	0	41	5	20	99	0	124	402
8:00 AM	4	171	3	1	179	23	86	8	0	117	8	12	6	0	26	2	34	79	0	115	437
8:15 AM	6	136	3	0	145	28	65	8	0	101	10	23	9	0	42	5	28	89	0	122	410
8:30 AM	10	145	1	0	156	28	71	12	0	111	5	20	4	0	29	3	20	73	0	96	392
Total Volume	30	574	10	1	615	113	281	37	0	431	30	78	30	0	138	15	102	340	0	457	1641
% App. Total	4.9	93.3	1.6	0.2	100	26.2	65.2	8.6	0.0	100	21.7	56.5	21.7	0.0	100	3.3	22.3	74.4	0.0	100	
PHF					0.859					0.921					0.821					0.921	0.939
Cars, PU, Vans	30	555	5	1	591	103	272	33	0	408	28	72	27	0	127	15	101	337	0	453	1579
% Cars, PU, Vans	100.0	96.7	50.0	100.0	96.1	91.2	96.8	89.2	0.0	94.7	93.3	92.3	90.0	0.0	92.0	100.0	99.0	99.1	0.0	99.1	96.2
Buses	0	12	5	0	17	9	5	4	0	18	2	5	0	0	7	0	0	2	0	2	44
%Buses	0.0	2.1	50.0	0.0	2.8	8.0	1.8	10.8	0.0	4.2	6.7	6.4	0.0	0.0	5.1	0.0	0.0	0.6	0.0	0.4	2.7
Heavy Trucks	0	7	0	0	7	1	4	0	0	5	0	1	3	0	4	0	1	1	0	2	18
%Heavy Trucks	0.0	1.2	0.0	0.0	1.1	0.9	1.4	0.0	0.0	1.2	0.0	1.3	10.0	0.0	2.9	0.0	1.0	0.3	0.0	0.4	1.1

PM

	Summer St/L St Northbound					Summer St/L St Southbound					E 1st St Eastbound					E 1st St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
5:30 PM	4	57	5	0	66	56	193	28	0	277	9	19	11	0	39	2	9	19	0	30	412
5:45 PM	8	70	6	0	84	70	184	31	0	285	3	23	8	0	34	6	7	31	0	44	447
6:00 PM	3	66	3	0	72	59	171	32	0	262	3	18	9	1	31	4	14	22	0	40	405
6:15 PM	10	72	4	1	87	75	189	24	0	288	6	18	9	0	33	3	8	26	0	37	445
Total Volume	25	265	18	1	309	260	737	115	0	1112	21	78	37	1	137	15	38	98	0	151	1709
% App. Total	8.1	85.8	5.8	0.3	100	23.4	66.3	10.3	0.0	100	15.3	56.9	27.0	0.7	100	9.9	25.2	64.9	0.0	100	
PHF					0.888					0.965					0.878					0.858	0.956
Cars, PU, Vans	25	264	18	1	308	259	724	110	0	1093	17	78	37	1	133	15	37	90	0	142	1676
% Cars, PU, Vans	100.0	99.6	100.0	100.0	99.7	99.6	98.2	95.7	0.0	98.3	81.0	100.0	100.0	100.0	97.1	100.0	97.4	91.8	0.0	94.0	98.1
Buses	0	0	0	0	0	0	12	4	0	16	3	0	0	0	3	0	1	8	0	9	28
%Buses	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.5	0.0	1.4	14.3	0.0	0.0	0.0	2.2	0.0	2.6	8.2	0.0	6.0	1.6
Heavy Trucks	0	1	0	0	1	1	1	1	0	3	1	0	0	0	1	0	0	0	0	0	5
%Heavy Trucks	0.0	0.4	0.0	0.0	0.3	0.4	0.1	0.9	0.0	0.3	4.8	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3

Prepared by National Data & Surveying Services

CLASSIFICATION

W.B. Mason North Dwy E/O E St

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_001

HOURLY BREAKDOWN

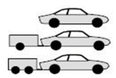
Time	EASTBOUND														WESTBOUND														TOTALS													
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
0:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	6	0	0	0	0	0	0	0	0	0	0	0	6
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	1	0	0	0	0	0	0	0	4	0	4	0	0	0	1	0	0	0	0	0	0	0	5
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	0	0	0	0	0	0	0	0	4
5:00	0	2	3	0	3	0	0	0	0	0	0	0	0	8	0	5	2	0	0	0	0	0	0	0	0	0	0	7	0	7	5	0	3	0	0	0	0	0	0	0	0	15
6:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	7	1	0	2	1	0	0	0	0	0	0	0	11
7:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8	0	10	1	0	5	0	0	0	0	0	0	0	0	16	0	16	3	0	5	0	0	0	0	0	0	0	0	24
8:00	0	9	0	0	2	0	0	0	0	0	0	0	0	11	0	3	1	0	4	0	0	0	0	0	0	0	0	8	0	12	1	0	6	0	0	0	0	0	0	0	0	19
9:00	0	8	0	0	2	0	0	0	0	0	0	0	0	10	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	11	0	0	2	0	0	0	0	0	0	0	0	13
10:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9	0	4	2	0	1	0	0	0	0	0	0	0	0	7	0	11	3	0	2	0	0	0	0	0	0	0	0	16
11:00	1	6	0	0	2	0	0	0	0	0	0	0	0	9	0	2	1	0	0	0	0	0	0	0	0	0	0	3	1	8	1	0	2	0	0	0	0	0	0	0	0	12
12:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	4	2	0	0	0	0	0	0	0	0	0	0	6
13:00	0	7	4	0	2	0	0	0	1	0	0	0	0	14	1	5	4	0	0	0	0	0	0	0	0	0	0	10	1	12	8	0	2	0	0	0	1	0	0	0	0	24
14:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6	1	10	1	0	1	0	0	0	0	0	0	0	0	13	1	15	2	0	1	0	0	0	0	0	0	0	0	19
15:00	0	8	3	0	3	0	0	0	0	0	0	0	0	14	0	6	2	0	1	0	0	0	0	0	0	0	0	9	0	14	5	0	4	0	0	0	0	0	0	0	0	23
16:00	0	7	1	0	2	0	0	0	0	0	0	0	0	10	0	9	3	0	0	0	0	0	0	0	0	0	0	12	0	16	4	0	2	0	0	0	0	0	0	0	0	22
17:00	0	2	2	0	2	0	0	0	0	0	0	0	0	6	0	17	0	0	1	0	0	0	0	0	0	0	0	18	0	19	2	0	3	0	0	0	0	0	0	0	0	24
18:00	0	8	2	0	2	0	0	0	0	0	0	0	0	12	0	11	1	0	0	0	0	0	0	0	0	0	0	12	0	19	3	0	2	0	0	0	0	0	0	0	0	24
19:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8	0	4	2	0	0	0	0	0	1	0	0	0	0	7	0	12	2	0	0	0	0	0	1	0	0	0	0	15
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	2	1	0	0	1	0	0	0	0	0	0	0	4	0	5	1	0	0	1	0	0	0	0	0	0	0	7
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0	6
22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Totals	1	107	23	0	22	0	0	0	1	0	0	0	0	154	2	114	22	0	14	3	0	0	1	0	0	0	0	156	3	221	45	0	36	3	0	0	2	0	0	0	0	310
% of Totals	1%	69%	15%		14%				1%					100%	1%	73%	14%		9%	2%			1%					100%	1%	71%	15%		12%	1%			1%					100%

FHWA

CLASSIFICATION DEFINITIONS



#1 Motorcycles



#2 Passenger Cars



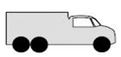
#3 2-Axle, 4-Tire Single Unit



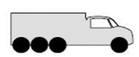
#4 Buses



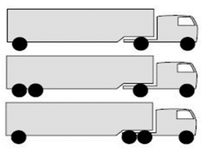
#5 2-Axle, 6-Tire Single Units



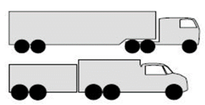
#6 3-Axle Single Units



#7 >=4-Axle Single Units



#8 <=4-Axle Single Trailers



#9 5-Axle Single Trailers



#10 >=6-Axle Single Trailers



#11 <=5-Axle Multi-Trailers



#12 6-Axle Multi-Trailers

ANY 7 OR MORE AXLE

#13 >=7-Axle Multi-Trailers

STATISTICS

00:00 - 12:00	1	53	7	0	11	0	0	0	0	0	0	0	0	72	0	36	8	0	11	2	0	0	0	1	0	0	0	57	1	89	15	0	22	2	0	0	0	0	0	0	0	129
%	1%	34%	5%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%	23%	5%	0%	7%	1%	0%	0%	0%	1%	0%	0%	0%	37%	0%	29%	5%	0%	7%	1%	0%	0%	0%	0%	0%	0%	0%	42%
Peak Hour	10:45	8:45	5:15	0:00	4:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	5:45	0:00	7:00	4:30	0:00	7:15	2:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:00	10:45	7:00	5:00	0:00	7:45	2:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:00
Peak Volume	1	11	4	0	3	0	0	0	0	0	0	0	0	12	0	10	3	0	6	1	0	0	0	0	0	0	0	16	1	16	5	0	8	1	0	0	0	0	0	0	0	24
12:00 - 24:00	0	54	16	0	11	0	0	0	1	0	0	0	0	82	2	78	14	0	3	1	0	0	1	0	0	0	0	99	2	132	30	0	14	1	0	0	2	0	0	0	0	181
%	0%	35%	10%	0%	7%	0%	0%	0%	1%	0%	0%	0%	0%	53%	1%	50%	9%	0%	2%	1%	0%	0%	1%	0%	0%	0%	0%	63%	1%	43%	10%	0%	5%	0%	0%	0%	1%	0%	0%	0%	0%	58%
Peak Hour	12:00	15:30	13:00	12:00	15:30	12:00	12:00	12:00	12:15	12:00	12:00	12:00	12:00	15:30	13:30	17:15	13:00	12:00	13:15	19:45	12:00	12:00	18:30	12:00	12:00	12:00	12:00	17:15	13:30	17:30	13:00	12:00	15:30	19:45	12:00	12:00	12:15	12:00	12:00	12:00	12:00	15:30
Peak Volume	0	9	4	0	4	0	0	0	1	0	0	0	0	16	2	19	4	0	1	1	0	0	1	0	0	0	0	20	2	23	8	0	5	1	0	0	1	0	0	0	0	30
07:00 - 09:00	0	15	2	0	2	0	0	0	0	0	0	0	0	19	0	13	2	0	9	0	0	0	0	0	0	0	0	24	0	28	4	0	11	0	0	0	0	0	0	0	0	43
%	0%	10%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	8%	1%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	9%	1%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Peak Hour	7:00	7:30	7:00	7:00	7:30	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:30	7:00	7:00	7:00	7:00	7:15	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00
Peak Volume	0	9	2	0	2	0	0	0	0	0	0	0	0	11	0	10	1	0	6	0	0	0	0	0	0	0	0	16	0	16	3	0	8	0	0	0	0	0	0	0	0	24
16:00 - 18:00	0	9	3	0	4	0	0	0	0	0	0	0	0	16	0	26	3	0	1	0	0	0	0	0	0	0	0	30	0	35	6	0	5	0	0	0	0	0	0	0	0	46
%	0%	6%	2%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	17%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	19%	0%	11%	2%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Peak Hour	16:00	16:00	17:00	16:00	16:15	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	16:00	16:00	16:15	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	16:00	17:00	16:00	16:00	16:15	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00
Peak Volume	0	7	2	0	3	0	0	0	0	0	0	0	0	10	0	17	3	0	1	0	0	0	0	0	0	0	0	18	0	19	4	0	4	0	0	0	0	0	0	0	0	24

Prepared by National Data & Surveying Services

CLASSIFICATION

W.B. Mason North Dwy E/O E St

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_001

15-MINUTE BREAKDOWN

Time	EASTBOUND														WESTBOUND														TOTALS													
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
0:15	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:15	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
5:15	0	0	0	0	2	0	0	0	0	0	0	0	0	**2**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	1	1	0	2	0	0	0	0	0	0	0	0	**4**
5:30	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:45	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
6:00	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
6:15	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
6:30	0	2	0	0	1	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**	0	2	0	0	1	1	0	0	0	0	0	0	0	**4**
6:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
7:00	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**	0	7	2	0	1	0	0	0	0	0	0	0	0	**10**
7:15	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
7:30	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	1	0	0	0	0	0	0	0	0	**3**	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
7:45	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**	0	3	0	0	2	0	0	0	0	0	0	0	0	**5**
8:00	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**	0	4	0	0	3	0	0	0	0	0	0	0	0	**7**
8:15	0	2	0	0	1	0	0	0	0	0	0	0	0	**3**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	1	0	2	0	0	0	0	0	0	0	0	**3**	0	0	1	0	2	0	0	0	0	0	0	0	0	**3**
8:45	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
9:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
9:15	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
9:30	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
9:45	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
10:00	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
10:15	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**	0	4	1	0	2	0	0	0	0	0	0	0	0	**7**
10:30	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
10:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
11:15	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
11:30	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
11:45	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**

Prepared by National Data & Surveying Services

CLASSIFICATION

W.B. Mason North Dwy E/O E St

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_001

15-MINUTE BREAKDOWN

Time	EASTBOUND														WESTBOUND														TOTALS													
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
12:00	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
12:15	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
13:00	0	2	0	0	0	0	0	0	1	0	0	0	0	**3**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	4	0	0	0	0	0	0	1	0	0	0	0	**5**
13:15	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
13:30	0	0	1	0	2	0	0	0	0	0	0	0	0	**3**	1	1	2	0	0	0	0	0	0	0	0	0	0	**4**	1	1	3	0	2	0	0	0	0	0	0	0	0	**7**
13:45	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
14:15	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**	1	2	1	0	0	0	0	0	0	0	0	0	0	**4**
14:30	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
14:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
15:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
15:15	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
15:30	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**	0	4	2	0	2	0	0	0	0	0	0	0	0	**8**
15:45	0	3	1	0	2	0	0	0	0	0	0	0	0	**6**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	4	1	0	2	0	0	0	0	0	0	0	0	**7**
16:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
16:15	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
16:30	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
16:45	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
17:00	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
17:15	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
17:30	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
17:45	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
18:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
18:15	0	3	1	0	2	0	0	0	0	0	0	0	0	**6**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
18:30	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
18:45	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
19:15	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**	0	3	0	0	0	0	0	0	1	0	0	0	0	**4**
19:30	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
19:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
20:15	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
21:45	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
Totals	**1**	**107**	**23**	**0**	**22**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**154**	**2**	**114**	**22**	**0**	**14**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**156**	**3**	**221**	**45**	**0**	**36**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**310**
% of Totals	1%	69%	15%		14%				1%					**100%**	1%	73%	14%		9%	2%			1%					**100%**	1%	71%	15%		12%	1%			1%					**100%**

Prepared by Nationa

VO

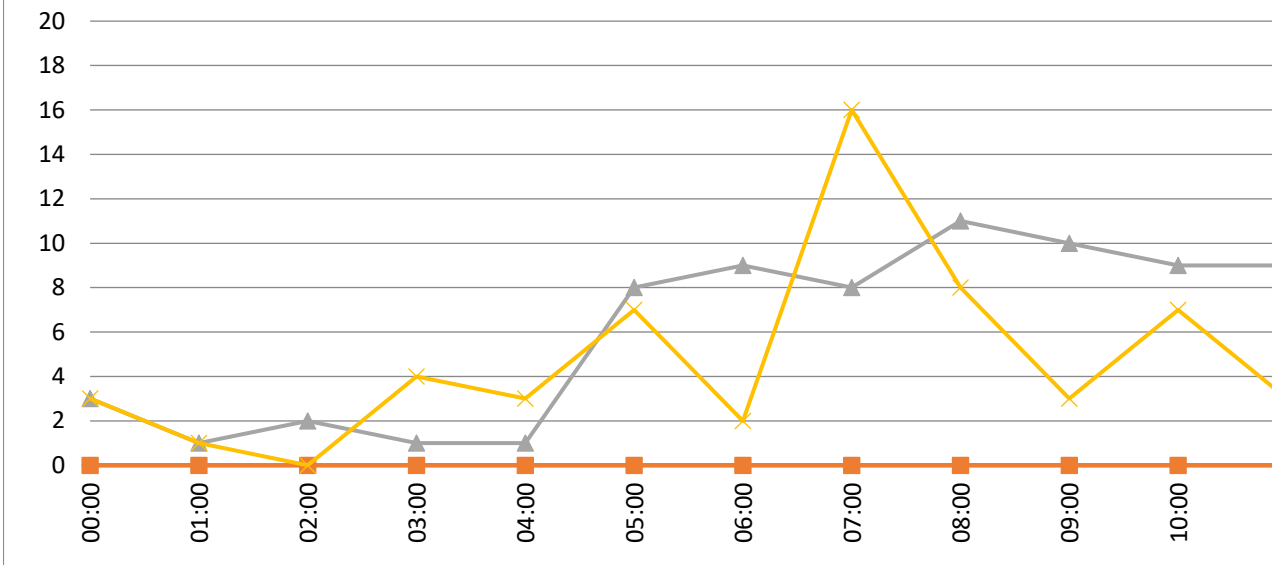
W.B. Mason N

Day: Tuesday
Date: 12/16/2025

DAILY TOTALS	NB	SB
	0	0

15-Minutes Interval								
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB
0:00			0	2	2	12:00		
0:15			3	0	3	12:15		
0:30			0	0	0	12:30		
0:45			0	1	1	12:45		
1:00			1	0	1	13:00		
1:15			0	0	0	13:15		
1:30			0	1	1	13:30		
1:45			0	0	0	13:45		
2:00			1	0	1	14:00		
2:15			0	0	0	14:15		
2:30			0	0	0	14:30		
2:45			1	0	1	14:45		
3:00			0	1	1	15:00		
3:15			0	2	2	15:15		
3:30			1	1	2	15:30		
3:45			0	0	0	15:45		
4:00			0	0	0	16:00		
4:15			1	0	1	16:15		
4:30			0	1	1	16:30		
4:45			0	2	2	16:45		
5:00			1	1	2	17:00		
5:15			2	2	4	17:15		
5:30			1	1	2	17:30		
5:45			4	3	7	17:45		
6:00			4	0	4	18:00		

6:15			1	0	1	18:15		
6:30			3	1	4	18:30		
6:45			1	1	2	18:45		
7:00			2	8	10	19:00		
7:15			2	2	4	19:15		
7:30			2	3	5	19:30		
7:45			2	3	5	19:45		
8:00			4	3	7	20:00		
8:15			3	1	4	20:15		
8:30			0	3	3	20:30		
8:45			4	1	5	20:45		
9:00			1	1	2	21:00		
9:15			4	2	6	21:15		
9:30			2	0	2	21:30		
9:45			3	0	3	21:45		
10:00			3	1	4	22:00		
10:15			4	3	7	22:15		
10:30			1	1	2	22:30		
10:45			1	2	3	22:45		
11:00			1	0	1	23:00		
11:15			4	0	4	23:15		
11:30			1	1	2	23:30		
11:45			3	2	5	23:45		
TOTALS	0	0	72	57	129	TOTALS	0	0
SPLIT %	0%	0%	56%	44%	42%	SPLIT %	0%	0%




NB

l Data & Surveying Services

)LUME

lorth Dwy E/O E St

City: Boston

Project #: MA25_430194_001

EB	WB	Total
154	156	310

DAILY TOTALS

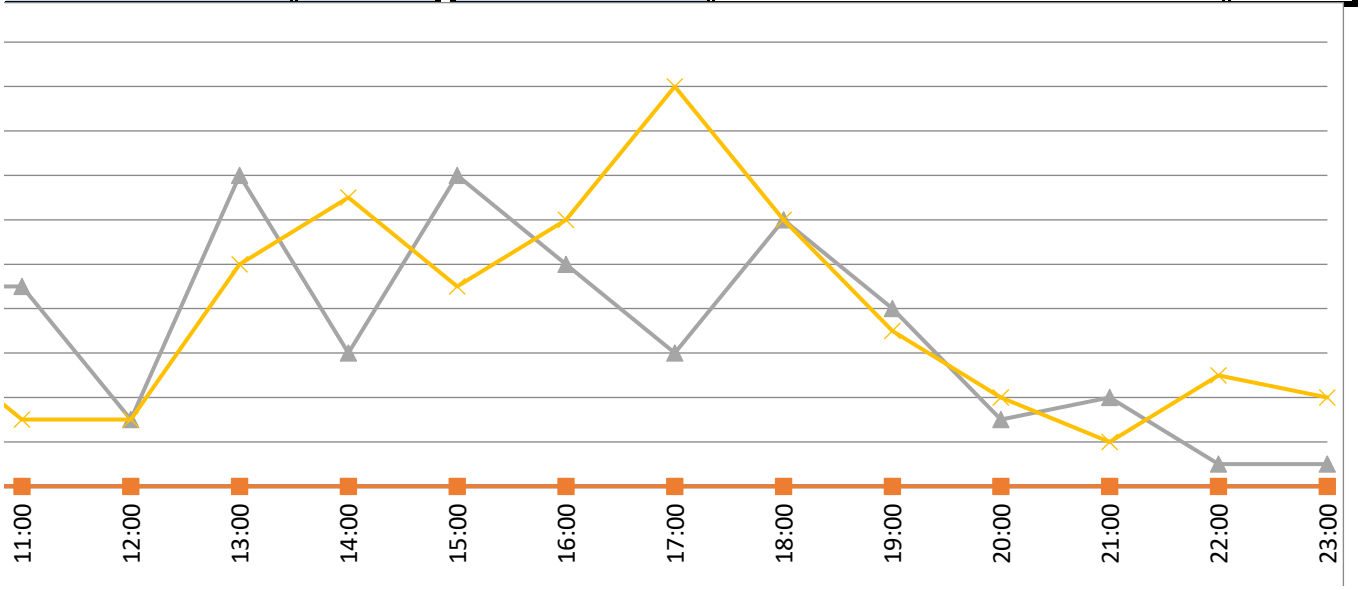
EB	WB	TOTAL
2	1	**3**
1	0	**1**
0	2	**2**
0	0	**0**
3	2	**5**
2	2	**4**
3	4	**7**
6	2	**8**
0	6	**6**
2	2	**4**
3	0	**3**
1	5	**6**
2	2	**4**
2	2	**4**
4	4	**8**
6	1	**7**
2	6	**8**
4	3	**7**
2	0	**2**
2	3	**5**
2	5	**7**
1	4	**5**
1	4	**5**
2	5	**7**
2	7	**9**

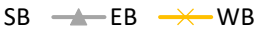
Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	**01:00**			3	3	**6**
01:00	**02:00**			1	1	**2**
02:00	**03:00**			2	0	**2**
03:00	**04:00**			1	4	**5**
04:00	**05:00**			1	3	**4**
05:00	**06:00**			8	7	**15**
06:00	**07:00**			9	2	**11**
07:00	**08:00**			8	16	**24**
08:00	**09:00**			11	8	**19**
09:00	**10:00**			10	3	**13**
10:00	**11:00**			9	7	**16**
11:00	**12:00**			9	3	**12**
12:00	**13:00**			3	3	**6**
13:00	**14:00**			14	10	**24**
14:00	**15:00**			6	13	**19**
15:00	**16:00**			14	9	**23**
16:00	**17:00**			10	12	**22**
17:00	**18:00**			6	18	**24**
18:00	**19:00**			12	12	**24**
19:00	**20:00**			8	7	**15**
20:00	**21:00**			3	4	**7**
21:00	**22:00**			4	2	**6**
22:00	**23:00**			1	5	**6**
23:00	**00:00**			1	4	**5**

STATISTICS

6	2	**8**		**NB**	**SB**	**EB**	**WB**	**TOTAL**
1	1	**2**	**Peak Period**	**00:00**	**to**	**12:00**		
3	2	**5**	**Volume**			72	57	129
0	1	**1**	**Peak Hour**			5:45	7:00	7:00
3	1	**4**	**Peak Volume**			12	16	24
4	1	**5**	**Peak Hour Factor**			0.750	0.500	0.600
1	4	**5**						
1	2	**3**	**Peak Period**	**12:00**	**to**	**00:00**		
2	0	**2**	**Volume**			82	99	181
0	1	**1**	**Peak Hour**			15:30	17:15	15:30
0	1	**1**	**Peak Volume**			16	20	30
3	0	**3**	**Peak Hour Factor**			0.667	0.714	0.938
0	1	**1**						
0	1	**1**	**Peak Period**	**07:00**	**to**	**09:00**		
1	0	**1**	**Volume**			19	24	43
1	1	**2**	**Peak Hour**			7:30	7:00	7:00
0	3	**3**	**Peak Volume**			11	16	24
0	0	**0**	**Peak Hour Factor**			0.688	0.500	0.600
0	1	**1**						
0	0	**0**	**Peak Period**	**16:00**	**to**	**18:00**		
1	1	**2**	**Volume**			16	30	46
0	1	**1**	**Peak Hour**			16:00	17:00	17:00
0	2	**2**	**Peak Volume**			10	18	24
82	**99**	**181**	**Peak Hour Factor**			0.625	0.900	0.857
45%	**55%**	**58%**						




SB
EB
WB

Prepared by National Data & Surveying Services

CLASSIFICATION

Pappas Way S/O W.B. Mason West Dwy/UPS Dwy

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_002

HOURLY BREAKDOWN

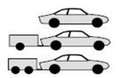
Time	NORTHBOUND													Total	SOUTHBOUND													Total	TOTALS													Total
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	
0:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11	0	22	0	1	0	0	0	0	0	0	0	0	0	23	0	33	0	1	0	0	0	0	0	0	0	0	0	34
1:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7	0	5	0	2	0	0	0	0	0	0	0	0	0	7	0	10	1	2	1	0	0	0	0	0	0	0	0	14
2:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8	0	16	1	0	0	0	0	0	0	0	0	0	0	17	0	23	1	0	1	0	0	0	0	0	0	0	0	25
3:00	0	9	1	0	0	1	0	0	0	0	0	0	0	11	0	6	2	0	2	0	0	0	0	0	0	0	0	10	0	15	3	0	2	1	0	0	0	0	0	0	0	21
4:00	0	18	3	2	0	4	0	0	0	0	0	0	0	27	0	13	3	0	1	0	0	0	0	0	0	0	0	17	0	31	6	2	1	4	0	0	0	0	0	0	0	44
5:00	0	80	17	2	0	0	0	0	0	0	0	0	0	99	0	45	15	1	1	1	0	0	0	0	0	0	0	63	0	125	32	3	1	1	0	0	0	0	0	0	0	162
6:00	0	83	9	10	5	2	0	0	0	0	0	0	0	109	0	67	13	3	9	0	0	1	0	0	0	0	0	93	0	150	22	13	14	2	0	1	0	0	0	0	0	202
7:00	0	119	14	3	5	1	0	0	0	0	0	0	0	142	0	71	29	4	25	4	0	0	0	0	0	0	0	133	0	190	43	7	30	5	0	0	0	0	0	0	0	275
8:00	0	133	9	3	3	1	0	0	0	0	0	0	0	149	0	106	19	1	11	0	0	0	0	0	0	0	0	137	0	239	28	4	14	1	0	0	0	0	0	0	0	286
9:00	0	85	13	1	4	2	0	0	0	0	0	0	0	105	0	104	19	4	13	1	0	0	0	0	0	0	0	141	0	189	32	5	17	3	0	0	0	0	0	0	0	246
10:00	1	68	10	7	4	2	0	0	0	0	0	0	0	92	1	83	16	4	8	0	0	0	2	0	0	0	0	114	2	151	26	11	12	2	0	0	2	0	0	0	0	206
11:00	1	56	15	4	4	0	0	1	1	0	0	0	0	82	3	70	21	3	6	0	0	0	0	0	0	0	0	103	4	126	36	7	10	0	0	1	1	0	0	0	0	185
12:00	0	74	12	2	7	0	0	1	0	0	0	0	0	96	1	81	15	0	5	0	0	1	0	0	0	0	0	103	1	155	27	2	12	0	0	2	0	0	0	0	0	199
13:00	2	58	10	5	7	1	0	0	1	0	0	0	0	84	1	142	30	1	5	4	0	1	0	0	0	0	0	184	3	200	40	6	12	5	0	1	1	0	0	0	0	268
14:00	1	48	8	1	6	2	0	1	0	0	0	0	0	67	2	209	43	3	7	0	0	1	0	0	0	0	0	265	3	257	51	4	13	2	0	2	0	0	0	0	0	332
15:00	0	48	24	4	6	0	0	0	0	0	0	0	0	82	1	245	37	2	3	1	0	0	0	0	0	0	0	289	1	293	61	6	9	1	0	0	0	0	0	0	0	371
16:00	0	68	3	0	2	2	0	0	0	0	0	0	0	75	1	268	18	0	2	0	0	0	0	0	0	0	0	289	1	336	21	0	4	2	0	0	0	0	0	0	0	364
17:00	0	64	3	2	3	0	0	0	0	0	0	0	0	72	2	298	19	0	2	0	0	0	0	0	0	0	0	321	2	362	22	2	5	0	0	0	0	0	0	0	0	393
18:00	0	66	4	2	3	0	0	0	0	0	0	0	0	75	1	241	9	6	2	0	0	0	0	0	0	0	0	259	1	307	13	8	5	0	0	0	0	0	0	0	0	334
19:00	0	57	1	1	4	1	0	0	0	0	0	0	0	64	0	123	8	1	1	0	0	0	1	0	0	0	0	134	0	180	9	2	5	1	0	0	1	0	0	0	0	198
20:00	0	59	0	0	1	3	0	0	0	0	0	0	0	63	0	84	7	3	1	0	0	0	0	0	0	0	0	95	0	143	7	3	2	3	0	0	0	0	0	0	0	158
21:00	0	32	3	0	1	0	0	0	0	0	0	0	0	36	1	61	1	1	2	1	0	0	0	0	0	0	0	67	1	93	4	1	3	1	0	0	0	0	0	0	0	103
22:00	0	31	0	0	0	0	0	0	0	0	0	0	0	31	1	56	4	9	2	0	0	0	0	0	0	0	0	72	1	87	4	9	2	0	0	0	0	0	0	0	0	103
23:00	0	18	0	1	0	2	0	0	0	0	0	0	0	21	0	33	0	1	1	1	0	0	0	0	0	0	0	36	0	51	0	2	1	3	0	0	0	0	0	0	0	57
Totals	5	1,297	160	50	67	24	0	3	2	0	0	0	0	1,608	15	2,449	329	50	109	13	0	4	3	0	0	0	0	2,972	20	3,746	489	100	176	37	0	7	5	0	0	0	0	4,580
% of Totals	0%	81%	10%	3%	4%	1%		0%	0%					100%	1%	82%	11%	2%	4%	0%		0%	0%					100%	0%	82%	11%	2%	4%	1%		0%	0%					100%

FHWA

CLASSIFICATION DEFINITIONS



#1 Motorcycles



#2 Passenger Cars



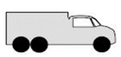
#3 2-Axle, 4-Tire Single Unit



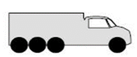
#4 Buses



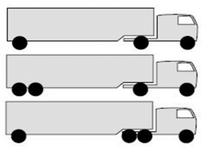
#5 2-Axle, 6-Tire Single Units



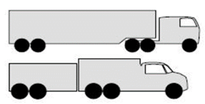
#6 3-Axle Single Units



#7 >=4-Axle Single Units



#8 <=4-Axle Single Trailers



#9 5-Axle Single Trailers



#10 >=6-Axle Single Trailers



#11 <=5-Axle Multi-Trailers



#12 6-Axle Multi-Trailers

ANY 7 OR MORE AXLE

#13 >=7-Axle Multi-Trailers

STATISTICS

00:00 - 12:00	2	674	92	32	27	13	0	1	1	0	0	0	0	842	4	608	138	23	76	6	0	1	2	0	0	0	0	858	6	1282	230	55	103	19	0	2	3	0	0	0	0	1700
%	0%	42%	6%	2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	52%	0%	20%	5%	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	28%	5%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	37%
Peak Hour	9:15	7:45	5:00	6:00	11:45	3:45	0:00	11:15	10:45	0:00	0:00	0:00	0:00	7:45	11:15	8:30	7:15	9:15	7:00	6:45	0:00	6:00	9:15	0:00	0:00	0:00	0:00	8:45	11:15	8:00	7:00	6:00	7:00	3:45	0:00	11:15	9:15	0:00	0:00	0:00	0:00	7:15
Peak Volume	1	135	17	10	7	5	0	2	1	0	0	0	0	151	4	112	32	5	25	4	0	1	2	0	0	0	0	146	5	239	43	13	30	5	0	2	2	0	0	0	0	290
12:00 - 24:00	3	623	68	18	40	11	0	2	1	0	0	0	0	766	11	1841	191	27	33	7	0	3	1	0	0	0	0	2114	14	2464	259	45	73	18	0	5	2	0	0	0	0	2880
%	0%	39%	4%	1%	2%	1%	0%	0%	0%	0%	0%	0%	0%	48%	0%	62%	6%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	71%	0%	54%	6%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	63%
Peak Hour	12:30	16:30	15:00	12:45	14:15	19:45	12:00	12:00	13:00	12:00	12:00	12:00	12:00	12:00	13:30	17:15	14:00	22:00	13:30	13:00	12:00	12:15	18:15	12:00	12:00	12:00	12:00	15:45	13:15	17:15	15:00	22:00	13:30	13:00	12:00	12:00	13:00	12:00	12:00	12:00	12:00	15:45
Peak Volume	2	77	24	5	9	4	0	1	1	0	0	0	0	96	3	307	43	9	9	4	0	2	1	0	0	0	0	328	4	371	61	9	15	5	0	2	1	0	0	0	0	402
07:00 - 09:00	0	252	23	6	8	2	0	0	0	0	0	0	0	291	0	177	48	5	36	4	0	0	0	0	0	0	0	270	0	429	71	11	44	6	0	0	0	0	0	0	0	561
%	0%	16%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%	6%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	9%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	12%
Peak Hour	7:00	7:45	7:00	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:00	8:00	7:15	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:15	7:00	8:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:15
Peak Volume	0	135	14	4	5	1	0	0	0	0	0	0	0	151	0	106	32	4	25	4	0	0	0	0	0	0	0	141	0	239	43	7	30	5	0	0	0	0	0	0	0	290
16:00 - 18:00	0	132	6	2	5	2	0	0	0	0	0	0	0	147	3	566	37	0	4	0	0	0	0	0	0	0	0	610	3	698	43	2	9	2	0	0	0	0	0	0	0	757
%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	19%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	0%	15%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%
Peak Hour	16:00	16:30	16:00	16:45	16:30	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:30	16:30	17:00	16:15	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	16:30	16:45	16:15	16:45	17:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:45
Peak Volume	0	77	3	2	3	2	0	0	0	0	0	0	0	85	3	298	19	0	2	0	0	0	0	0	0	0	0	321	3	369	22	2	5	2	0	0	0	0	0	0	0	398

Prepared by National Data & Surveying Services

CLASSIFICATION

Pappas Way S/O W.B. Mason West Dwy/UPS Dwy

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_002

15-MINUTE BREAKDOWN

Time	NORTHBOUND														SOUTHBOUND														TOTALS													
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
0:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	4
0:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	9	0	11	0	0	0	0	0	0	0	0	0	0	0	11
0:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	10	0	0	0	0	0	0	0	0	0	0	0	10
0:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	1	0	0	0	0	0	0	0	0	0	7	0	8	0	1	0	0	0	0	0	0	0	0	0	9
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	1	0	0	0	0	0	0	0	0	0	4	0	5	0	1	0	0	0	0	0	0	0	0	0	6
1:15	0	2	0	0	1	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	1	0	0	0	0	0	0	0	0	4
1:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	3
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	8	0	0	0	0	0	0	0	0	0	0	0	8
2:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	1	0	0	0	0	0	0	0	0	0	0	7	0	8	1	0	0	0	0	0	0	0	0	0	0	9
2:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:45	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	0	0	0	0	0	0	0	0	3
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	3
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	2	0	0	0	0	0	0	0	0	5	0	4	0	0	2	0	0	0	0	0	0	0	0	6
3:45	0	4	1	0	0	1	0	0	0	0	0	0	0	6	0	2	1	0	0	0	0	0	0	0	0	0	0	3	0	6	2	0	0	1	0	0	0	0	0	0	0	9
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:15	0	2	0	1	0	3	0	0	0	0	0	0	0	6	0	2	2	0	0	0	0	0	0	0	0	0	0	4	0	4	2	1	0	3	0	0	0	0	0	0	0	10
4:30	0	7	2	0	0	1	0	0	0	0	0	0	0	10	0	4	0	0	1	0	0	0	0	0	0	0	0	5	0	11	2	0	1	1	0	0	0	0	0	0	0	15
4:45	0	9	1	1	0	0	0	0	0	0	0	0	0	11	0	5	1	0	0	0	0	0	0	0	0	0	0	6	0	14	2	1	0	0	0	0	0	0	0	0	0	17
5:00	0	11	5	1	0	0	0	0	0	0	0	0	0	17	0	4	1	0	0	0	0	0	0	0	0	0	0	5	0	15	6	1	0	0	0	0	0	0	0	0	0	22
5:15	0	24	3	1	0	0	0	0	0	0	0	0	0	28	0	12	5	0	0	1	0	0	0	0	0	0	0	18	0	36	8	1	0	1	0	0	0	0	0	0	0	46
5:30	0	20	4	0	0	0	0	0	0	0	0	0	0	24	0	16	2	1	0	0	0	0	0	0	0	0	0	19	0	36	6	1	0	0	0	0	0	0	0	0	0	43
5:45	0	25	5	0	0	0	0	0	0	0	0	0	0	30	0	13	7	0	1	0	0	0	0	0	0	0	0	21	0	38	12	0	1	0	0	0	0	0	0	0	0	51
6:00	0	20	4	1	1	1	0	0	0	0	0	0	0	27	0	15	4	1	1	0	0	0	0	0	0	0	0	21	0	35	8	2	2	1	0	0	0	0	0	0	0	48
6:15	0	17	2	4	1	1	0	0	0	0	0	0	0	25	0	16	4	2	1	0	0	0	0	0	0	0	0	23	0	33	6	6	2	1	0	0	0	0	0	0	0	48
6:30	0	24	0	3	3	0	0	0	0	0	0	0	0	30	0	14	2	0	3	0	0	0	0	0	0	0	0	19	0	38	2	3	6	0	0	0	0	0	0	0	0	49
6:45	0	22	3	2	0	0	0	0	0	0	0	0	0	27	0	22	3	0	4	0	0	1	0	0	0	0	0	30	0	44	6	2	4	0	0	1	0	0	0	0	0	57
7:00	0	22	4	0	2	1	0	0	0	0	0	0	0	29	0	17	4	1	8	1	0	0	0	0	0	0	0	31	0	39	8	1	10	2	0	0	0	0	0	0	0	60
7:15	0	33	3	2	0	0	0	0	0	0	0	0	0	38	0	13	8	1	7	2	0	0	0	0	0	0	0	31	0	46	11	3	7	2	0	0	0	0	0	0	0	69
7:30	0	31	5	0	1	0	0	0	0	0	0	0	0	37	0	25	8	1	5	1	0	0	0	0	0	0	0	40	0	56	13	1	6	1	0	0	0	0	0	0	0	77
7:45	0	33	2	1	2	0	0	0	0	0	0	0	0	38	0	16	9	1	5	0	0	0	0	0	0	0	0	31	0	49	11	2	7	0	0	0	0	0	0	0	0	69
8:00	0	35	1	0	0	0	0	0	0	0	0	0	0	36	0	29	7	0	3	0	0	0	0	0	0	0	0	39	0	64	8	0	3	0	0	0	0	0	0	0	0	75
8:15	0	34	3	1	1	0	0	0	0	0	0	0	0	39	0	19	3	0	5	0	0	0	0	0	0	0	0	27	0	53	6	1	6	0	0	0	0	0	0	0	0	66
8:30	0	33	2	2	0	1	0	0	0	0	0	0	0	38	0	24	4	0	2	0	0	0	0	0	0	0	0	30	0	57	6	2	2	1	0	0	0	0	0	0	0	68
8:45	0	31	3	0	2	0	0	0	0	0	0	0	0	36	0	34	5	1	1	0	0	0	0	0	0	0	0	41	0	65	8	1	3	0	0	0	0	0	0	0	0	77
9:00	0	28	3	0	1	0	0	0	0	0	0	0	0	32	0	27	4	0	1	1	0	0	0	0	0	0	0	33	0	55	7	0	2	1	0	0	0	0	0	0	0	65
9:15	0	26	3	0	2	1	0	0	0	0	0	0	0	32	0	27	6	1	4	0	0	0	0	0	0	0	0	38	0	53	9	1	6	1	0	0	0	0	0	0	0	70
9:30	0	12	6	0	0	0	0	0	0	0	0	0	0	18	0	24	5	2	3	0	0	0	0	0	0	0	0	34	0	36	11	2	3	0	0	0	0	0	0	0	0	52
9:45	0	19	1	1	1	1	0	0	0	0	0	0	0	23	0	26	4	1	5	0	0	0	0	0	0	0	0	36	0	45	5	2	6	1	0	0	0	0	0	0	0	59
10:00	1	19	2	4	2	0	0	0	0	0	0	0	0	28	0	19	5	1	3	0	0	0	2	0	0	0	0	30	1	38	7	5	5	0	0	0	2	0	0	0	0	58
10:15	0	15	3	1	1	1	0	0	0	0	0	0	0	21	1	21	5	0	2	0	0	0	0	0	0	0	0	29	1	36	8	1	3	1	0	0	0	0	0	0	0	50
10:30	0	20	0	2	0	0	0	0	0	0	0	0	0	22	0	14	5	1	1	0	0	0	0	0	0	0	0	21	0	34	5	3	1	0	0	0	0	0	0	0	0	43
10:45	0	14	5	0	1	1	0	0	0	0	0	0	0	21	0	29	1	2	2	0	0	0	0	0	0	0	0	34	0	43	6	2	3	1	0	0	0	0	0	0	0	55
11:00	0	10	4	0	1	0	0	0	0	0	0	0	0	15	0	13	3	0	4	0	0	0	0	0	0	0	0	20	0	23	7	0	5	0	0	0	0	0	0	0	0	35
11:15	0	10	4	2	1	0	0	1	0	0	0	0	0	18	0	20	5	1	1	0	0	0	0	0	0	0	0	27	0	30	9	3	2	0	0	1	0	0	0	0	0	45
11:30	0	19	2	2	0	0	0	0	1	0	0	0	0	24	1	20	7	0	1	0	0	0	0	0	0	0	0	29	1	39	9	2	1	0	0	0	1	0	0	0	0	53
11:45	1	17	5	0	2	0	0	0	0	0	0	0	0	25	2	17	6	2	0	0	0	0	0	0	0	0	0	27	3	34	11	2	2	0	0	0	0	0	0	0	0	52

Prepared by National Data & Surveying Services

CLASSIFICATION

Pappas Way S/O W.B. Mason West Dwy/UPS Dwy

Day: Tuesday
Date: 12/16/2025

City: Boston
Project #: MA25_430194_002

15-MINUTE BREAKDOWN

Time	NORTHBOUND														SOUTHBOUND														TOTALS													
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
12:00	0	21	3	1	1	0	0	1	0	0	0	0	0	27	1	23	4	0	3	0	0	0	0	0	0	0	0	31	1	44	7	1	4	0	0	1	0	0	0	0	0	58
12:15	0	23	3	0	0	0	0	0	0	0	0	0	0	26	0	20	2	0	0	0	0	1	0	0	0	0	0	23	0	43	5	0	0	0	0	1	0	0	0	0	0	49
12:30	0	17	4	0	4	0	0	0	0	0	0	0	0	25	0	18	4	0	1	0	0	0	0	0	0	0	0	23	0	35	8	0	5	0	0	0	0	0	0	0	0	48
12:45	0	13	2	1	2	0	0	0	0	0	0	0	0	18	0	20	5	0	1	0	0	0	0	0	0	0	0	26	0	33	7	1	3	0	0	0	0	0	0	0	0	44
13:00	0	17	1	1	0	1	0	0	0	0	0	0	0	20	0	27	6	0	0	3	0	1	0	0	0	0	0	37	0	44	7	1	0	4	0	1	0	0	0	0	0	57
13:15	2	8	3	0	2	0	0	0	0	0	0	0	0	15	0	41	5	0	1	0	0	0	0	0	0	0	0	47	2	49	8	0	3	0	0	0	0	0	0	0	0	62
13:30	0	13	4	3	2	0	0	0	0	0	0	0	0	22	1	36	10	1	2	0	0	0	0	0	0	0	0	50	1	49	14	4	4	0	0	0	0	0	0	0	0	72
13:45	0	20	2	1	3	0	0	0	1	0	0	0	0	27	0	38	9	0	2	1	0	0	0	0	0	0	0	50	0	58	11	1	5	1	0	0	1	0	0	0	0	77
14:00	0	11	0	0	0	1	0	0	0	0	0	0	0	12	1	60	12	0	2	0	0	0	0	0	0	0	0	75	1	71	12	0	2	1	0	0	0	0	0	0	0	87
14:15	1	17	2	0	1	0	0	0	0	0	0	0	0	21	1	50	11	1	3	0	0	0	0	0	0	0	0	66	2	67	13	1	4	0	0	0	0	0	0	0	0	87
14:30	0	10	3	1	2	0	0	0	0	0	0	0	0	16	0	48	10	1	2	0	0	1	0	0	0	0	0	62	0	58	13	2	4	0	0	1	0	0	0	0	0	78
14:45	0	10	3	0	3	1	0	1	0	0	0	0	0	18	0	51	10	1	0	0	0	0	0	0	0	0	0	62	0	61	13	1	3	1	0	1	0	0	0	0	0	80
15:00	0	11	2	1	3	0	0	0	0	0	0	0	0	17	1	50	9	0	1	1	0	0	0	0	0	0	0	62	1	61	11	1	4	1	0	0	0	0	0	0	0	79
15:15	0	12	8	0	1	0	0	0	0	0	0	0	0	21	0	53	10	0	2	0	0	0	0	0	0	0	0	65	0	65	18	0	3	0	0	0	0	0	0	0	0	86
15:30	0	12	9	2	1	0	0	0	0	0	0	0	0	24	0	51	6	1	0	0	0	0	0	0	0	0	0	58	0	63	15	3	1	0	0	0	0	0	0	0	0	82
15:45	0	13	5	1	1	0	0	0	0	0	0	0	0	20	0	91	12	1	0	0	0	0	0	0	0	0	0	104	0	104	17	2	1	0	0	0	0	0	0	0	0	124
16:00	0	23	2	0	0	0	0	0	0	0	0	0	0	25	0	64	9	0	0	0	0	0	0	0	0	0	0	73	0	87	11	0	0	0	0	0	0	0	0	0	0	98
16:15	0	6	0	0	1	1	0	0	0	0	0	0	0	8	0	64	3	0	2	0	0	0	0	0	0	0	0	69	0	70	3	0	3	1	0	0	0	0	0	0	0	77
16:30	0	19	1	0	1	0	0	0	0	0	0	0	0	21	1	76	5	0	0	0	0	0	0	0	0	0	0	82	1	95	6	0	1	0	0	0	0	0	0	0	0	103
16:45	0	20	0	0	0	1	0	0	0	0	0	0	0	21	0	64	1	0	0	0	0	0	0	0	0	0	0	65	0	84	1	0	0	1	0	0	0	0	0	0	0	86
17:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22	1	60	10	0	0	0	0	0	0	0	0	0	0	71	1	80	12	0	0	0	0	0	0	0	0	0	0	93
17:15	0	18	0	1	2	0	0	0	0	0	0	0	0	21	1	84	2	0	0	0	0	0	0	0	0	0	0	87	1	102	2	1	2	0	0	0	0	0	0	0	0	108
17:30	0	15	0	1	1	0	0	0	0	0	0	0	0	17	0	88	6	0	0	0	0	0	0	0	0	0	0	94	0	103	6	1	1	0	0	0	0	0	0	0	0	111
17:45	0	11	1	0	0	0	0	0	0	0	0	0	0	12	0	66	1	0	2	0	0	0	0	0	0	0	0	69	0	77	2	0	2	0	0	0	0	0	0	0	0	81
18:00	0	20	2	0	2	0	0	0	0	0	0	0	0	24	1	69	1	1	0	0	0	0	0	0	0	0	0	72	1	89	3	1	2	0	0	0	0	0	0	0	0	96
18:15	0	17	0	1	1	0	0	0	0	0	0	0	0	19	0	69	3	1	0	0	0	0	0	0	0	0	0	73	0	86	3	2	1	0	0	0	0	0	0	0	0	92
18:30	0	14	2	0	0	0	0	0	0	0	0	0	0	16	0	55	1	2	1	0	0	0	0	0	0	0	0	59	0	69	3	2	1	0	0	0	0	0	0	0	0	75
18:45	0	15	0	1	0	0	0	0	0	0	0	0	0	16	0	48	4	2	1	0	0	0	0	0	0	0	0	55	0	63	4	3	1	0	0	0	0	0	0	0	0	71
19:00	0	14	0	1	2	0	0	0	0	0	0	0	0	17	0	49	2	0	1	0	0	0	1	0	0	0	0	53	0	63	2	1	3	0	0	0	1	0	0	0	0	70
19:15	0	9	0	0	1	0	0	0	0	0	0	0	0	10	0	29	0	1	0	0	0	0	0	0	0	0	0	30	0	38	0	1	1	0	0	0	0	0	0	0	0	40
19:30	0	11	1	0	1	0	0	0	0	0	0	0	0	13	0	20	3	0	0	0	0	0	0	0	0	0	0	23	0	31	4	0	1	0	0	0	0	0	0	0	0	36
19:45	0	23	0	0	0	1	0	0	0	0	0	0	0	24	0	25	3	0	0	0	0	0	0	0	0	0	0	28	0	48	3	0	0	1	0	0	0	0	0	0	0	52
20:00	0	23	0	0	1	2	0	0	0	0	0	0	0	26	0	27	1	0	0	0	0	0	0	0	0	0	0	28	0	50	1	0	1	2	0	0	0	0	0	0	0	54
20:15	0	19	0	0	0	0	0	0	0	0	0	0	0	19	0	23	2	0	0	0	0	0	0	0	0	0	0	25	0	42	2	0	0	0	0	0	0	0	0	0	0	44
20:30	0	7	0	0	0	1	0	0	0	0	0	0	0	8	0	15	1	2	0	0	0	0	0	0	0	0	0	18	0	22	1	2	0	1	0	0	0	0	0	0	0	26
20:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10	0	19	3	1	1	0	0	0	0	0	0	0	0	24	0	29	3	1	1	0	0	0	0	0	0	0	0	34
21:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7	0	18	0	0	0	1	0	0	0	0	0	0	0	19	0	23	1	0	1	1	0	0	0	0	0	0	0	26
21:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8	1	15	1	0	0	0	0	0	0	0	0	0	0	17	1	23	1	0	0	0	0	0	0	0	0	0	0	25
21:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11	0	14	0	1	2	0	0	0	0	0	0	0	0	17	0	24	1	1	2	0	0	0	0	0	0	0	0	28
21:45	0	9	1	0	0	0	0	0	0	0	0	0	0	10	0	14	0	0	0	0	0	0	0	0	0	0	0	14	0	23	1	0	0	0	0	0	0	0	0	0	0	24
22:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7	1	19	1	3	0	0	0	0	0	0	0	0	0	24	1	26	1	3	0	0	0	0	0	0	0	0	0	31
22:15	0	9	0	0	0	0	0	0	0	0	0	0	0	9	0	15	2	1	1	0	0	0	0	0	0	0	0	19	0	24	2	1	1	0	0	0	0	0	0	0	0	28
22:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8	0	12	1	1	1	0	0	0	0	0	0	0	0	15	0	20	1	1	1	0	0	0	0	0	0	0	0	23
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23:00	0	5	0	0	0	1	0	0	0	0	0	0	0	6	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	10	0	0	0	1	0	0	0	0	0	0	0	11
23:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	8	0	0	0	0	0	0	0	0	0	0	0	8	0	12	0	0	0	0	0	0	0	0	0	0	0	12
23:30	0	5	0	1	0	0	0	0	0	0	0	0	0	6	0	11	0	0	0	1	0	0	0	0	0	0	0	12	0	16	0	1	0	1	0	0	0	0	0	0	0	18
23:45	0	4	0	0	0	1	0	0	0	0	0	0	0	5	0	9	0	1	1	0	0	0	0	0	0	0	0	11	0	13	0	1	1	1	0	0	0	0	0	0	0	16
Totals	**5**	**1,297**	**160**	**50**	**67**	**24**	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**1,608**	**15**	**2,449**	**329**	**50**	**109**	**13**	**0**	**4**	**3**	**0**	**0**	**0**	**0**	**2,972**	**20**	**3,746**	**489**	**100**	**176**	**37**	**0**	**7**	**5**	**0**	**0**	**0**	**0**	**4,580**
% of Totals	0%	81%	10%	3%	4%	1%		0%	0%					**100%**	1%	82%	11%	2%	4%	0%		0%	0%					**100%**	0%	82%	11%	2%	4%	1%		0%	0%					**100%**

Prepared by Nationa

VO

Pappas Way S/O W.B. I

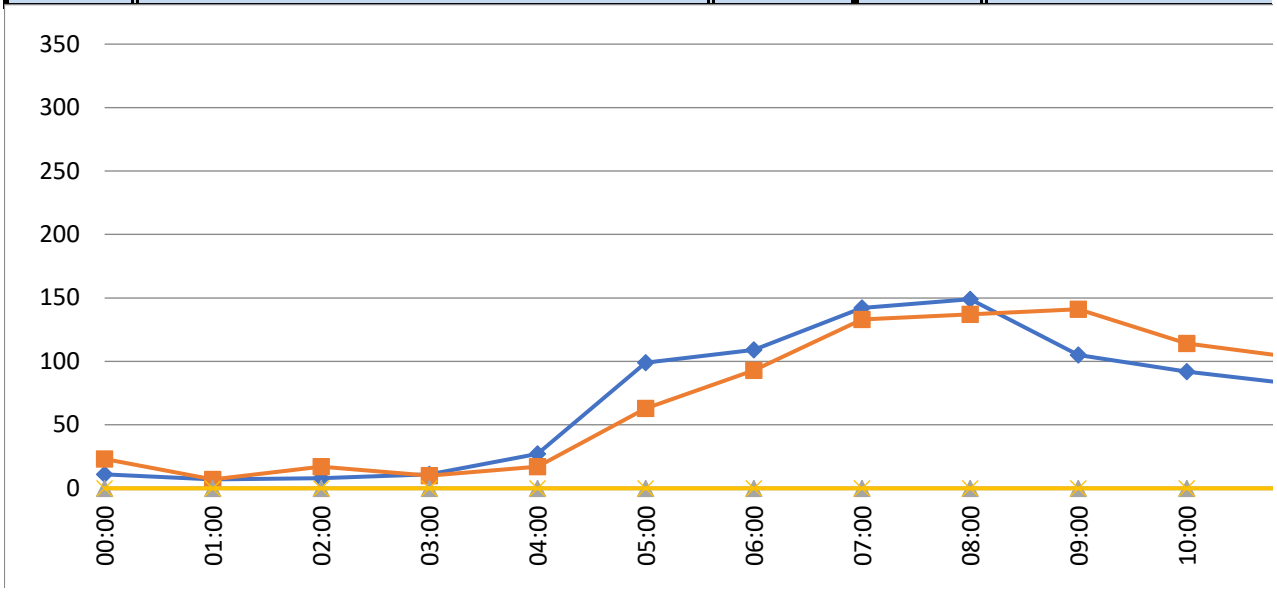
Day: Tuesday

Date: 12/16/2025

DAILY TOTALS	NB	SB
	1,608	2,972

15-Minutes Interval								
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB
0:00	3	1			4	12:00	27	31
0:15	2	9			11	12:15	26	23
0:30	4	6			10	12:30	25	23
0:45	2	7			9	12:45	18	26
1:00	2	4			6	13:00	20	37
1:15	3	1			4	13:15	15	47
1:30	2	1			3	13:30	22	50
1:45	0	1			1	13:45	27	50
2:00	2	6			8	14:00	12	75
2:15	2	7			9	14:15	21	66
2:30	3	2			5	14:30	16	62
2:45	1	2			3	14:45	18	62
3:00	2	1			3	15:00	17	62
3:15	2	1			3	15:15	21	65
3:30	1	5			6	15:30	24	58
3:45	6	3			9	15:45	20	104
4:00	0	2			2	16:00	25	73
4:15	6	4			10	16:15	8	69
4:30	10	5			15	16:30	21	82
4:45	11	6			17	16:45	21	65
5:00	17	5			22	17:00	22	71
5:15	28	18			46	17:15	21	87
5:30	24	19			43	17:30	17	94
5:45	30	21			51	17:45	12	69
6:00	27	21			48	18:00	24	72

6:15	25	23			**48**	**18:15**	19	73
6:30	30	19			**49**	**18:30**	16	59
6:45	27	30			**57**	**18:45**	16	55
7:00	29	31			**60**	**19:00**	17	53
7:15	38	31			**69**	**19:15**	10	30
7:30	37	40			**77**	**19:30**	13	23
7:45	38	31			**69**	**19:45**	24	28
8:00	36	39			**75**	**20:00**	26	28
8:15	39	27			**66**	**20:15**	19	25
8:30	38	30			**68**	**20:30**	8	18
8:45	36	41			**77**	**20:45**	10	24
9:00	32	33			**65**	**21:00**	7	19
9:15	32	38			**70**	**21:15**	8	17
9:30	18	34			**52**	**21:30**	11	17
9:45	23	36			**59**	**21:45**	10	14
10:00	28	30			**58**	**22:00**	7	24
10:15	21	29			**50**	**22:15**	9	19
10:30	22	21			**43**	**22:30**	8	15
10:45	21	34			**55**	**22:45**	7	14
11:00	15	20			**35**	**23:00**	6	5
11:15	18	27			**45**	**23:15**	4	8
11:30	24	29			**53**	**23:30**	6	12
11:45	25	27			**52**	**23:45**	5	11
TOTALS	**842**	**858**	**0**	**0**	**1700**	**TOTALS**	**766**	**2114**
SPLIT %	**50%**	**50%**	**0%**	**0%**	**37%**	**SPLIT %**	**27%**	**73%**




NB

l Data & Surveying Services

)LUME

Mason West Dwy/UPS Dwy

City: Boston

Project #: MA25_430194_002

EB	WB	Total
0	0	4,580

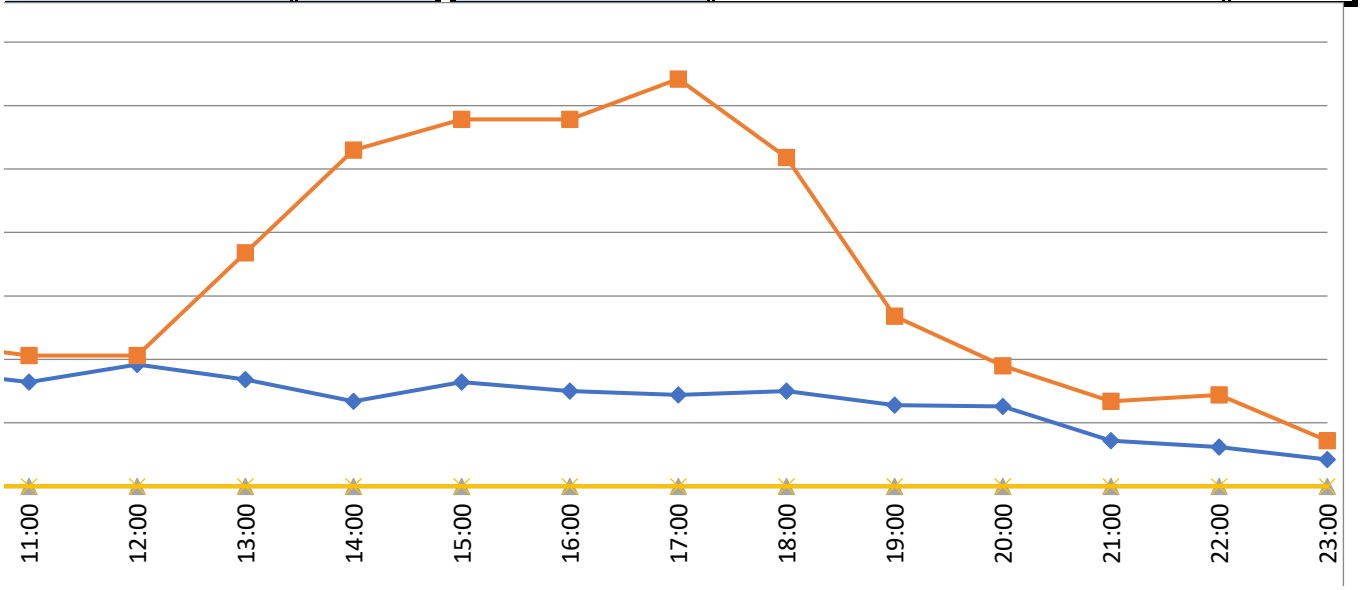
DAILY TOTALS

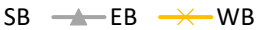
EB	WB	TOTAL
		58
		49
		48
		44
		57
		62
		72
		77
		87
		87
		78
		80
		79
		86
		82
		124
		98
		77
		103
		86
		93
		108
		111
		81
		96

Hourly Intervals						
TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	11	23			34
01:00	02:00	7	7			14
02:00	03:00	8	17			25
03:00	04:00	11	10			21
04:00	05:00	27	17			44
05:00	06:00	99	63			162
06:00	07:00	109	93			202
07:00	08:00	142	133			275
08:00	09:00	149	137			286
09:00	10:00	105	141			246
10:00	11:00	92	114			206
11:00	12:00	82	103			185
12:00	13:00	96	103			199
13:00	14:00	84	184			268
14:00	15:00	67	265			332
15:00	16:00	82	289			371
16:00	17:00	75	289			364
17:00	18:00	72	321			393
18:00	19:00	75	259			334
19:00	20:00	64	134			198
20:00	21:00	63	95			158
21:00	22:00	36	67			103
22:00	23:00	31	72			103
23:00	00:00	21	36			57

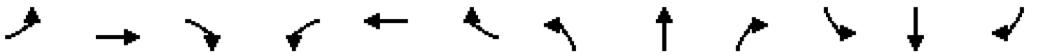
STATISTICS

		92		NB	SB	EB	WB	TOTAL
		75	Peak Period	00:00	to	12:00		
		71	Volume	842	858			1700
		70	Peak Hour	7:45	8:45			7:15
		40	Peak Volume	151	146			290
		36	Peak Hour Factor	0.968	0.890			0.942
		52						
		54	Peak Period	12:00	to	00:00		
		44	Volume	766	2114			2880
		26	Peak Hour	12:00	15:45			15:45
		34	Peak Volume	96	328			402
		26	Peak Hour Factor	0.889	0.788			0.810
		25						
		28	Peak Period	07:00	to	09:00		
		24	Volume	291	270			561
		31	Peak Hour	7:45	7:15			7:15
		28	Peak Volume	151	141			290
		23	Peak Hour Factor	0.968	0.881			0.942
		21						
		11	Peak Period	16:00	to	18:00		
		12	Volume	147	610			757
		18	Peak Hour	16:30	17:00			16:45
		16	Peak Volume	85	321			398
0	0	2880	Peak Hour Factor	0.966	0.854			0.896
0%	0%	63%						




SB
EB
WB

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	63	0	0	143	170	4	124	30	130	0	34
Future Volume (vph)	8	63	0	0	143	170	4	124	30	130	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97		1.00	0.87	0.96		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1348	1673	0	0	1613	1645	0	1835	1334	1504	0	1277
Flt Permitted	0.630							0.999		0.186		
Satd. Flow (perm)	889	1673	0	0	1613	1602	0	1833	1165	282	0	1277
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						185			132			125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	3		7	7		3	18		51	51		18
Confl. Bikes (#/hr)									9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	6%	0%	0%	6%	8%	0%	0%	17%	12%	0%	18%
Adj. Flow (vph)	9	68	0	0	155	185	4	135	33	141	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	68	0	0	155	185	0	139	33	141	0	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



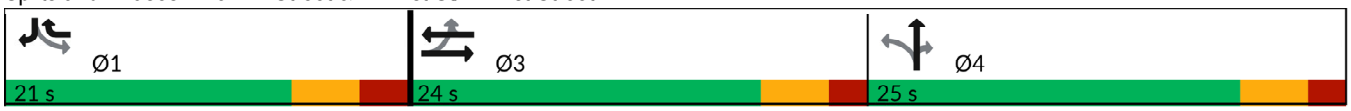
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	21.0	25.0	25.0	25.0	21.0		21.0
Total Split (%)	34.3%	34.3%			34.3%	30.0%	35.7%	35.7%	35.7%	30.0%		30.0%
Maximum Green (s)	18.5	18.5			18.5	15.0	19.5	19.5	19.5	15.0		15.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	12.0	12.0			12.0	31.5		11.3	11.3	22.6		22.6
Actuated g/C Ratio	0.25	0.25			0.25	0.65		0.23	0.23	0.46		0.46
v/c Ratio	0.04	0.17			0.39	0.17		0.33	0.09	1.08		0.06
Control Delay (s/veh)	16.0	17.0			20.2	1.3		20.0	0.5	137.5		0.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	16.0	17.0			20.2	1.3		20.0	0.5	137.5		0.2
LOS	B	B			C	A		B	A	F		A
Approach Delay (s/veh)		16.9			9.9			16.2			109.0	
Approach LOS		B			A			B			F	
Queue Length 50th (ft)	2	17			40	0		35	0	~64		0
Queue Length 95th (ft)	14	46			91	18		81	0	#185		0
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	383	721			695	1120		829	599	130		659
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.02	0.09			0.22	0.17		0.17	0.06	1.08		0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 48.8			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay (s/veh): 35.0		Intersection LOS: D	
Intersection Capacity Utilization 45.1%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

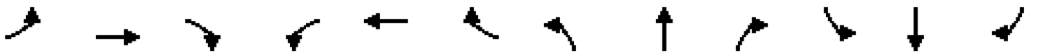
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: D Street & W First St/W First Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	82	123	0	35	10	143	157	0	23	40	29
Future Volume (vph)	74	82	123	0	35	10	143	157	0	23	40	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		0.99						0.95	
Frt			0.850		0.969						0.957	
Flt Protected		0.977						0.977			0.988	
Satd. Flow (prot)	0	1614	1446	0	1776	0	0	1760	0	0	1423	0
Flt Permitted		0.842						0.422			0.854	
Satd. Flow (perm)	0	1380	1421	0	1776	0	0	760	0	0	1186	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			131		11							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			543			286			2036	
Travel Time (s)		29.1			12.3			6.5			46.3	
Confl. Peds. (#/hr)	5		2	2		5	13		54	54		13
Confl. Bikes (#/hr)									8			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	15%	8%	0%	17%	0%	6%	5%	0%	4%	28%	21%
Adj. Flow (vph)	78	86	129	0	37	11	151	165	0	24	42	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	129	0	48	0	0	316	0	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom		NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		27.0	21.0	21.0		27.0	27.0		23.0	23.0	
Total Split (%)	21.0%		27.0%	21.0%	21.0%		27.0%	27.0%		23.0%	23.0%	
Maximum Green (s)	15.0		21.0	15.0	15.0		21.0	21.0		18.0	18.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		24.4	37.1		10.3			23.0			15.1	
Actuated g/C Ratio		0.24	0.37		0.10			0.23			0.15	
v/c Ratio		0.44	0.21		0.25			1.82			0.54	
Control Delay (s/veh)		31.9	3.9		37.1			415.5			48.2	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		31.9	3.9		37.1			415.5			48.2	
LOS		C	A		D			F			D	
Approach Delay (s/veh)		19.6			37.1			415.5			48.2	
Approach LOS		B			D			F			D	
Queue Length 50th (ft)		93	0		25			~317			74	
Queue Length 95th (ft)		149	34		64			#492			132	
Internal Link Dist (ft)		1200			463			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		498	615		311			174			238	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.33	0.21		0.15			1.82			0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 19 (19%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.82			
Intersection Signal Delay (s/veh): 190.3		Intersection LOS: F	
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

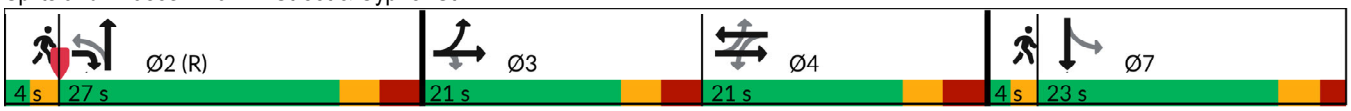
Intersection Summary

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

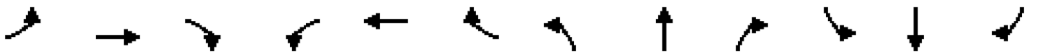
Queue shown is maximum after two cycles.

Splits and Phases: 64: D Street & Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	36	25	53	49	218	94	232	155	101	106	197
Future Volume (vph)	70	36	25	53	49	218	94	232	155	101	106	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.96		0.96			0.98	1.00		
Frt		0.938				0.850			0.850		0.902	
Flt Protected	0.950			0.950				0.986		0.950		
Satd. Flow (prot)	1546	1554	0	1296	1673	1501	0	1630	1369	1662	1571	0
Flt Permitted	0.950			0.950				0.810		0.443		
Satd. Flow (perm)	1530	1554	0	1248	1673	1440	0	1339	1339	774	1571	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						225			273		83	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)	4		8	8		4			1	1		
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	3%	8%	30%	6%	4%	4%	14%	14%	5%	13%	7%
Adj. Flow (vph)	72	37	26	55	51	225	97	239	160	104	109	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	63	0	55	51	225	0	336	160	104	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

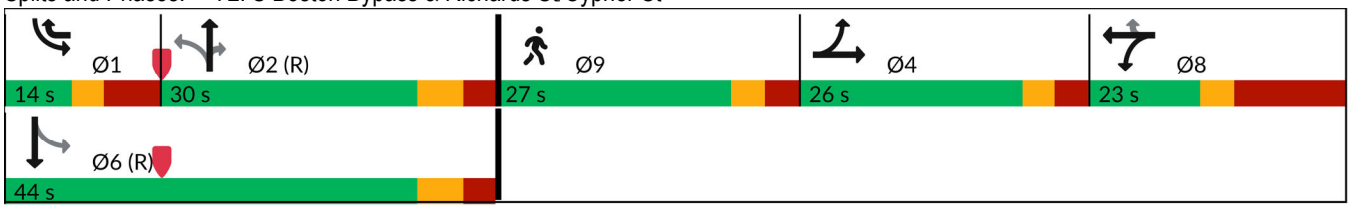
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.5	12.5		12.2	12.2	24.1		66.4	66.4	81.3	83.3	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.20		0.55	0.55	0.68	0.69	
v/c Ratio	0.45	0.39		0.42	0.30	0.47		0.45	0.19	0.17	0.28	
Control Delay (s/veh)	58.8	56.6		59.6	53.7	7.3		23.3	0.5	10.7	8.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	58.8	56.6		59.6	53.7	7.3		23.3	0.5	10.7	8.4	
LOS	E	E		E	D	A		C	A	B	A	
Approach Delay (s/veh)		57.8			23.2			16.0			8.9	
Approach LOS		E			C			B			A	
Queue Length 50th (ft)	57	48		51	39	0		183	0	31	77	
Queue Length 95th (ft)	106	92		101	79	56		345	0	68	162	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	283	284		141	182	474		740	862	597	1115	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.25	0.22		0.39	0.28	0.47		0.45	0.19	0.17	0.28	

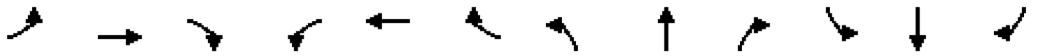
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 19.7		Intersection LOS: B	
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St

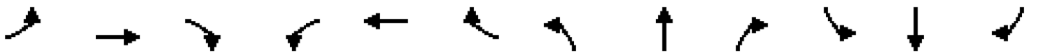


Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	5	11	7	50	13	205	43	100	94	8
Future Volume (vph)	12	1	5	11	7	50	13	205	43	100	94	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.96	0.88		0.94	0.94		0.96		0.88	0.98	
Frt			0.850			0.850		0.975			0.988	
Flt Protected		0.956			0.971			0.998		0.950		
Satd. Flow (prot)	0	1569	1615	0	1722	1201	0	3007	0	1620	1412	0
Flt Permitted		0.791			0.856			0.947		0.580		
Satd. Flow (perm)	0	1242	1424	0	1429	1130	0	2825	0	875	1412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			55		46			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	27		34	34		27	73		53	53		73
Confl. Bikes (#/hr)									10			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	17%	0%	0%	0%	0%	30%	0%	7%	0%	4%	20%	38%
Adj. Flow (vph)	13	1	5	12	8	54	14	220	46	108	101	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	5	0	20	54	0	280	0	108	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

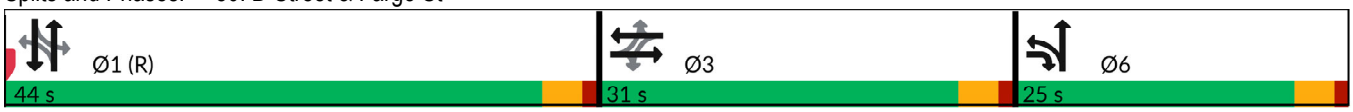


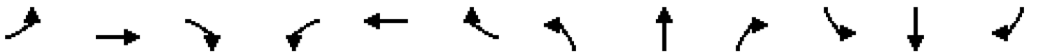
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	31.0	31.0	25.0	31.0	31.0	31.0	25.0			44.0	44.0	
Total Split (%)	31.0%	31.0%	25.0%	31.0%	31.0%	31.0%	25.0%			44.0%	44.0%	
Maximum Green (s)	27.0	27.0	21.0	27.0	27.0	27.0	21.0			40.0	40.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.4	19.8		9.4	9.4		86.6		74.6	74.6	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.12	0.02		0.15	0.35		0.11		0.17	0.10	
Control Delay (s/veh)		42.8	8.6		43.3	17.6		1.9		5.2	4.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		42.8	8.6		43.3	17.6		1.9		5.2	4.3	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		33.8			24.6			1.9			4.7	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8	0		12	0		0		18	19	
Queue Length 95th (ft)		27	6		34	44		m8		43	43	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		360	489		414	366		2550		653	1055	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.04	0.01		0.05	0.15		0.11		0.17	0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 42 (42%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay (s/veh): 6.8		Intersection LOS: A	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

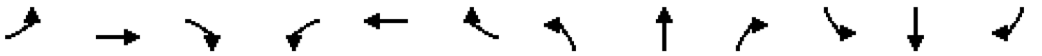
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	229	56	14	262	269	86	167	20	188	135	95
Future Volume (vph)	65	229	56	14	262	269	86	167	20	188	135	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.96	0.96			0.93		0.93	0.99		0.95	0.95	
Frt		0.970			0.926			0.984			0.949	
Flt Protected	0.950				0.999		0.950	0.998		0.950	0.992	
Satd. Flow (prot)	1472	2686	0	0	2457	0	1254	2629	0	1356	2444	0
Flt Permitted	0.379				0.943		0.950	0.998		0.950	0.992	
Satd. Flow (perm)	562	2686	0	0	2313	0	1165	2621	0	1284	2422	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		26						9				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	75		106	106		75	68		43	43		68
Confl. Bikes (#/hr)			4			12			4			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	9%	11%	43%	12%	7%	10%	11%	15%	9%	10%	3%
Parking (#/hr)			0						0			
Adj. Flow (vph)	67	236	58	14	270	277	89	172	21	194	139	98
Shared Lane Traffic (%)							10%			25%		
Lane Group Flow (vph)	67	294	0	0	561	0	80	202	0	145	286	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	

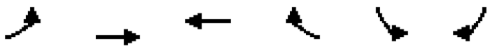


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	64.2	53.5			53.5		16.1	16.1		20.2	20.2	
Actuated g/C Ratio	0.54	0.45			0.45		0.13	0.13		0.17	0.17	
v/c Ratio	0.18	0.24			0.54		0.48	0.56		0.64	0.69	
Control Delay (s/veh)	15.1	21.3			21.5		56.4	51.8		58.7	55.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	15.1	21.3			21.5		56.4	51.8		58.7	55.8	
LOS	B	C			C		E	D		E	E	
Approach Delay (s/veh)		20.2			21.5			53.1			56.7	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)	22	69			134		69	85		124	124	
Queue Length 95th (ft)	57	128			219		121	120		198	171	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	388	1211			1031		261	554		288	519	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.17	0.24			0.54		0.31	0.36		0.50	0.55	

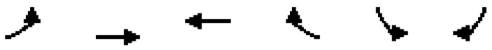
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 18 (15%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 35.9		Intersection LOS: D	
Intersection Capacity Utilization 90.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 105: D Street & Summer Street





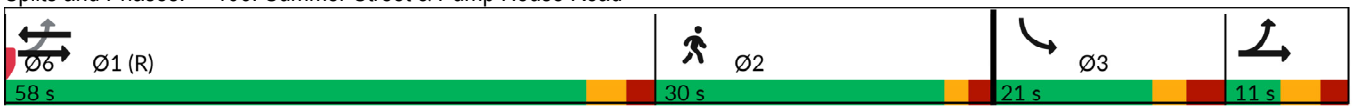
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	7	431	541	484	174	26	
Future Volume (vph)	7	431	541	484	174	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.97		0.97		
Frt			0.929		0.980		
Flt Protected		0.999			0.958		
Satd. Flow (prot)	0	2871	2628	0	2565	0	
Flt Permitted		0.942			0.958		
Satd. Flow (perm)	0	2706	2628	0	2492	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			244				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	82			82	9	3	
Confl. Bikes (#/hr)				18			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	29%	9%	10%	4%	16%	23%	
Adj. Flow (vph)	7	459	576	515	185	28	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	466	1091	0	213	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		58.0		21.0		30.0
Total Split (%)	9.2%		48.3%		17.5%		25%
Maximum Green (s)	5.0		52.0		14.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		80.5	72.0		15.0		
Actuated g/C Ratio		0.67	0.60		0.13		
v/c Ratio		0.26	0.65		0.66		
Control Delay (s/veh)		10.9	23.1		60.4		
Queue Delay		0.0	1.2		0.0		
Total Delay (s/veh)		10.9	24.3		60.4		
LOS		B	C		E		
Approach Delay (s/veh)		10.9	24.3		60.4		
Approach LOS		B	C		E		
Queue Length 50th (ft)		44	222		91		
Queue Length 95th (ft)		153	540		138		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1826	1674		352		
Starvation Cap Reductn		0	341		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.26	0.82		0.61		

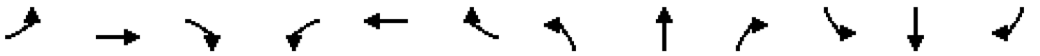
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 25.1		Intersection LOS: C	
Intersection Capacity Utilization 50.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 106: Summer Street & Pump House Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	429	83	2	901	123	98	40	3	82	42	55
Future Volume (vph)	66	429	83	2	901	123	98	40	3	82	42	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98			0.98			0.97	0.96
Frt		0.976			0.982			0.997				0.850
Flt Protected	0.950			0.950				0.966			0.968	
Satd. Flow (prot)	1604	2987	0	1685	3217	0	0	1673	0	0	1744	1236
Flt Permitted	0.165			0.063				0.664			0.732	
Satd. Flow (perm)	275	2987	0	110	3217	0	0	1130	0	0	1281	1193
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								1				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	85		43	43		85	17		22	22		17
Confl. Bikes (#/hr)						14			4			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	13%	12%	0%	5%	2%	8%	8%	67%	1%	14%	35%
Adj. Flow (vph)	72	466	90	2	979	134	107	43	3	89	46	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	556	0	2	1113	0	0	153	0	0	135	60
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

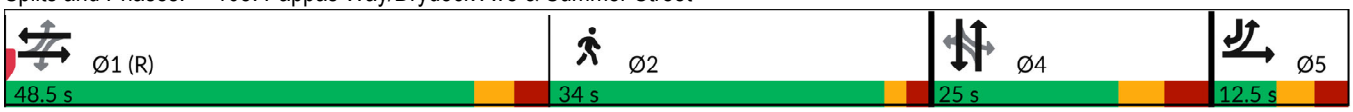


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			48.5	48.5		25.0	25.0		25.0	25.0	12.5
Total Split (%)	10.4%			40.4%	40.4%		20.8%	20.8%		20.8%	20.8%	10.4%
Maximum Green (s)	6.0			42.0	42.0		17.0	17.0		17.0	17.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	79.3	83.8		63.8	63.8			25.7			25.7	42.7
Actuated g/C Ratio	0.66	0.70		0.53	0.53			0.21			0.21	0.36
v/c Ratio	0.20	0.27		0.03	0.65			0.63			0.49	0.14
Control Delay (s/veh)	10.7	10.2		20.5	24.1			53.8			46.8	21.4
Queue Delay	0.0	0.0		0.0	0.1			52.6			0.0	0.2
Total Delay (s/veh)	10.7	10.2		20.5	24.2			106.4			46.8	21.6
LOS	B	B		C	C			F			D	C
Approach Delay (s/veh)		10.2			24.2			106.4			39.0	
Approach LOS		B			C			F			D	
Queue Length 50th (ft)	12	100		1	326			114			102	37
Queue Length 95th (ft)	m45	150		7	494			182			165	64
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	353	2086		58	1711			244			276	429
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	46			99			0	105
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.20	0.27		0.03	0.67			1.06			0.49	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 72 (60%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 27.4		Intersection LOS: C	
Intersection Capacity Utilization 61.4%		ICU Level of Service B	
Analysis Period (min) 15			

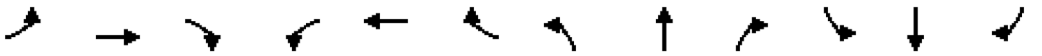
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street



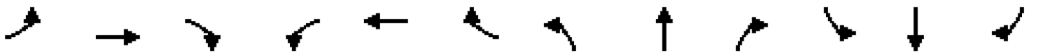
Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	78	30	15	102	340	30	574	10	113	281	37
Future Volume (vph)	30	78	30	15	102	340	30	574	10	113	281	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97		1.00	0.88		1.00	0.93
Frt		0.971				0.850			0.850			0.850
Flt Protected		0.989			0.994			0.998			0.986	
Satd. Flow (prot)	0	1670	0	0	1747	1546	0	1659	1005	0	1670	1406
Flt Permitted		0.904			0.952			0.897			0.101	
Satd. Flow (perm)	0	1520	0	0	1670	1505	0	1489	889	0	170	1307
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		14				362						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	16		11	11		16	41		52	52		41
Confl. Bikes (#/hr)									11			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	10%	0%	1%	1%	0%	3%	50%	9%	3%	11%
Adj. Flow (vph)	32	83	32	16	109	362	32	611	11	120	299	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	125	362	0	643	11	0	419	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	24.0	24.0		24.0	24.0	12.0	31.0	31.0	31.0	12.0		
Total Split (%)	26.7%	26.7%		26.7%	26.7%	13.3%	34.4%	34.4%	34.4%	13.3%		
Maximum Green (s)	18.0	18.0		18.0	18.0	7.0	25.5	25.5	25.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.0			14.0	24.0		27.5	27.5		36.1	39.6
Actuated g/C Ratio		0.17			0.17	0.29		0.33	0.33		0.43	0.47
v/c Ratio		0.56			0.45	0.52		1.32	0.04		1.87	0.06
Control Delay (s/veh)		37.2			36.7	5.3		185.6	21.6		428.8	13.8
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		37.2			36.7	5.3		185.6	21.6		428.8	13.8
LOS		D			D	A		F	C		F	B
Approach Delay (s/veh)		37.2			13.4			182.9			393.4	
Approach LOS		D			B			F			F	
Queue Length 50th (ft)		69			61	0		~451	5		~319	12
Queue Length 95th (ft)		130			112	56		#717	24		#543	34
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		372			397	692		487	291		224	614
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.40			0.31	0.52		1.32	0.04		1.87	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 84.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.87			
Intersection Signal Delay (s/veh): 178.6		Intersection LOS: F	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

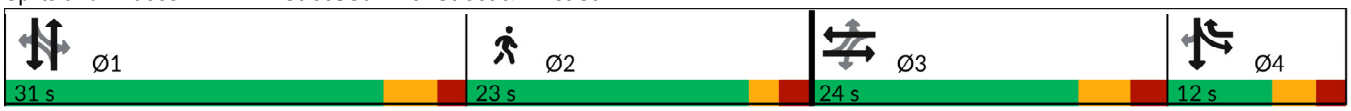
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

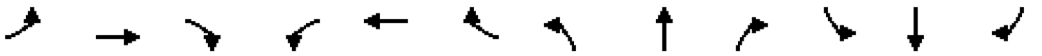
Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

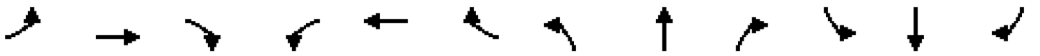
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St





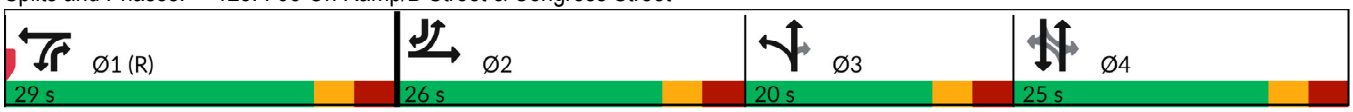
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	133	50	319	59	45	234	186	335	23	90	52
Future Volume (vph)	223	133	50	319	59	45	234	186	335	23	90	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.83	0.98	0.98	0.92		0.97		0.96		1.00	0.95
Frt			0.850		0.974				0.850			0.850
Flt Protected		0.970		0.950	0.971		0.950				0.990	
Satd. Flow (prot)	0	3056	1346	1289	2479	0	1630	1693	1511	0	2811	1351
Flt Permitted		0.970		0.950	0.971		0.677				0.857	
Satd. Flow (perm)	0	2552	1319	1258	2443	0	1124	1693	1444	0	2422	1285
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			229		22				344			98
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	139		26	26		139	24		20	20		24
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	5%	8%	7%	5%	9%	3%	1%	9%	9%	11%	4%
Adj. Flow (vph)	232	139	52	332	61	47	244	194	349	24	94	54
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	371	52	166	274	0	244	194	349	0	118	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		29.0	29.0		20.0		29.0	25.0	25.0	26.0
Total Split (%)	26.0%	26.0%		29.0%	29.0%		20.0%		29.0%	25.0%	25.0%	26.0%
Maximum Green (s)	20.0	20.0		23.0	23.0		14.0		23.0	19.0	19.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		18.9	100.0	37.2	37.2		27.9	31.9	69.1		12.4	31.3
Actuated g/C Ratio		0.19	1.00	0.37	0.37		0.28	0.32	0.69		0.12	0.31
v/c Ratio		0.64	0.04	0.35	0.29		0.62	0.36	0.31		0.39	0.11
Control Delay (s/veh)		42.6	0.1	27.1	22.7		34.7	27.8	1.3		43.9	1.0
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		42.6	0.1	27.1	22.7		34.7	27.8	1.3		43.9	1.0
LOS		D	A	C	C		C	C	A		D	A
Approach Delay (s/veh)		37.3			24.4			18.2			30.4	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)		120	0	87	63		126	95	1		40	0
Queue Length 95th (ft)		165	0	169	110		191	148	27		69	4
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		672	1319	479	936		399	680	1129		508	520
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.55	0.04	0.35	0.29		0.61	0.29	0.31		0.23	0.10

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 67 (67%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 25.3		Intersection LOS: C	
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



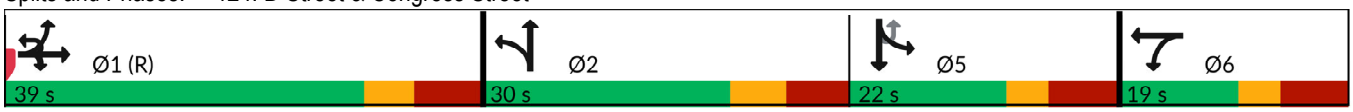
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	40	122	311	45	51	18	281	53	9	12	5
Future Volume (vph)	9	40	122	311	45	51	18	281	53	9	12	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150	0		0		0
Storage Lanes		0		1	0		1	2		0		0
Taper Length (ft)		0			0			0				0
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	0.97	1.00	1.00	0.95	0.95
Ped Bike Factor			0.92			0.93		0.76	0.98			
Frt			0.977	0.850		0.976			0.978			
Flt Protected			0.988			0.981		0.950				
Satd. Flow (prot)	0	0	2623	1206	0	2791	0	2821	1310	0	0	0
Flt Permitted			0.988			0.981		0.950				
Satd. Flow (perm)	0	0	2447	1206	0	2713	0	2148	1310	0	0	0
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			18	304		16			7			
Link Speed (mph)			30			30			30			
Link Distance (ft)			1049			279			493			
Travel Time (s)			23.8			6.3			11.2			
Confl. Peds. (#/hr)	50	86		29	29		86	50		33		33
Confl. Bikes (#/hr)									6	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92
Heavy Vehicles (%)	11%	8%	16%	6%	2%	8%	17%	8%	9%	11%	0%	20%
Parking (#/hr)									0			
Adj. Flow (vph)	10	43	133	338	49	55	20	305	58	10	13	5
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	220	304	0	124	0	305	68	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left
Median Width(ft)			10			10			22			
Link Offset(ft)			0			0			0			
Crosswalk Width(ft)			16			16			16			
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.36	1.19	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	15		9	9	15
Number of Detectors			1	1		1		1	1			
Detector Template												
Leading Detector (ft)			50	50		50		50	50			
Trailing Detector (ft)			0	0		0		0	0			
Detector 1 Position(ft)			0	0		0		0	0			
Detector 1 Size(ft)			50	50		50		50	50			
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Queue (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Delay (s)			0.0	0.0		0.0		0.0	0.0			
Turn Type	Split	Split	NA	Prot	Split	NA		Split	NA		Perm	Split
Protected Phases	1	1	1	1	6	6		2	2			5

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	175	11
Future Volume (vph)	175	11
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.98	
Frt	0.992	
Flt Protected	0.996	
Satd. Flow (prot)	2810	0
Flt Permitted	0.996	
Satd. Flow (perm)	2790	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	4	
Link Speed (mph)	30	
Link Distance (ft)	372	
Travel Time (s)	8.5	
Confl. Peds. (#/hr)		50
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	9%	18%
Parking (#/hr)		
Adj. Flow (vph)	190	12
Shared Lane Traffic (%)		
Lane Group Flow (vph)	220	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	80	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.19	1.19
Turning Speed (mph)		9
Number of Detectors	1	
Detector Template		
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	50	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Turn Type	NA	
Protected Phases	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Permitted Phases											5	
Detector Phase	1	1	1	1	6	6		2	2		5	5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0		8.0	8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5		21.0	21.0
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0		22.0	22.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%		20.0%	20.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	10.0	10.0		20.5	20.5		13.0	13.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5		3.5	3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0		5.5	5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0		-2.0	-2.0			
Total Lost Time (s)			7.5	7.5		7.0		7.5	7.5			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None		None	None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0		7.0	7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5		1.5	1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0		10	10
Act Effct Green (s)			38.3	38.3		10.9		18.1	18.1			
Actuated g/C Ratio			0.35	0.35		0.10		0.16	0.16			
v/c Ratio			0.24	0.49		0.43		0.66	0.31			
Control Delay (s/veh)			25.7	6.5		45.0		33.8	22.4			
Queue Delay			0.0	0.0		0.0		0.0	0.0			
Total Delay (s/veh)			25.7	6.5		45.0		33.8	22.4			
LOS			C	A		D		C	C			
Approach Delay (s/veh)			14.5			45.0			31.7			
Approach LOS			B			D			C			
Queue Length 50th (ft)			62	0		41		112	41			
Queue Length 95th (ft)			108	81		73		154	84			
Internal Link Dist (ft)			969			199			413			
Turn Bay Length (ft)				150								
Base Capacity (vph)			925	618		318		577	273			
Starvation Cap Reductn			0	0		0		0	0			
Spillback Cap Reductn			0	0		0		0	0			
Storage Cap Reductn			0	0		0		0	0			
Reduced v/c Ratio			0.24	0.49		0.39		0.53	0.25			

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 37 (34%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

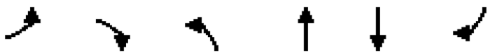
Splits and Phases: 124: D Street & Congress Street



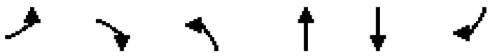


Lane Group	SBT	SBR
Permitted Phases		
Detector Phase	5	
Switch Phase		
Minimum Initial (s)	8.0	
Minimum Split (s)	21.0	
Total Split (s)	22.0	
Total Split (%)	20.0%	
Maximum Green (s)	13.0	
Yellow Time (s)	3.5	
All-Red Time (s)	5.5	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	7.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	1.5	
Pedestrian Calls (#/hr)	10	
Act Effct Green (s)	13.7	
Actuated g/C Ratio	0.12	
v/c Ratio	0.63	
Control Delay (s/veh)	52.9	
Queue Delay	0.0	
Total Delay (s/veh)	52.9	
LOS	D	
Approach Delay (s/veh)	52.9	
Approach LOS	D	
Queue Length 50th (ft)	82	
Queue Length 95th (ft)	126	
Internal Link Dist (ft)	292	
Turn Bay Length (ft)		
Base Capacity (vph)	386	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.57	

Intersection Summary



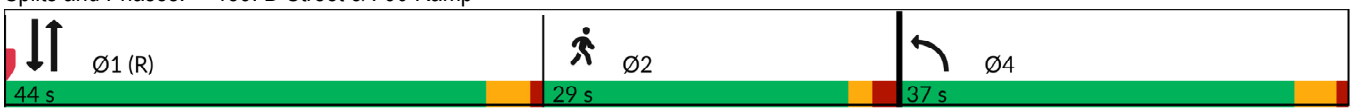
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	158	342	413	135	
Future Volume (vph)	0	0	158	342	413	135	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.97		0.98		
Frt					0.963		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1341	2908	2687	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1297	2908	2687	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					46		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			46			46	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	9%	8%	8%	2%	
Adj. Flow (vph)	0	0	166	360	435	142	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	166	360	577	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			20.1	55.9	55.9		
Actuated g/C Ratio			0.18	0.51	0.51		
v/c Ratio			0.68	0.24	0.42		
Control Delay (s/veh)			55.1	16.8	25.3		
Queue Delay			0.0	0.0	0.0		
Total Delay (s/veh)			55.1	16.8	25.3		
LOS			E	B	C		
Approach Delay (s/veh)				28.9	25.3		
Approach LOS				C	C		
Queue Length 50th (ft)			118	76	178		
Queue Length 95th (ft)			181	126	260		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			420	1478	1388		
Starvation Cap Reductn			0	0	0		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.40	0.24	0.42		

Intersection Summary	
Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 1:NBSB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 27.0	Intersection LOS: C
Intersection Capacity Utilization 34.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 159: D Street & I-90 Ramp



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	279	176	19	85	473	18	
Future Volume (vph)	279	176	19	85	473	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.994		
Flt Protected			0.950		0.954		
Satd. Flow (prot)	1670	1346	1504	1371	3131	0	
Flt Permitted			0.547		0.954		
Satd. Flow (perm)	1670	1346	866	1371	3131	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		183			5		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	10%	16%	16%	34%	4%	6%	
Adj. Flow (vph)	291	183	20	89	493	19	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	291	183	20	89	512	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		21.0		22.0
Total Split (s)	22.0		14.0		42.0		22.0
Total Split (%)	22.0%		14.0%		42.0%		22%
Maximum Green (s)	15.0		10.0		36.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	57.2	86.2	68.4	70.0	24.0		
Actuated g/C Ratio	0.57	0.86	0.68	0.70	0.24		
v/c Ratio	0.30	0.15	0.03	0.09	0.68		
Control Delay (s/veh)	14.2	0.6	5.9	6.0	38.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	14.2	0.6	5.9	6.0	38.6		
LOS	B	A	A	A	D		
Approach Delay (s/veh)	9.0			6.0	38.6		
Approach LOS	A			A	D		
Queue Length 50th (ft)	101	0	4	20	157		
Queue Length 95th (ft)	195	12	14	49	196		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	955	1299	679	958	1192		
Starvation Cap Reductn	0	0	0	0	47		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.30	0.14	0.03	0.09	0.45		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 26 (26%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 22.5		Intersection LOS: C	
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	161	52	61	300	87	0	0	0	46	118	14
Future Vol, veh/h	15	161	52	61	300	87	0	0	0	46	118	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	20	12	4	2	6	3	0	0	0	2	3	36
Mvmt Flow	16	175	57	66	326	95	0	0	0	50	128	15
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	11.4	15.8	11.3
HCM LOS	B	C	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	14%	26%
Vol Thru, %	71%	67%	66%
Vol Right, %	23%	19%	8%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	228	448	178
LT Vol	15	61	46
Through Vol	161	300	118
RT Vol	52	87	14
Lane Flow Rate	248	487	193
Geometry Grp	1	1	1
Degree of Util (X)	0.368	0.637	0.308
Departure Headway (Hd)	5.34	4.708	5.73
Convergence, Y/N	Yes	Yes	Yes
Cap	679	755	631
Service Time	3.34	2.806	3.742
HCM Lane V/C Ratio	0.365	0.645	0.306
HCM Control Delay, s/veh	11.4	15.8	11.3
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.7	4.6	1.3

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	217	0	0	255	92	100	26	4	112	0	28
Future Vol, veh/h	36	217	0	0	255	92	100	26	4	112	0	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	8	9	0	0	5	3	1	0	0	12	0	25
Mvmt Flow	40	238	0	0	280	101	110	29	4	123	0	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.8	14.5	11.2	11.5
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	77%	14%	0%	80%
Vol Thru, %	20%	86%	73%	0%
Vol Right, %	3%	0%	27%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	253	347	140
LT Vol	100	36	0	112
Through Vol	26	217	255	0
RT Vol	4	0	92	28
Lane Flow Rate	143	278	381	154
Geometry Grp	1	1	1	1
Degree of Util (X)	0.244	0.431	0.552	0.265
Departure Headway (Hd)	6.147	5.584	5.212	6.209
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	642	690	575
Service Time	4.213	3.636	3.259	4.275
HCM Lane V/C Ratio	0.246	0.433	0.552	0.268
HCM Control Delay, s/veh	11.2	12.8	14.5	11.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1	2.2	3.4	1.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	26	49	2	76	62	14	7	159	6
Future Vol, veh/h	0	0	0	26	49	2	76	62	14	7	159	6
Conflicting Peds, #/hr	0	0	0	5	0	12	26	0	10	10	0	26
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	5	17
Mvmt Flow	0	0	0	30	56	2	87	71	16	8	183	7

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	468	496	101	216	0	0	97	0	0
Stage 1	264	264	-	-	-	-	-	-	-
Stage 2	204	232	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	557	478	959	1366	-	-	1509	-	-
Stage 1	785	694	-	-	-	-	-	-	-
Stage 2	835	716	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	511	0	945	1366	-	-	1498	-	-
Mov Cap-2 Maneuver	511	0	-	-	-	-	-	-	-
Stage 1	727	0	-	-	-	-	-	-	-
Stage 2	827	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		3.91	0.3
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	868	-	-	-	73	-	-
HCM Lane V/C Ratio	0.064	-	-	-	0.005	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	129	47	303	38	32
Future Vol, veh/h	205	129	47	303	38	32
Conflicting Peds, #/hr	0	27	27	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	5	4	6	0	13
Mvmt Flow	241	152	55	356	45	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	420	0	813	345
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	469	-
Critical Hdwy	-	-	4.14	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.417
Pot Cap-1 Maneuver	-	-	1129	-	351	674
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1107	-	322	660
Mov Cap-2 Maneuver	-	-	-	-	322	-
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.13	15.63
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	421	-	-	242	-
HCM Lane V/C Ratio	0.196	-	-	0.05	-
HCM Ctrl Dly (s/v)	15.6	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	151	138	0
Future Vol, veh/h	0	0	0	151	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	6	17	0
Mvmt Flow	0	0	0	166	152	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	152	152	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	680	900	1442	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	680	900	1442	-	-	-
Mov Cap-2 Maneuver	680	-	-	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	0	0	381	68	45
Future Vol, veh/h	202	0	0	381	68	45
Conflicting Peds, #/hr	0	0	0	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	0	0	6	0	4
Mvmt Flow	215	0	0	405	72	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	622	216
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	407	-
Critical Hdwy	-	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	-	0	0	-	454	819
Stage 1	-	0	0	-	826	-
Stage 2	-	0	0	-	676	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	453	818
Mov Cap-2 Maneuver	-	-	-	-	453	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.55
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	453	818	-	-
HCM Lane V/C Ratio	0.16	0.058	-	-
HCM Ctrl Dly (s/v)	14.5	9.7	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	6	69	25	7	2	29	67	7	1	82	8
Future Vol, veh/h	29	6	69	25	7	2	29	67	7	1	82	8
Conflicting Peds, #/hr	0	0	7	7	0	0	4	0	10	10	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	24	17	7	4	29	0	3	6	29	0	4	38
Mvmt Flow	35	7	84	30	9	2	35	82	9	1	100	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	268	282	116	280	283	96	114	0	0	100	0	0
Stage 1	111	111	-	167	167	-	-	-	-	-	-	-
Stage 2	157	171	-	113	116	-	-	-	-	-	-	-
Critical Hdwy	7.34	6.67	6.27	7.14	6.79	6.2	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.716	4.153	3.363	3.536	4.261	3.3	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	642	602	923	668	583	966	1469	-	-	1505	-	-
Stage 1	843	775	-	831	712	-	-	-	-	-	-	-
Stage 2	796	730	-	887	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	612	580	914	576	562	959	1465	-	-	1493	-	-
Mov Cap-2 Maneuver	612	580	-	576	562	-	-	-	-	-	-	-
Stage 1	840	772	-	803	689	-	-	-	-	-	-	-
Stage 2	764	706	-	792	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.5	11.61	2.12	0.08
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	497	-	-	781	586	19	-	-
HCM Lane V/C Ratio	0.024	-	-	0.162	0.071	0.001	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10.5	11.6	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	20	89	39	36	9	48	8	35	2	7	2
Future Vol, veh/h	8	20	89	39	36	9	48	8	35	2	7	2
Conflicting Peds, #/hr	11	0	8	8	0	11	38	0	8	8	0	38
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	4	10	14	0	15	0	26	0	0	100
Mvmt Flow	9	23	102	45	41	10	55	9	40	2	8	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	203	220	55	180	201	48	48	0	0	57	0	0
Stage 1	52	52	-	148	148	-	-	-	-	-	-	-
Stage 2	151	168	-	32	53	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.2	6.64	6.2	4.25	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.59	4.126	3.3	2.335	-	-	2.2	-	-
Pot Cap-1 Maneuver	759	682	1006	765	675	1026	1479	-	-	1560	-	-
Stage 1	966	856	-	836	753	-	-	-	-	-	-	-
Stage 2	856	763	-	964	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	622	955	622	615	1011	1417	-	-	1550	-	-
Mov Cap-2 Maneuver	639	622	-	622	615	-	-	-	-	-	-	-
Stage 1	924	818	-	798	718	-	-	-	-	-	-	-
Stage 2	759	728	-	828	792	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.04	11.56	4.03	1.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	849	645	313	-	-
HCM Lane V/C Ratio	0.039	-	-	0.158	0.15	0.001	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	10	11.6	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	539	61	29	1017	16	35
Future Vol, veh/h	539	61	29	1017	16	35
Conflicting Peds, #/hr	0	67	67	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	11	13	17	7	19	29
Mvmt Flow	573	65	31	1082	17	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1276	387
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	603	-
Critical Hdwy	-	-	4.44	-	7.18	7.48
Critical Hdwy Stg 1	-	-	-	-	6.18	-
Critical Hdwy Stg 2	-	-	-	-	6.18	-
Follow-up Hdwy	-	-	2.37	-	3.69	3.59
Pot Cap-1 Maneuver	-	-	796	-	137	541
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	465	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	759	-	123	515
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.81	20.77
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	123	515	-	-	100	-
HCM Lane V/C Ratio	0.138	0.072	-	-	0.041	-
HCM Ctrl Dly (s/v)	38.8	12.5	-	-	9.9	0.5
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0.1	-

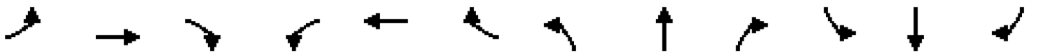
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	7	142	106	21
Future Vol, veh/h	5	3	7	142	106	21
Conflicting Peds, #/hr	0	6	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	60	33	14	9	11	19
Mvmt Flow	5	3	8	153	114	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	299	137	143	0	-	0
Stage 1	131	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	7	6.53	4.24	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	4.04	3.597	2.326	-	-	-
Pot Cap-1 Maneuver	586	835	1370	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	580	826	1363	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.59	0.36	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	85	-	653	-	-
HCM Lane V/C Ratio	0.006	-	0.013	-	-
HCM Ctrl Dly (s/v)	7.7	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	76	0	0	95	61	5	57	40	250	0	98
Future Volume (vph)	8	76	0	0	95	61	5	57	40	250	0	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98		1.00	0.87			
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.996		0.950		
Satd. Flow (prot)	1685	1722	0	0	1693	1660	0	1796	1516	1652	0	1507
Flt Permitted	0.688							0.996		0.098		
Satd. Flow (perm)	1217	1722	0	0	1693	1622	0	1788	1323	170	0	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						64			103			103
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	1		3	3		1	25		41	41		25
Confl. Bikes (#/hr)						1			5			14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	0%	1%	7%	0%	2%	3%	2%	0%	0%
Adj. Flow (vph)	8	80	0	0	100	64	5	60	42	263	0	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	80	0	0	100	64	0	65	42	263	0	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



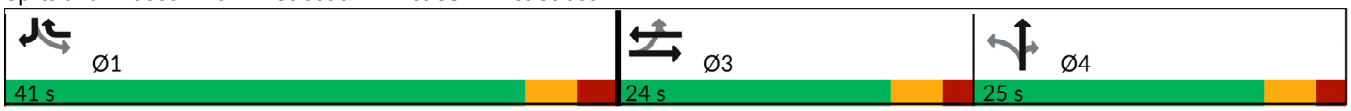
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	41.0	25.0	25.0	25.0	41.0		41.0
Total Split (%)	26.7%	26.7%			26.7%	45.6%	27.8%	27.8%	27.8%	45.6%		45.6%
Maximum Green (s)	18.5	18.5			18.5	35.0	19.5	19.5	19.5	35.0		35.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	11.3	11.3			11.3	50.4		10.4	10.4	41.9		41.9
Actuated g/C Ratio	0.17	0.17			0.17	0.75		0.15	0.15	0.62		0.62
v/c Ratio	0.04	0.28			0.35	0.05		0.23	0.14	2.48		0.11
Control Delay (s/veh)	25.0	28.4			29.9	0.9		29.1	1.0	715.6		2.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	25.0	28.4			29.9	0.9		29.1	1.0	715.6		2.6
LOS	C	C			C	A		C	A	F		A
Approach Delay (s/veh)		28.1			18.6			18.1			514.9	
Approach LOS		C			B			B			F	
Queue Length 50th (ft)	3	31			39	0		25	0	~163		0
Queue Length 95th (ft)	14	70			83	8		61	0	#327		22
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	374	529			520	1255		576	496	106		977
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.02	0.15			0.19	0.05		0.11	0.08	2.48		0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 2.48			
Intersection Signal Delay (s/veh): 270.2		Intersection LOS: F	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

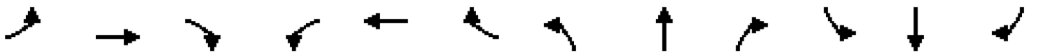
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: D Street & W First St/W First Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	145	259	1	12	1	54	70	0	59	91	37
Future Volume (vph)	52	145	259	1	12	1	54	70	0	59	91	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.98		1.00						0.93	
Frt			0.850		0.991						0.973	
Flt Protected		0.987			0.997			0.979			0.984	
Satd. Flow (prot)	0	1755	1531	0	2061	0	0	1783	0	0	1717	0
Flt Permitted		0.931			0.969			0.564			0.861	
Satd. Flow (perm)	0	1652	1499	0	2002	0	0	1027	0	0	1427	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			285		1							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			546			286			2036	
Travel Time (s)		29.1			12.4			6.5			46.3	
Confl. Peds. (#/hr)	3		3	3		3	19		46	46		19
Confl. Bikes (#/hr)			2						4			13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	3%	2%	0%	0%	0%	6%	3%	0%	0%	1%	0%
Adj. Flow (vph)	57	159	285	1	13	1	59	77	0	65	100	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	216	285	0	15	0	0	136	0	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		24.0	20.0	20.0		24.0	24.0		27.0	27.0	
Total Split (%)	21.0%		24.0%	20.0%	20.0%		24.0%	24.0%		27.0%	27.0%	
Maximum Green (s)	15.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		25.2	35.2		10.0			20.0			20.5	
Actuated g/C Ratio		0.25	0.35		0.10			0.20			0.21	
v/c Ratio		0.50	0.40		0.07			0.66			0.71	
Control Delay (s/veh)		32.7	4.1		40.1			54.2			46.6	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		32.7	4.1		40.1			54.2			46.6	
LOS		C	A		D			D			D	
Approach Delay (s/veh)		16.4			40.1			54.2			46.6	
Approach LOS		B			D			D			D	
Queue Length 50th (ft)		111	0		8			83			126	
Queue Length 95th (ft)		179	50		28			#168			188	
Internal Link Dist (ft)		1200			466			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		556	718		321			205			353	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.39	0.40		0.05			0.66			0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 30.1		Intersection LOS: C	
Intersection Capacity Utilization 45.3%		ICU Level of Service A	
Analysis Period (min) 15			

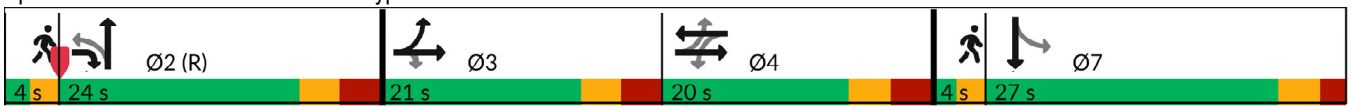
95th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

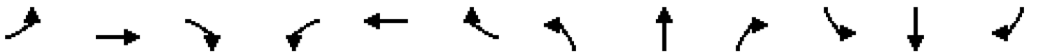
Queue shown is maximum after two cycles.

Splits and Phases: 64: D Street & Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	64	46	44	19	90	52	249	126	255	305	254
Future Volume (vph)	118	64	46	44	19	90	52	249	126	255	305	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99		0.97			0.98	1.00		
Frt		0.937				0.850			0.850		0.932	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1636	1585	0	1685	1773	1561	0	1784	1487	1728	1727	0
Flt Permitted	0.950			0.950				0.814		0.308		
Satd. Flow (perm)	1636	1585	0	1670	1773	1516	0	1466	1450	559	1727	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						145			273		37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)			2	2					2	2		
Confl. Bikes (#/hr)			3			4						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	6%	0%	0%	0%	0%	2%	2%	5%	1%	3%	2%
Adj. Flow (vph)	130	70	51	48	21	99	57	274	138	280	335	279
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	121	0	48	21	99	0	331	138	280	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	15.9	15.9		10.9	10.9	44.2		40.1	40.1	76.4	77.4	
Actuated g/C Ratio	0.13	0.13		0.09	0.09	0.37		0.33	0.33	0.64	0.65	
v/c Ratio	0.60	0.58		0.32	0.13	0.15		0.68	0.21	0.42	0.54	
Control Delay (s/veh)	60.1	59.2		56.4	51.5	1.5		43.8	0.7	13.8	15.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	60.1	59.2		56.4	51.5	1.5		43.8	0.7	13.8	15.5	
LOS	E	E		E	D	A		D	A	B	B	
Approach Delay (s/veh)		59.6			23.4			31.1			15.0	
Approach LOS		E			C			C			B	
Queue Length 50th (ft)	99	94		36	15	0		220	0	96	251	
Queue Length 95th (ft)	158	152		74	40	11		#400	0	175	438	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	299	290		171	181	661		490	666	661	1127	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.43	0.42		0.28	0.12	0.15		0.68	0.21	0.42	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 26.3		Intersection LOS: C	
Intersection Capacity Utilization 74.2%		ICU Level of Service D	
Analysis Period (min) 15			

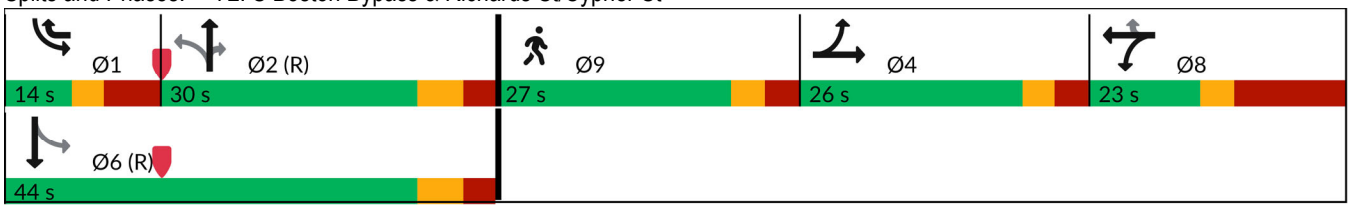
95th percentile volume exceeds capacity, queue may be longer.

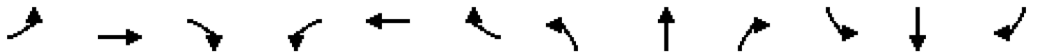
Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

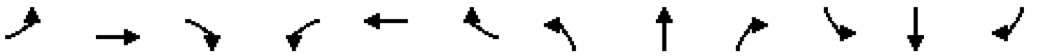
Queue shown is maximum after two cycles.

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	4	9	0	64	3	122	23	163	193	2
Future Volume (vph)	4	2	4	9	0	64	3	122	23	163	193	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98	0.87		0.89	0.96		0.96		0.85	1.00	
Frt			0.850			0.850		0.977			0.999	
Flt Protected		0.968			0.950			0.999		0.950		
Satd. Flow (prot)	0	1839	1615	0	1685	1406	0	3135	0	1636	1725	0
Flt Permitted		0.867			0.754			0.954		0.650		
Satd. Flow (perm)	0	1617	1406	0	1189	1351	0	2986	0	946	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			70		25			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	16		38	38		16	67		58	58		67
Confl. Bikes (#/hr)									5			14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%	0%	1%	4%	3%	2%	50%
Adj. Flow (vph)	4	2	4	10	0	70	3	133	25	177	210	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	4	0	10	70	0	161	0	177	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

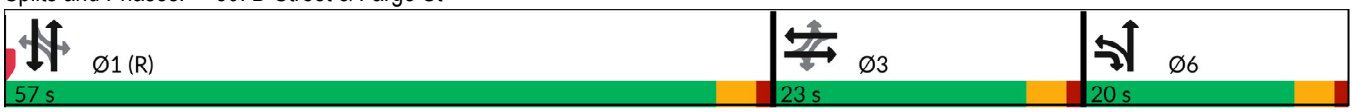


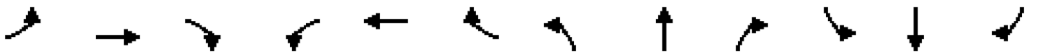
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	23.0	23.0	20.0	23.0	23.0	23.0	20.0			57.0	57.0	
Total Split (%)	23.0%	23.0%	20.0%	23.0%	23.0%	23.0%	20.0%			57.0%	57.0%	
Maximum Green (s)	19.0	19.0	16.0	19.0	19.0	19.0	16.0			53.0	53.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.2	19.6		9.2	9.2		86.8		74.8	74.8	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.04	0.01		0.09	0.37		0.06		0.25	0.16	
Control Delay (s/veh)		40.7	6.8		42.3	16.1		2.8		5.7	4.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.6	
Total Delay (s/veh)		40.7	6.8		42.3	16.1		2.8		5.7	5.1	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		27.1			19.4			2.8			5.4	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)		4	0		6	0		14		31	35	
Queue Length 95th (ft)		16	5		22	44		m29		68	67	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		339	405		249	339		2681		707	1290	
Starvation Cap Reductn		0	0		0	0		0		0	754	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.02	0.01		0.04	0.21		0.06		0.25	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 56 (56%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 6.8		Intersection LOS: A	
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

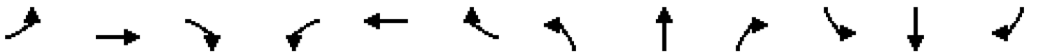
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	401	124	17	157	157	54	123	11	313	219	95
Future Volume (vph)	111	401	124	17	157	157	54	123	11	313	219	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.93	0.96			0.93		0.95	0.99		0.94	0.96	
Frt		0.965			0.929			0.988			0.966	
Flt Protected	0.950				0.998		0.950	0.998		0.950	0.988	
Satd. Flow (prot)	1501	2785	0	0	2541	0	1327	2827	0	1435	2658	0
Flt Permitted	0.509				0.910		0.950	0.998		0.950	0.988	
Satd. Flow (perm)	745	2785	0	0	2310	0	1256	2821	0	1352	2620	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		36						6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	84		104	104		84	64		44	44		64
Confl. Bikes (#/hr)			7			4			2			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	5%	0%	10%	4%	4%	3%	18%	3%	1%	1%
Parking (#/hr)			0						0			
Adj. Flow (vph)	121	436	135	18	171	171	59	134	12	340	238	103
Shared Lane Traffic (%)							10%			33%		
Lane Group Flow (vph)	121	571	0	0	360	0	53	152	0	228	453	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	

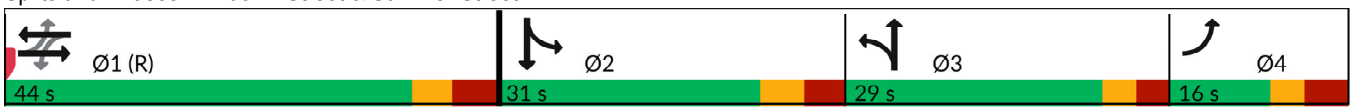


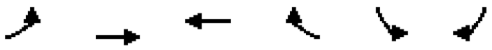
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	61.9	50.8			50.8		14.4	14.4		24.3	24.3	
Actuated g/C Ratio	0.52	0.42			0.42		0.12	0.12		0.20	0.20	
v/c Ratio	0.27	0.48			0.37		0.34	0.44		0.79	0.84	
Control Delay (s/veh)	16.2	26.3			32.7		52.3	50.1		65.1	61.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.2	0.0	
Total Delay (s/veh)	16.2	26.3			32.7		52.3	50.1		65.2	61.1	
LOS	B	C			C		D	D		E	E	
Approach Delay (s/veh)		24.5			32.7			50.6			62.5	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)	43	158			98		43	60		187	186	
Queue Length 95th (ft)	93	251			168		82	88		#318	#266	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	455	1199			977		276	593		304	564	
Starvation Cap Reductn	0	0			0		0	0		2	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.27	0.48			0.37		0.19	0.26		0.75	0.80	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 42.2		Intersection LOS: D	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			

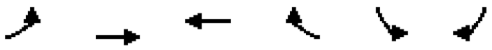
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: D Street & Summer Street





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	16	709	301	197	418	28	
Future Volume (vph)	16	709	301	197	418	28	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.97		0.98		
Frt			0.941		0.991		
Flt Protected		0.999			0.955		
Satd. Flow (prot)	0	3011	2728	0	2996	0	
Flt Permitted		0.941			0.955		
Satd. Flow (perm)	0	2835	2728	0	2933	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			139				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	79			79	11	4	
Confl. Bikes (#/hr)				4			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	13%	4%	6%	3%	0%	18%	
Adj. Flow (vph)	17	754	320	210	445	30	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	771	530	0	475	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0

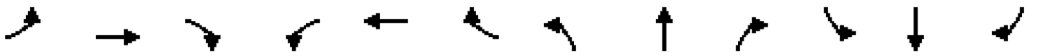


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		45.0		34.0		30.0
Total Split (%)	9.2%		37.5%		28.3%		25%
Maximum Green (s)	5.0		39.0		27.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		70.6	59.0		24.9		
Actuated g/C Ratio		0.59	0.49		0.21		
v/c Ratio		0.46	0.38		0.76		
Control Delay (s/veh)		18.4	29.1		53.1		
Queue Delay		0.0	0.0		0.2		
Total Delay (s/veh)		18.4	29.1		53.2		
LOS		B	C		D		
Approach Delay (s/veh)		18.4	29.1		53.2		
Approach LOS		B	C		D		
Queue Length 50th (ft)		7	129		179		
Queue Length 95th (ft)		272	243		228		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1683	1411		736		
Starvation Cap Reductn		0	0		22		
Spillback Cap Reductn		77	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.48	0.38		0.67		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 30.9		Intersection LOS: C	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

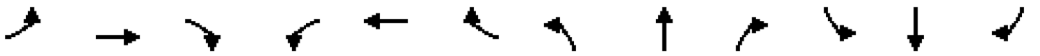
Splits and Phases: 106: Summer Street & Pump House Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	922	180	5	362	45	31	42	7	179	137	120
Future Volume (vph)	28	922	180	5	362	45	31	42	7	179	137	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.98		0.99	0.99			0.99			0.98	0.96
Frt		0.976			0.984			0.989				0.850
Flt Protected	0.950			0.950				0.981			0.972	
Satd. Flow (prot)	1574	3274	0	1404	3298	0	0	1732	0	0	1823	1545
Flt Permitted	0.419			0.098				0.787			0.790	
Satd. Flow (perm)	662	3274	0	143	3298	0	0	1381	0	0	1447	1480
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	75		82	82		75	24		18	18		24
Confl. Bikes (#/hr)			12						1			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	20%	3%	0%	6%	2%	29%	0%	3%	8%
Adj. Flow (vph)	29	971	189	5	381	47	33	44	7	188	144	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1160	0	5	428	0	0	84	0	0	332	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

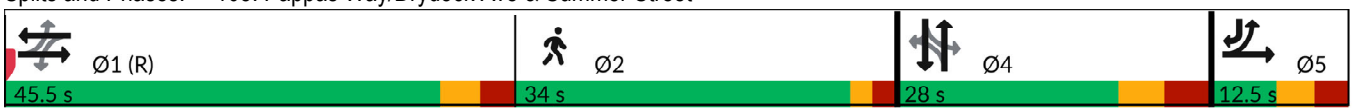


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			45.5	45.5		28.0	28.0		28.0	28.0	12.5
Total Split (%)	10.4%			37.9%	37.9%		23.3%	23.3%		23.3%	23.3%	10.4%
Maximum Green (s)	6.0			39.0	39.0		20.0	20.0		20.0	20.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	61.3	65.8		41.0	41.0			43.7			43.7	65.5
Actuated g/C Ratio	0.51	0.55		0.34	0.34			0.36			0.36	0.55
v/c Ratio	0.06	0.65		0.10	0.38			0.17			0.63	0.15
Control Delay (s/veh)	14.9	25.4		33.6	31.1			28.1			39.6	12.1
Queue Delay	0.0	1.8		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	14.9	27.2		33.6	31.1			28.1			39.6	12.1
LOS	B	C		C	C			C			D	B
Approach Delay (s/veh)		26.9			31.1			28.1			32.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	12	262		3	134			45			226	45
Queue Length 95th (ft)	m25	496		16	181			87			343	77
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	492	1795		48	1126			504			527	818
Starvation Cap Reductn	0	444		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.06	0.86		0.10	0.38			0.17			0.63	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 57 (48%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 28.9		Intersection LOS: C	
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street

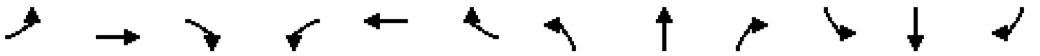


Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	89	36	14	44	95	18	269	17	257	723	125
Future Volume (vph)	20	89	36	14	44	95	18	269	17	257	723	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.98	0.96		1.00	0.88		0.99	0.89
Frt		0.966				0.850			0.850			0.850
Flt Protected		0.993			0.988			0.997			0.987	
Satd. Flow (prot)	0	1729	0	0	1752	1446	0	1705	1507	0	1737	1501
Flt Permitted		0.951			0.868			0.455			0.673	
Satd. Flow (perm)	0	1647	0	0	1513	1388	0	777	1332	0	1169	1342
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		13				99						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	26		41	41		26	82		83	83		82
Confl. Bikes (#/hr)			1									9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	0%	0%	0%	0%	8%	0%	0%	0%	0%	1%	4%
Adj. Flow (vph)	21	93	38	15	46	99	19	280	18	268	753	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	152	0	0	61	99	0	299	18	0	1021	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	25.0	25.0		25.0	25.0	12.0	50.0	50.0	50.0	12.0		
Total Split (%)	22.7%	22.7%		22.7%	22.7%	10.9%	45.5%	45.5%	45.5%	10.9%		
Maximum Green (s)	19.0	19.0		19.0	19.0	7.0	44.5	44.5	44.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.2			15.2	25.2		46.6	46.6		55.1	58.6
Actuated g/C Ratio		0.15			0.15	0.24		0.45	0.45		0.53	0.56
v/c Ratio		0.61			0.28	0.24		0.86	0.03		1.54	0.17
Control Delay (s/veh)		48.6			42.5	7.2		52.8	17.9		273.0	12.6
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		48.6			42.5	7.2		52.8	17.9		273.0	12.6
LOS		D			D	A		D	B		F	B
Approach Delay (s/veh)		48.6			20.6			50.8			243.6	
Approach LOS		D			C			D			F	
Queue Length 50th (ft)		88			37	0		174	7		~966	41
Queue Length 95th (ft)		153			76	41		#371	22		#1300	83
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		342			304	415		346	594		663	753
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.44			0.20	0.24		0.86	0.03		1.54	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 104.3			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.54			
Intersection Signal Delay (s/veh): 172.6		Intersection LOS: F	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

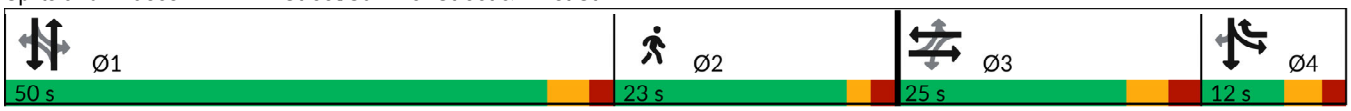
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

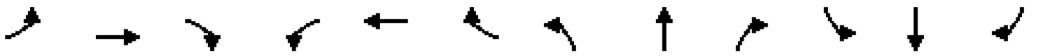
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	170	129	295	106	49	235	131	404	31	199	126
Future Volume (vph)	93	170	129	295	106	49	235	131	404	31	199	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.88	0.98	0.96	0.90		0.96		0.91		0.99	0.94
Frt			0.850		0.976				0.850			0.850
Flt Protected		0.983		0.950	0.976		0.950				0.993	
Satd. Flow (prot)	0	3069	1439	1353	2480	0	1630	1693	1569	0	3080	1378
Flt Permitted		0.983		0.950	0.976		0.511				0.893	
Satd. Flow (perm)	0	2711	1406	1303	2436	0	846	1693	1435	0	2747	1291
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			229		21				242			127
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	205		34	34		205	33		45	45		33
Confl. Bikes (#/hr)			5			1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	3%	1%	2%	8%	12%	3%	1%	5%	3%	1%	2%
Adj. Flow (vph)	98	179	136	311	112	52	247	138	425	33	209	133
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	277	136	155	320	0	247	138	425	0	242	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



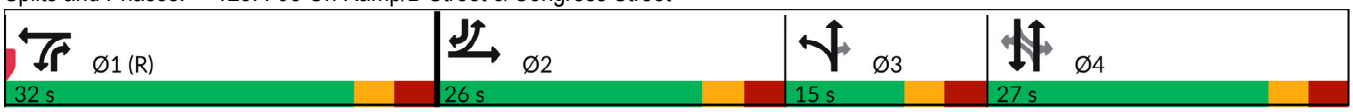
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		32.0	32.0		15.0		32.0	27.0	27.0	26.0
Total Split (%)	26.0%	26.0%		32.0%	32.0%		15.0%		32.0%	27.0%	27.0%	26.0%
Maximum Green (s)	20.0	20.0		26.0	26.0		9.0		26.0	21.0	21.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		16.4	100.0	40.6	40.6		27.0	31.0	71.6		16.0	32.4
Actuated g/C Ratio		0.16	1.00	0.41	0.41		0.27	0.31	0.72		0.16	0.32
v/c Ratio		0.55	0.10	0.28	0.31		0.79	0.26	0.37		0.55	0.26
Control Delay (s/veh)		42.2	0.1	23.9	21.4		47.4	26.6	2.9		43.1	3.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		42.2	0.1	23.9	21.4		47.4	26.6	2.9		43.1	3.6
LOS		D	A	C	C		D	C	A		D	A
Approach Delay (s/veh)		28.3			22.2			20.5			29.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		88	0	72	73		131	66	27		76	2
Queue Length 95th (ft)		124	0	148	130		#204	109	68		111	24
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		675	1406	548	1018		314	643	1150		631	588
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.41	0.10	0.28	0.31		0.79	0.21	0.37		0.38	0.23

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 24.0		Intersection LOS: C	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	10	84	112	440	53	81	20	4	175	81	15	3
Future Volume (vph)	10	84	112	440	53	81	20	4	175	81	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150		0		0	
Storage Lanes		0		1	0		1		2		0	
Taper Length (ft)		0			0				0			
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	1.00	0.97	1.00	1.00	0.95
Ped Bike Factor			0.89			0.95				0.98		
Frt			0.974	0.850		0.981				0.977		
Flt Protected			0.982			0.983			0.950			
Satd. Flow (prot)	0	0	2747	1241	0	2993	0	0	2960	1407	0	0
Flt Permitted			0.982			0.983			0.205			
Satd. Flow (perm)	0	0	2481	1241	0	2924	0	0	639	1407	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			21	262		11				7		
Link Speed (mph)			30			30				30		
Link Distance (ft)			1049			279				493		
Travel Time (s)			23.8			6.3				11.2		
Confl. Peds. (#/hr)	57	64		29	29		64	29	57		50	64
Confl. Bikes (#/hr)				1						6	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	13%	3%	2%	2%	0%	0%	3%	1%	0%	0%
Parking (#/hr)										0		
Adj. Flow (vph)	10	86	114	449	54	83	20	4	179	83	15	3
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	255	404	0	157	0	0	183	98	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)			10			10				22		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.19	1.36	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	9	15		9	9
Number of Detectors			1	1		1			1	1		
Detector Template												
Leading Detector (ft)			50	50		50			50	50		
Trailing Detector (ft)			0	0		0			0	0		
Detector 1 Position(ft)			0	0		0			0	0		
Detector 1 Size(ft)			50	50		50			50	50		
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Queue (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Delay (s)			0.0	0.0		0.0			0.0	0.0		
Turn Type	Split	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm
Protected Phases	1	1	1	1	6	6			2	2		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	4	480	17
Future Volume (vph)	4	480	17
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	11	11	11
Storage Length (ft)	0		0
Storage Lanes	0		0
Taper Length (ft)	0		
Lane Util. Factor	0.95	0.95	0.95
Ped Bike Factor		0.99	
Frt		0.995	
Flt Protected		0.999	
Satd. Flow (prot)	0	3092	0
Flt Permitted		0.999	
Satd. Flow (perm)	0	3080	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		3	
Link Speed (mph)		30	
Link Distance (ft)		372	
Travel Time (s)		8.5	
Confl. Peds. (#/hr)	50		57
Confl. Bikes (#/hr)			6
Peak Hour Factor	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	6%
Parking (#/hr)			
Adj. Flow (vph)	4	490	17
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	514	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		80	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.19	1.19	1.19
Turning Speed (mph)	15		9
Number of Detectors		1	
Detector Template			
Leading Detector (ft)		50	
Trailing Detector (ft)		0	
Detector 1 Position(ft)		0	
Detector 1 Size(ft)		50	
Detector 1 Type		Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)		0.0	
Detector 1 Queue (s)		0.0	
Detector 1 Delay (s)		0.0	
Turn Type	Split	NA	
Protected Phases	5	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Permitted Phases								2				5
Detector Phase	1	1	1	1	6	6		2	2	2		5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0		8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5	25.5		21.0
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%
Maximum Green (s)	28.5	28.5	28.5	28.5	8.0	8.0		17.5	17.5	17.5		19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5	4.5		3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0	5.0		5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0		
Total Lost Time (s)			7.5	7.5		7.0			7.5	7.5		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None	None		None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0	7.0		7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5	4.5		1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0	0		10
Act Effct Green (s)			30.8	30.8		10.0			19.5	19.5		
Actuated g/C Ratio			0.28	0.28		0.09			0.18	0.18		
v/c Ratio			0.33	0.75		0.56			1.62	0.38		
Control Delay (s/veh)			30.2	22.6		52.6			355.4	67.3		
Queue Delay			0.0	0.0		0.0			0.0	0.0		
Total Delay (s/veh)			30.2	22.6		52.6			355.4	67.3		
LOS			C	C		D			F	E		
Approach Delay (s/veh)			25.5			52.6				254.9		
Approach LOS			C			D				F		
Queue Length 50th (ft)			79	103		53			~86	57		
Queue Length 95th (ft)			121	#253		90			#179	130		
Internal Link Dist (ft)			969			199				413		
Turn Bay Length (ft)				150								
Base Capacity (vph)			784	536		282			113	255		
Starvation Cap Reductn			0	0		0			0	0		
Spillback Cap Reductn			0	0		0			0	0		
Storage Cap Reductn			0	0		0			0	0		
Reduced v/c Ratio			0.33	0.75		0.56			1.62	0.38		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.62			
Intersection Signal Delay (s/veh): 79.5		Intersection LOS: E	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

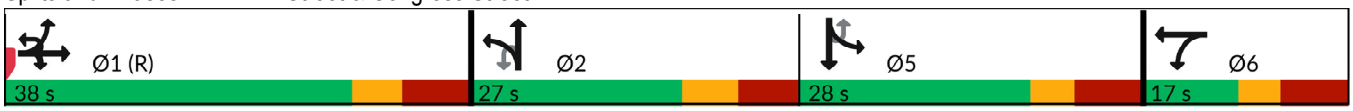


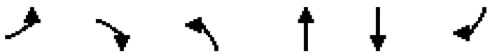
Lane Group	SBL	SBT	SBR
Permitted Phases			
Detector Phase	5	5	
Switch Phase			
Minimum Initial (s)	8.0	8.0	
Minimum Split (s)	21.0	21.0	
Total Split (s)	28.0	28.0	
Total Split (%)	25.5%	25.5%	
Maximum Green (s)	19.0	19.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	5.5	5.5	
Lost Time Adjust (s)		-2.0	
Total Lost Time (s)		7.0	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	2.0	
Recall Mode	None	None	
Walk Time (s)	7.0	7.0	
Flash Don't Walk (s)	1.5	1.5	
Pedestrian Calls (#/hr)	10	10	
Act Effct Green (s)		20.7	
Actuated g/C Ratio		0.19	
v/c Ratio		0.88	
Control Delay (s/veh)		60.9	
Queue Delay		0.0	
Total Delay (s/veh)		60.9	
LOS		E	
Approach Delay (s/veh)		60.9	
Approach LOS		E	
Queue Length 50th (ft)		185	
Queue Length 95th (ft)		#277	
Internal Link Dist (ft)		292	
Turn Bay Length (ft)			
Base Capacity (vph)		592	
Starvation Cap Reductn		0	
Spillback Cap Reductn		0	
Storage Cap Reductn		0	
Reduced v/c Ratio		0.87	

Intersection Summary

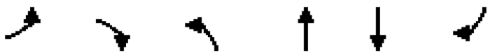
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: D Street & Congress Street





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	125	267	627	363	
Future Volume (vph)	0	0	125	267	627	363	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.97		0.96		
Frt					0.945		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1419	3049	2704	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1383	3049	2704	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					121		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			69			69	
Confl. Bikes (#/hr)						13	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	3%	3%	2%	0%	
Adj. Flow (vph)	0	0	132	281	660	382	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	132	281	1042	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							

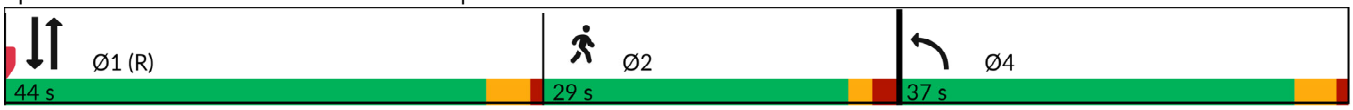


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			16.7	59.3	59.3		
Actuated g/C Ratio			0.15	0.54	0.54		
v/c Ratio			0.61	0.17	0.69		
Control Delay (s/veh)			55.1	14.1	14.1		
Queue Delay			0.0	0.0	0.4		
Total Delay (s/veh)			55.1	14.1	14.5		
LOS			E	B	B		
Approach Delay (s/veh)				27.2	14.5		
Approach LOS				C	B		
Queue Length 50th (ft)			90	51	143		
Queue Length 95th (ft)			146	87	m194		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			445	1644	1514		
Starvation Cap Reductn			0	0	137		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.30	0.17	0.76		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 94 (85%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 18.1		Intersection LOS: B	
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 159: D Street & I-90 Ramp



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	119	408	42	256	175	42	
Future Volume (vph)	119	408	42	256	175	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.971		
Flt Protected			0.950		0.961		
Satd. Flow (prot)	1701	1561	1631	1685	3107	0	
Flt Permitted			0.675		0.961		
Satd. Flow (perm)	1701	1561	1159	1685	3107	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		439			33		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	8%	0%	7%	9%	3%	2%	
Adj. Flow (vph)	128	439	45	275	188	45	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	128	439	45	275	233	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		22.0		22.0
Total Split (s)	22.0		17.0		39.0		22.0
Total Split (%)	22.0%		17.0%		39.0%		22%
Maximum Green (s)	15.0		13.0		33.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	59.6	80.9	74.7	76.7	17.3		
Actuated g/C Ratio	0.60	0.81	0.75	0.77	0.17		
v/c Ratio	0.13	0.33	0.05	0.21	0.41		
Control Delay (s/veh)	9.8	0.9	3.0	3.7	33.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	9.8	0.9	3.0	3.7	33.8		
LOS	A	A	A	A	C		
Approach Delay (s/veh)	2.9			3.6	33.8		
Approach LOS	A			A	C		
Queue Length 50th (ft)	35	0	6	42	60		
Queue Length 95th (ft)	71	18	15	71	96		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	1013	1541	955	1292	1108		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.13	0.28	0.05	0.21	0.21		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 9.6		Intersection LOS: A	
Intersection Capacity Utilization 37.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	211	135	71	146	20	0	0	0	72	321	8
Future Vol, veh/h	13	211	135	71	146	20	0	0	0	72	321	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	3	1	0	3	10	0	0	0	3	0	25
Mvmt Flow	14	224	144	76	155	21	0	0	0	77	341	9
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	15.5	12.9	19.7
HCM LOS	C	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	30%	18%
Vol Thru, %	59%	62%	80%
Vol Right, %	38%	8%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	359	237	401
LT Vol	13	71	72
Through Vol	211	146	321
RT Vol	135	20	8
Lane Flow Rate	382	252	427
Geometry Grp	1	1	1
Degree of Util (X)	0.573	0.407	0.673
Departure Headway (Hd)	5.401	5.812	5.68
Convergence, Y/N	Yes	Yes	Yes
Cap	665	615	636
Service Time	3.461	3.878	3.731
HCM Lane V/C Ratio	0.574	0.41	0.671
HCM Control Delay, s/veh	15.5	12.9	19.7
HCM Lane LOS	C	B	C
HCM 95th-tile Q	3.6	2	5.1

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Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	312	0	0	128	34	47	14	16	286	0	39
Future Vol, veh/h	28	312	0	0	128	34	47	14	16	286	0	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	2	0	0	1	3	2	7	0	0	0	5
Mvmt Flow	30	339	0	0	139	37	51	15	17	311	0	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.3	11.1	10.3	15.9
HCM LOS	C	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	61%	8%	0%	88%
Vol Thru, %	18%	92%	79%	0%
Vol Right, %	21%	0%	21%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	340	162	325
LT Vol	47	28	0	286
Through Vol	14	312	128	0
RT Vol	16	0	34	39
Lane Flow Rate	84	370	176	353
Geometry Grp	1	1	1	1
Degree of Util (X)	0.144	0.58	0.281	0.561
Departure Headway (Hd)	6.188	5.646	5.748	5.718
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	636	622	629
Service Time	4.273	3.706	3.821	3.777
HCM Lane V/C Ratio	0.146	0.582	0.283	0.561
HCM Control Delay, s/veh	10.3	16.3	11.1	15.9
HCM Lane LOS	B	C	B	C
HCM 95th-tile Q	0.5	3.7	1.1	3.5

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Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	11	17	2	48	38	16	20	287	22
Future Vol, veh/h	0	0	0	11	17	2	48	38	16	20	287	22
Conflicting Peds, #/hr	0	0	0	10	0	8	33	0	8	8	0	33
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	4	3	0	0	0	0
Mvmt Flow	0	0	0	12	18	2	52	41	17	22	312	24

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	528	575	66	369	0	0	67	0	0
Stage 1	162	162	-	-	-	-	-	-	-
Stage 2	365	412	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	515	431	1003	1179	-	-	1548	-	-
Stage 1	872	768	-	-	-	-	-	-	-
Stage 2	706	598	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	476	0	992	1179	-	-	1539	-	-
Mov Cap-2 Maneuver	476	0	-	-	-	-	-	-	-
Stage 1	827	0	-	-	-	-	-	-	-
Stage 2	689	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		3.86	0.45
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	800	-	-	-	108	-	-
HCM Lane V/C Ratio	0.044	-	-	-	0.014	-	-
HCM Ctrl Dly (s/v)	8.2	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	294	36	141	16	25
Future Vol, veh/h	315	294	36	141	16	25
Conflicting Peds, #/hr	0	30	30	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	1	0	4
Mvmt Flow	339	316	39	152	17	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	685	0	756	529
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.1	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	918	-	379	546
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	899	-	354	534
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.87	13.97
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	-	-	366	-
HCM Lane V/C Ratio	0.099	-	-	0.043	-
HCM Ctrl Dly (s/v)	14	-	-	9.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	73	327	0
Future Vol, veh/h	0	0	0	73	327	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	8	1	0
Mvmt Flow	0	0	0	81	363	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	364	364	0	-	0
Stage 1	364	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	574	685	1205	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	574	685	1205	-	-	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1205	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	289	0	0	215	26	58
Future Vol, veh/h	289	0	0	215	26	58
Conflicting Peds, #/hr	0	6	6	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	0	0	2	8	0
Mvmt Flow	325	0	0	242	29	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	567	326
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	-	0	0	-	475	720
Stage 1	-	0	0	-	719	-
Stage 2	-	0	0	-	784	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	474	720
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	474	720	-	-
HCM Lane V/C Ratio	0.062	0.091	-	-
HCM Ctrl Dly (s/v)	13.1	10.5	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	0.2	0.3	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	6	186	5	0	1	9	16	8	3	217	7
Future Vol, veh/h	15	6	186	5	0	1	9	16	8	3	217	7
Conflicting Peds, #/hr	1	0	5	5	0	1	5	0	9	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	13	17	1	20	0	0	0	6	13	0	1	0
Mvmt Flow	16	7	204	5	0	1	10	18	9	3	238	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	292	309	252	304	309	32	251	0	0	35	0	0
Stage 1	254	254	-	51	51	-	-	-	-	-	-	-
Stage 2	38	55	-	253	258	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.67	6.21	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.153	3.309	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	639	581	789	614	609	1048	1326	-	-	1589	-	-
Stage 1	727	670	-	919	857	-	-	-	-	-	-	-
Stage 2	949	820	-	713	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	629	569	782	439	597	1040	1321	-	-	1578	-	-
Mov Cap-2 Maneuver	629	569	-	439	597	-	-	-	-	-	-	-
Stage 1	722	666	-	905	844	-	-	-	-	-	-	-
Stage 2	940	808	-	518	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.74	12.51	2.11	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	460	-	-	761	486	24	-	-
HCM Lane V/C Ratio	0.007	-	-	0.299	0.014	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	11.7	12.5	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	9	182	33	11	0	28	3	15	2	1	10
Future Vol, veh/h	2	9	182	33	11	0	28	3	15	2	1	10
Conflicting Peds, #/hr	7	0	1	1	0	7	11	0	5	5	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	18	0	4	33	7	0	0	30
Mvmt Flow	2	10	196	35	12	0	30	3	16	2	1	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	98	106	18	88	104	23	23	0	0	24	0	0
Stage 1	22	22	-	77	77	-	-	-	-	-	-	-
Stage 2	76	85	-	11	27	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.23	7.1	6.68	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.327	3.5	4.162	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	889	788	1057	903	757	1059	1579	-	-	1603	-	-
Stage 1	1002	881	-	938	801	-	-	-	-	-	-	-
Stage 2	938	829	-	1015	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	841	759	1043	705	730	1049	1560	-	-	1597	-	-
Mov Cap-2 Maneuver	841	759	-	705	730	-	-	-	-	-	-	-
Stage 1	988	869	-	916	782	-	-	-	-	-	-	-
Stage 2	900	809	-	813	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	10.42	4.48	1.12
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	939	-	-	1023	711	234	-	-
HCM Lane V/C Ratio	0.019	-	-	0.203	0.067	0.001	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	9.4	10.4	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1106	23	18	492	7	22
Future Vol, veh/h	1106	23	18	492	7	22
Conflicting Peds, #/hr	0	84	84	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	13	0	4	14	0
Mvmt Flow	1164	24	19	518	7	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1272	0	1557	680
Stage 1	-	-	-	-	1260	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	-	-	4.1	-	7.08	6.9
Critical Hdwy Stg 1	-	-	-	-	6.08	-
Critical Hdwy Stg 2	-	-	-	-	6.08	-
Follow-up Hdwy	-	-	2.2	-	3.64	3.3
Pot Cap-1 Maneuver	-	-	553	-	92	398
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	520	-	83	374
Mov Cap-2 Maneuver	-	-	-	-	83	-
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.9	24.28
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	83	374	-	-	127	-
HCM Lane V/C Ratio	0.089	0.062	-	-	0.036	-
HCM Ctrl Dly (s/v)	52.7	15.3	-	-	12.2	0.5
HCM Lane LOS	F	C	-	-	B	A
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

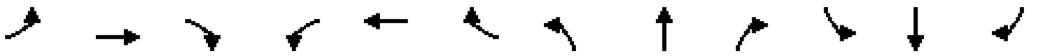
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	7	3	71	315	6
Future Vol, veh/h	8	7	3	71	315	6
Conflicting Peds, #/hr	0	5	5	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	14	33	7	2	33
Mvmt Flow	9	8	3	77	342	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	435	357	355	0	-	0
Stage 1	352	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.43	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.497	-	-	-
Pot Cap-1 Maneuver	582	661	1051	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	577	655	1046	-	-	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.05	0.34	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	73	-	611	-	-
HCM Lane V/C Ratio	0.003	-	0.027	-	-
HCM Ctrl Dly (s/v)	8.5	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	69	0	0	166	173	4	261	31	142	0	37
Future Volume (vph)	9	69	0	0	166	173	4	261	31	142	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97		1.00	0.87	0.96		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1348	1673	0	0	1613	1645	0	1835	1334	1504	0	1277
Flt Permitted	0.562							0.999		0.225		
Satd. Flow (perm)	794	1673	0	0	1613	1602	0	1834	1165	344	0	1277
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						188			132			125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	3		7	7		3	18		51	51		18
Confl. Bikes (#/hr)									9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	6%	0%	0%	6%	8%	0%	0%	17%	12%	0%	18%
Adj. Flow (vph)	10	75	0	0	180	188	4	284	34	154	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	75	0	0	180	188	0	288	34	154	0	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



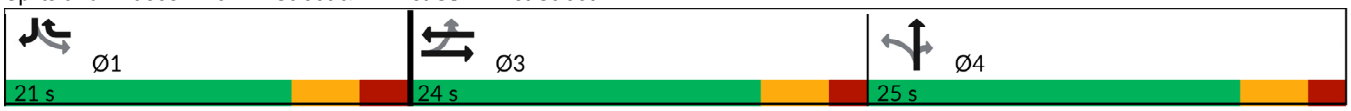
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	21.0	25.0	25.0	25.0	21.0		21.0
Total Split (%)	34.3%	34.3%			34.3%	30.0%	35.7%	35.7%	35.7%	30.0%		30.0%
Maximum Green (s)	18.5	18.5			18.5	15.0	19.5	19.5	19.5	15.0		15.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	13.5	13.5			13.5	27.9		15.3	15.3	18.0		18.0
Actuated g/C Ratio	0.25	0.25			0.25	0.52		0.28	0.28	0.33		0.33
v/c Ratio	0.05	0.18			0.45	0.20		0.56	0.08	1.35		0.08
Control Delay (s/veh)	18.7	19.5			23.5	1.8		22.7	0.4	235.5		0.3
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	18.7	19.5			23.5	1.8		22.7	0.4	235.5		0.3
LOS	B	B			C	A		C	A	F		A
Approach Delay (s/veh)		19.4			12.4			20.3			187.0	
Approach LOS		B			B			C			F	
Queue Length 50th (ft)	3	21			55	0		82	0	~80		0
Queue Length 95th (ft)	17	56			120	24		165	0	#225		0
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	317	669			645	932		769	565	114		507
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.03	0.11			0.28	0.20		0.37	0.06	1.35		0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 54.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay (s/veh): 50.6		Intersection LOS: D	
Intersection Capacity Utilization 47.4%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

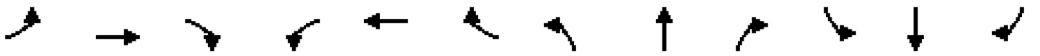
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: D Street & W First St/W First Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	82	123	0	35	10	143	300	0	23	40	35
Future Volume (vph)	80	82	123	0	35	10	143	300	0	23	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		0.99						0.95	
Frt			0.850		0.969						0.952	
Flt Protected		0.976						0.984			0.988	
Satd. Flow (prot)	0	1614	1446	0	1776	0	0	1775	0	0	1411	0
Flt Permitted		0.833						0.503			0.827	
Satd. Flow (perm)	0	1367	1421	0	1776	0	0	907	0	0	1149	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			131		11							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			543			286			2036	
Travel Time (s)		29.1			12.3			6.5			46.3	
Confl. Peds. (#/hr)	5		2	2		5	13		54	54		13
Confl. Bikes (#/hr)									8			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	15%	8%	0%	17%	0%	6%	5%	0%	4%	28%	21%
Adj. Flow (vph)	84	86	129	0	37	11	151	316	0	24	42	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	129	0	48	0	0	467	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom		NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		27.0	21.0	21.0		27.0	27.0		23.0	23.0	
Total Split (%)	21.0%		27.0%	21.0%	21.0%		27.0%	27.0%		23.0%	23.0%	
Maximum Green (s)	15.0		21.0	15.0	15.0		21.0	21.0		18.0	18.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		24.7	37.4		10.3			23.0			15.7	
Actuated g/C Ratio		0.25	0.37		0.10			0.23			0.16	
v/c Ratio		0.46	0.21		0.25			2.25			0.57	
Control Delay (s/veh)		32.1	3.8		37.1			598.0			48.4	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		32.1	3.8		37.1			598.0			48.4	
LOS		C	A		D			F			D	
Approach Delay (s/veh)		19.9			37.1			598.0			48.4	
Approach LOS		B			D			F			D	
Queue Length 50th (ft)		96	0		25			~503			77	
Queue Length 95th (ft)		154	34		64			#704			137	
Internal Link Dist (ft)		1200			463			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		497	618		311			208			233	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.34	0.21		0.15			2.25			0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 19 (19%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.25			
Intersection Signal Delay (s/veh): 318.4		Intersection LOS: F	
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

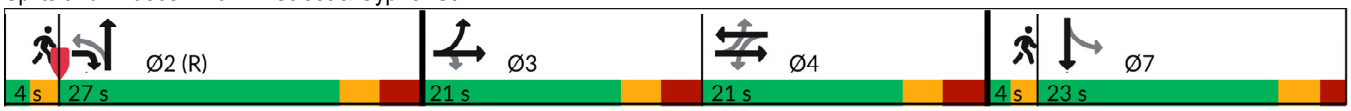
Intersection Summary

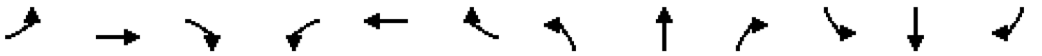
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

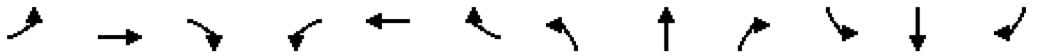
Splits and Phases: 64: D Street & Cypher St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	45	27	57	66	236	187	251	168	109	115	330
Future Volume (vph)	80	45	27	57	66	236	187	251	168	109	115	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.96		0.96			0.98	1.00		
Frt		0.943				0.850			0.850		0.889	
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	1546	1567	0	1296	1673	1501	0	1639	1369	1662	1556	0
Flt Permitted	0.950			0.950				0.660		0.338		
Satd. Flow (perm)	1530	1567	0	1249	1673	1440	0	1105	1339	591	1556	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						243			273		127	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)	4		8	8		4			1	1		
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	3%	8%	30%	6%	4%	4%	14%	14%	5%	13%	7%
Adj. Flow (vph)	82	46	28	59	68	243	193	259	173	112	119	340
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	74	0	59	68	243	0	452	173	112	459	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	13.2	13.2		12.5	12.5	25.1		62.0	62.0	77.6	78.6	
Actuated g/C Ratio	0.11	0.11		0.10	0.10	0.21		0.52	0.52	0.65	0.66	
v/c Ratio	0.49	0.43		0.44	0.39	0.49		0.79	0.21	0.24	0.43	
Control Delay (s/veh)	59.3	57.0		60.1	56.2	7.0		39.8	0.6	11.8	10.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	59.3	57.0		60.1	56.2	7.0		39.8	0.6	11.8	10.2	
LOS	E	E		E	E	A		D	A	B	B	
Approach Delay (s/veh)		58.2			24.5			28.9			10.5	
Approach LOS		E			C			C			B	
Queue Length 50th (ft)	65	56		54	53	0		323	0	34	131	
Queue Length 95th (ft)	117	103		106	98	56		#666	0	75	265	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	283	287		143	185	498		570	823	476	1062	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.29	0.26		0.41	0.37	0.49		0.79	0.21	0.24	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 24.5		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			

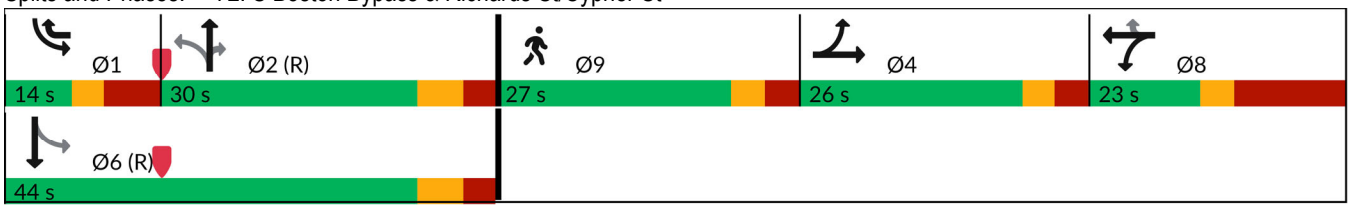
95th percentile volume exceeds capacity, queue may be longer.

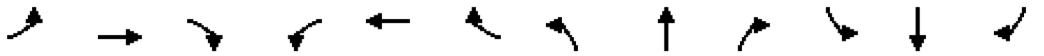
Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

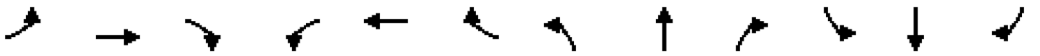
Queue shown is maximum after two cycles.

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	5	11	7	50	13	354	43	100	128	8
Future Volume (vph)	12	1	5	11	7	50	13	354	43	100	128	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.96	0.88		0.94	0.94		0.97		0.91	0.98	
Frt			0.850			0.850		0.984			0.991	
Flt Protected		0.956			0.971			0.998		0.950		
Satd. Flow (prot)	0	1569	1615	0	1722	1201	0	3056	0	1620	1428	0
Flt Permitted		0.791			0.856			0.949		0.496		
Satd. Flow (perm)	0	1242	1424	0	1429	1130	0	2889	0	773	1428	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			55		25			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	27		34	34		27	73		53	53		73
Confl. Bikes (#/hr)									10			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	17%	0%	0%	0%	0%	30%	0%	7%	0%	4%	20%	38%
Adj. Flow (vph)	13	1	5	12	8	54	14	381	46	108	138	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	5	0	20	54	0	441	0	108	147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

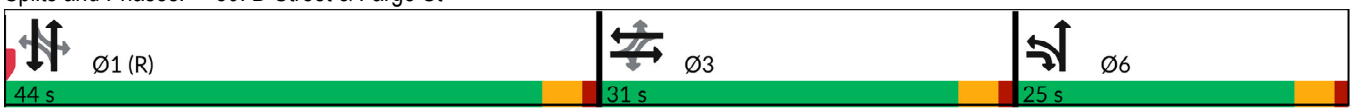


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	31.0	31.0	25.0	31.0	31.0	31.0	25.0			44.0	44.0	
Total Split (%)	31.0%	31.0%	25.0%	31.0%	31.0%	31.0%	25.0%			44.0%	44.0%	
Maximum Green (s)	27.0	27.0	21.0	27.0	27.0	27.0	21.0			40.0	40.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.4	19.9		9.4	9.4		86.6		74.5	74.5	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.12	0.02		0.15	0.35		0.17		0.19	0.14	
Control Delay (s/veh)		42.8	8.4		43.3	17.6		2.1		5.6	4.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		42.8	8.4		43.3	17.6		2.1		5.6	4.6	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		33.8			24.6			2.1			5.0	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8	0		12	0		24		19	27	
Queue Length 95th (ft)		27	6		34	44		m10		45	57	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		360	489		414	366		2601		576	1065	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.04	0.01		0.05	0.15		0.17		0.19	0.14	

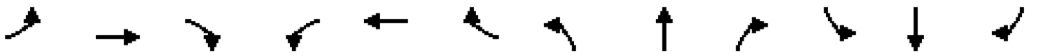
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 42 (42%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay (s/veh): 5.9		Intersection LOS: A	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	411	59	14	376	324	89	307	20	259	166	95
Future Volume (vph)	65	411	59	14	376	324	89	307	20	259	166	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.97	0.98			0.94		0.94	0.99		0.96	0.96	
Frt		0.981			0.932			0.991			0.959	
Flt Protected	0.950				0.999		0.950	0.999		0.950	0.988	
Satd. Flow (prot)	1472	2756	0	0	2487	0	1254	2664	0	1356	2471	0
Flt Permitted	0.252				0.940		0.950	0.999		0.950	0.988	
Satd. Flow (perm)	380	2756	0	0	2337	0	1173	2660	0	1297	2444	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		14						5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	75		106	106		75	68		43	43		68
Confl. Bikes (#/hr)			4			12			4			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	9%	11%	43%	12%	7%	10%	11%	15%	9%	10%	3%
Parking (#/hr)			0						0			
Adj. Flow (vph)	67	424	61	14	388	334	92	316	21	267	171	98
Shared Lane Traffic (%)							10%			33%		
Lane Group Flow (vph)	67	485	0	0	736	0	83	346	0	179	357	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	

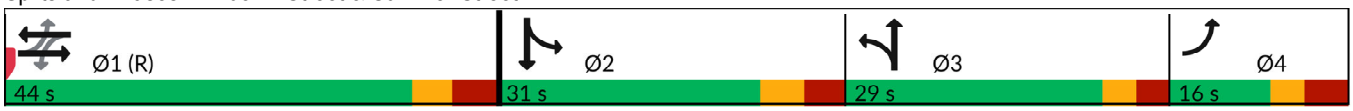


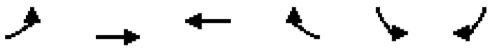
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	56.8	45.9			45.9		21.2	21.2		22.6	22.6	
Actuated g/C Ratio	0.47	0.38			0.38		0.18	0.18		0.19	0.19	
v/c Ratio	0.25	0.46			0.82		0.38	0.73		0.70	0.77	
Control Delay (s/veh)	19.4	30.0			24.8		47.8	55.3		60.5	57.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	19.4	30.0			24.8		47.8	55.3		60.5	57.6	
LOS	B	C			C		D	E		E	E	
Approach Delay (s/veh)		28.7			24.8			53.8			58.6	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)	27	154			126		68	150		152	155	
Queue Length 95th (ft)	58	228			#460		124	204		243	213	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	282	1063			894		261	558		288	525	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.24	0.46			0.82		0.32	0.62		0.62	0.68	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 18 (15%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 39.3		Intersection LOS: D	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

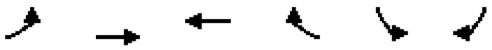
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: D Street & Summer Street





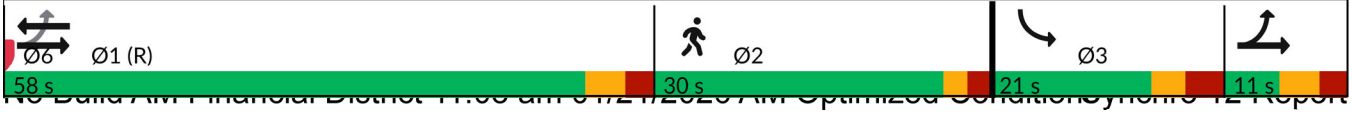
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	7	683	671	484	174	26	
Future Volume (vph)	7	683	671	484	174	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.97		0.97		
Frt			0.937		0.980		
Flt Protected					0.958		
Satd. Flow (prot)	0	2876	2653	0	2565	0	
Flt Permitted		0.944			0.958		
Satd. Flow (perm)	0	2715	2653	0	2492	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			198				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	82			82	9	3	
Confl. Bikes (#/hr)				18			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	29%	9%	10%	4%	16%	23%	
Adj. Flow (vph)	7	727	714	515	185	28	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	734	1229	0	213	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		58.0		21.0		30.0
Total Split (%)	9.2%		48.3%		17.5%		25%
Maximum Green (s)	5.0		52.0		14.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		80.5	72.0		15.0		
Actuated g/C Ratio		0.67	0.60		0.13		
v/c Ratio		0.40	0.74		0.66		
Control Delay (s/veh)		11.3	33.5		60.4		
Queue Delay		0.0	49.0		0.0		
Total Delay (s/veh)		11.3	82.5		60.4		
LOS		B	F		E		
Approach Delay (s/veh)		11.3	82.5		60.4		
Approach LOS		B	F		E		
Queue Length 50th (ft)		70	518		91		
Queue Length 95th (ft)		215	m530		138		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1831	1670		352		
Starvation Cap Reductn		0	566		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.40	1.11		0.61		

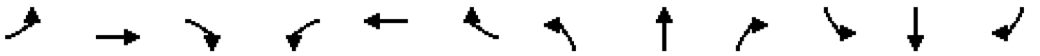
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 56.3		Intersection LOS: E	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 106: Summer Street & Pump House Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	624	83	2	998	151	98	77	3	91	56	72
Future Volume (vph)	124	624	83	2	998	151	98	77	3	91	56	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98			0.99			0.98	0.96
Frt		0.982			0.980			0.998				0.850
Flt Protected	0.950			0.950				0.973			0.970	
Satd. Flow (prot)	1604	3013	0	1685	3207	0	0	1691	0	0	1739	1236
Flt Permitted	0.089			0.089				0.704			0.699	
Satd. Flow (perm)	149	3013	0	156	3207	0	0	1208	0	0	1224	1193
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								1				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	85		43	43		85	17		22	22		17
Confl. Bikes (#/hr)						14			4			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	13%	12%	0%	5%	2%	8%	8%	67%	1%	14%	35%
Adj. Flow (vph)	135	678	90	2	1085	164	107	84	3	99	61	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	768	0	2	1249	0	0	194	0	0	160	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			48.5	48.5		25.0	25.0		25.0	25.0	12.5
Total Split (%)	10.4%			40.4%	40.4%		20.8%	20.8%		20.8%	20.8%	10.4%
Maximum Green (s)	6.0			42.0	42.0		17.0	17.0		17.0	17.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	66.9	71.4		44.7	44.7			38.1			38.1	61.8
Actuated g/C Ratio	0.56	0.60		0.37	0.37			0.32			0.32	0.52
v/c Ratio	0.38	0.43		0.03	1.05			0.51			0.41	0.13
Control Delay (s/veh)	20.1	15.8		26.5	76.3			39.5			37.0	13.6
Queue Delay	0.0	0.4		0.0	21.2			83.4			0.0	0.4
Total Delay (s/veh)	20.1	16.3		26.5	97.5			122.9			37.0	14.0
LOS	C	B		C	F			F			D	B
Approach Delay (s/veh)		16.8			97.4			122.9			29.4	
Approach LOS		B			F			F			C	
Queue Length 50th (ft)	38	187		1	~564			133			111	36
Queue Length 95th (ft)	109	347		7	#725			214			185	67
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	352	1792		58	1193			384			388	622
Starvation Cap Reductn	0	524		0	0			0			0	0
Spillback Cap Reductn	0	0		0	71			305			0	302
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.38	0.61		0.03	1.11			2.46			0.41	0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 72 (60%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay (s/veh): 64.9		Intersection LOS: E	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

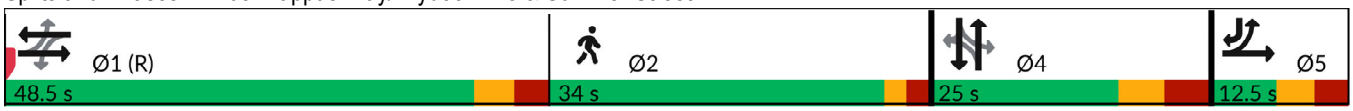
Intersection Summary

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

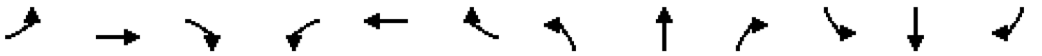
Queue shown is maximum after two cycles.

Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	89	30	33	114	340	30	629	33	113	314	49
Future Volume (vph)	48	89	30	33	114	340	30	629	33	113	314	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97		1.00	0.88		1.00	0.93
Frt		0.976				0.850			0.850			0.850
Flt Protected		0.986			0.989			0.998			0.987	
Satd. Flow (prot)	0	1678	0	0	1740	1546	0	1659	1005	0	1674	1406
Flt Permitted		0.779			0.863			0.820			0.097	
Satd. Flow (perm)	0	1320	0	0	1513	1505	0	1362	889	0	164	1307
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				362						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	16		11	11		16	41		52	52		41
Confl. Bikes (#/hr)									11			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	10%	0%	1%	1%	0%	3%	50%	9%	3%	11%
Adj. Flow (vph)	51	95	32	35	121	362	32	669	35	120	334	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	156	362	0	701	35	0	454	52
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	24.0	24.0		24.0	24.0	12.0	31.0	31.0	31.0	12.0		
Total Split (%)	26.7%	26.7%		26.7%	26.7%	13.3%	34.4%	34.4%	34.4%	13.3%		
Maximum Green (s)	18.0	18.0		18.0	18.0	7.0	25.5	25.5	25.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.6			15.6	25.6		27.6	27.6		36.1	39.6
Actuated g/C Ratio		0.18			0.18	0.30		0.32	0.32		0.42	0.46
v/c Ratio		0.72			0.57	0.51		1.60	0.12		2.07	0.09
Control Delay (s/veh)		47.4			40.3	5.1		306.7	23.5		520.2	14.7
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.4			40.3	5.1		306.7	23.5		520.2	14.7
LOS		D			D	A		F	C		F	B
Approach Delay (s/veh)		47.4			15.7			293.2			468.3	
Approach LOS		D			B			F			F	
Queue Length 50th (ft)		91			78	0		~565	19		~378	17
Queue Length 95th (ft)		165			139	56		#820	53		#596	42
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		317			353	707		438	285		219	603
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.56			0.44	0.51		1.60	0.12		2.07	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 85.7			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.07			
Intersection Signal Delay (s/veh): 242.2		Intersection LOS: F	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

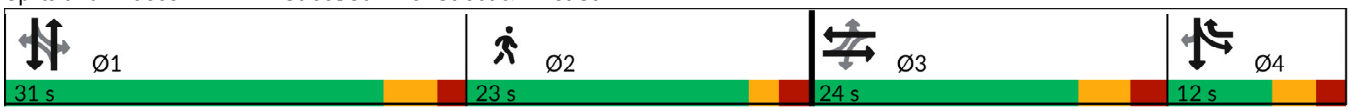
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

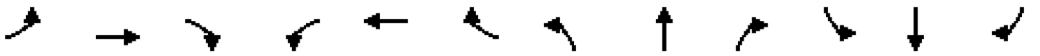
Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

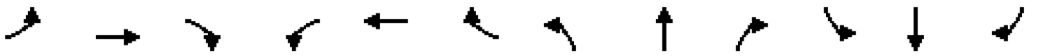
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	247	62	351	243	51	361	284	378	50	121	56
Future Volume (vph)	241	247	62	351	243	51	361	284	378	50	121	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.90	0.98	0.98	0.95		0.97		0.96		0.99	0.95
Frt			0.850		0.984				0.850			0.850
Flt Protected		0.976		0.950	0.982		0.950				0.986	
Satd. Flow (prot)	0	3063	1346	1289	2619	0	1630	1693	1511	0	2805	1351
Flt Permitted		0.976		0.950	0.982		0.613				0.777	
Satd. Flow (perm)	0	2767	1319	1263	2599	0	1021	1693	1444	0	2197	1285
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			229		12				167			98
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	139		26	26		139	24		20	20		24
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	5%	8%	7%	5%	9%	3%	1%	9%	9%	11%	4%
Adj. Flow (vph)	251	257	65	366	253	53	376	296	394	52	126	58
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	508	65	183	489	0	376	296	394	0	178	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



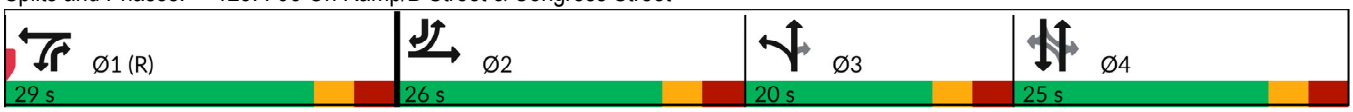
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		29.0	29.0		20.0		29.0	25.0	25.0	26.0
Total Split (%)	26.0%	26.0%		29.0%	29.0%		20.0%		29.0%	25.0%	25.0%	26.0%
Maximum Green (s)	20.0	20.0		23.0	23.0		14.0		23.0	19.0	19.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		21.1	100.0	31.5	31.5		31.4	35.4	66.9		15.4	36.5
Actuated g/C Ratio		0.21	1.00	0.32	0.32		0.31	0.35	0.67		0.15	0.37
v/c Ratio		0.79	0.05	0.45	0.59		0.90	0.49	0.38		0.53	0.11
Control Delay (s/veh)		46.8	0.1	33.5	32.7		54.0	27.9	4.4		44.0	0.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		46.8	0.1	33.5	32.7		54.0	27.9	4.4		44.0	0.9
LOS		D	A	C	C		D	C	A		D	A
Approach Delay (s/veh)		41.5			32.9			28.4			33.4	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)		166	0	108	146		204	148	48		60	0
Queue Length 95th (ft)		228	0	202	224		#318	208	89		93	4
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		673	1319	405	832		418	694	1042		461	556
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.75	0.05	0.45	0.59		0.90	0.43	0.38		0.39	0.10

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 67 (67%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 33.0		Intersection LOS: C	
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	41	173	452	45	113	18	439	90	9	12	5
Future Volume (vph)	9	41	173	452	45	113	18	439	90	9	12	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150	0		0		0
Storage Lanes		0		1	0		1	2		0		0
Taper Length (ft)		0			0			0				0
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	0.97	1.00	1.00	0.95	0.95
Ped Bike Factor			0.94			0.96		0.78	0.99			
Frt			0.975	0.850		0.984			0.986			
Flt Protected			0.991			0.987		0.950				
Satd. Flow (prot)	0	0	2616	1206	0	2863	0	2821	1330	0	0	0
Flt Permitted			0.991			0.987		0.950				
Satd. Flow (perm)	0	0	2491	1206	0	2817	0	2205	1330	0	0	0
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			20	442		9			4			
Link Speed (mph)			30			30			30			
Link Distance (ft)			1049			279			493			
Travel Time (s)			23.8			6.3			11.2			
Confl. Peds. (#/hr)	50	86		29	29		86	50		33		33
Confl. Bikes (#/hr)									6	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92
Heavy Vehicles (%)	11%	8%	16%	6%	2%	8%	17%	8%	9%	11%	0%	20%
Parking (#/hr)									0			
Adj. Flow (vph)	10	45	188	491	49	123	20	477	98	10	13	5
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	292	442	0	192	0	477	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left
Median Width(ft)			10			10			22			
Link Offset(ft)			0			0			0			
Crosswalk Width(ft)			16			16			16			
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.36	1.19	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	15		9	9	15
Number of Detectors			1	1		1		1	1			
Detector Template												
Leading Detector (ft)			50	50		50		50	50			
Trailing Detector (ft)			0	0		0		0	0			
Detector 1 Position(ft)			0	0		0		0	0			
Detector 1 Size(ft)			50	50		50		50	50			
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Queue (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Delay (s)			0.0	0.0		0.0		0.0	0.0			
Turn Type	Split	Split	NA	Prot	Split	NA		Split	NA		Perm	Split
Protected Phases	1	1	1	1	6	6		2	2			5

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	231	13
Future Volume (vph)	231	13
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.98	
Frt	0.993	
Flt Protected	0.997	
Satd. Flow (prot)	2818	0
Flt Permitted	0.997	
Satd. Flow (perm)	2803	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	4	
Link Speed (mph)	30	
Link Distance (ft)	372	
Travel Time (s)	8.5	
Confl. Peds. (#/hr)		50
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	9%	18%
Parking (#/hr)		
Adj. Flow (vph)	251	14
Shared Lane Traffic (%)		
Lane Group Flow (vph)	283	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	80	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.19	1.19
Turning Speed (mph)		9
Number of Detectors	1	
Detector Template		
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	50	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Turn Type	NA	
Protected Phases	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Permitted Phases											5	
Detector Phase	1	1	1	1	6	6		2	2		5	5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0		8.0	8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5		21.0	21.0
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0		22.0	22.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%		20.0%	20.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	10.0	10.0		20.5	20.5		13.0	13.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5		3.5	3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0		5.5	5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0		-2.0	-2.0			
Total Lost Time (s)			7.5	7.5		7.0		7.5	7.5			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None		None	None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0		7.0	7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5		1.5	1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0		10	10
Act Effct Green (s)			33.1	33.1		11.6		21.8	21.8			
Actuated g/C Ratio			0.30	0.30		0.11		0.20	0.20			
v/c Ratio			0.37	0.66		0.62		0.85	0.40			
Control Delay (s/veh)			30.2	8.3		54.2		40.7	23.6			
Queue Delay			0.0	0.0		0.0		0.0	0.0			
Total Delay (s/veh)			30.2	8.3		54.2		40.7	23.6			
LOS			C	A		D		D	C			
Approach Delay (s/veh)			17.0			54.2			37.5			
Approach LOS			B			D			D			
Queue Length 50th (ft)			95	0		70		178	69			
Queue Length 95th (ft)			142	108		111		#264	127			
Internal Link Dist (ft)			969			199			413			
Turn Bay Length (ft)				150								
Base Capacity (vph)			800	671		320		577	275			
Starvation Cap Reductn			0	0		0		0	0			
Spillback Cap Reductn			0	0		0		0	0			
Storage Cap Reductn			0	0		0		0	0			
Reduced v/c Ratio			0.37	0.66		0.60		0.83	0.39			

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 37 (34%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 34.3		Intersection LOS: C	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

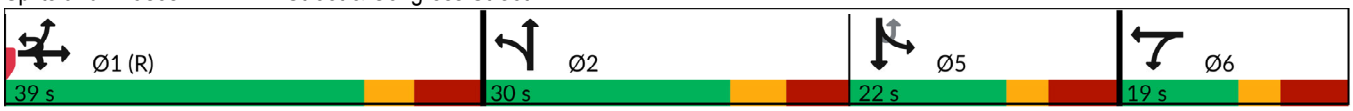


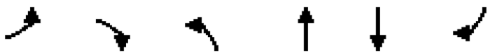
Lane Group	SBT	SBR
Permitted Phases		
Detector Phase	5	
Switch Phase		
Minimum Initial (s)	8.0	
Minimum Split (s)	21.0	
Total Split (s)	22.0	
Total Split (%)	20.0%	
Maximum Green (s)	13.0	
Yellow Time (s)	3.5	
All-Red Time (s)	5.5	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	7.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	1.5	
Pedestrian Calls (#/hr)	10	
Act Effct Green (s)	14.5	
Actuated g/C Ratio	0.13	
v/c Ratio	0.75	
Control Delay (s/veh)	58.9	
Queue Delay	0.0	
Total Delay (s/veh)	58.9	
LOS	E	
Approach Delay (s/veh)	58.9	
Approach LOS	E	
Queue Length 50th (ft)	107	
Queue Length 95th (ft)	#167	
Internal Link Dist (ft)	292	
Turn Bay Length (ft)		
Base Capacity (vph)	387	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.73	

Intersection Summary

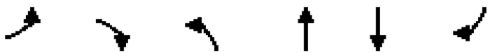
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: D Street & Congress Street





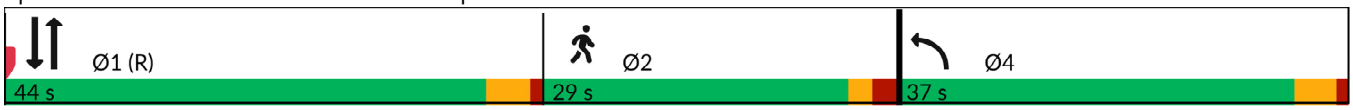
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	158	538	520	208	
Future Volume (vph)	0	0	158	538	520	208	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.97		0.98		
Frt					0.957		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1341	2908	2667	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1307	2908	2667	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					63		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			46			46	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	9%	8%	8%	2%	
Adj. Flow (vph)	0	0	166	566	547	219	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	166	566	766	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			20.1	55.9	55.9		
Actuated g/C Ratio			0.18	0.51	0.51		
v/c Ratio			0.68	0.38	0.55		
Control Delay (s/veh)			55.1	18.5	25.7		
Queue Delay			0.0	0.9	0.4		
Total Delay (s/veh)			55.1	19.4	26.1		
LOS			E	B	C		
Approach Delay (s/veh)				27.5	26.1		
Approach LOS				C	C		
Queue Length 50th (ft)			118	131	246		
Queue Length 95th (ft)			181	204	346		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			420	1478	1386		
Starvation Cap Reductn			0	611	232		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.40	0.65	0.66		

Intersection Summary	
Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 1:NBSB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 26.8	Intersection LOS: C
Intersection Capacity Utilization 40.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 159: D Street & I-90 Ramp





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	307	176	19	89	473	18	
Future Volume (vph)	307	176	19	89	473	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.994		
Flt Protected			0.950		0.954		
Satd. Flow (prot)	1670	1346	1504	1371	3131	0	
Flt Permitted			0.522		0.954		
Satd. Flow (perm)	1670	1346	826	1371	3131	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		183			5		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	10%	16%	16%	34%	4%	6%	
Adj. Flow (vph)	320	183	20	93	493	19	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	320	183	20	93	512	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		21.0		22.0
Total Split (s)	22.0		14.0		42.0		22.0
Total Split (%)	22.0%		14.0%		42.0%		22%
Maximum Green (s)	15.0		10.0		36.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	57.1	86.1	68.4	70.0	24.0		
Actuated g/C Ratio	0.57	0.86	0.68	0.70	0.24		
v/c Ratio	0.34	0.15	0.03	0.10	0.68		
Control Delay (s/veh)	14.7	0.6	5.9	6.0	38.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	14.7	0.6	5.9	6.0	38.6		
LOS	B	A	A	A	D		
Approach Delay (s/veh)	9.6			6.0	38.6		
Approach LOS	A			A	D		
Queue Length 50th (ft)	114	0	4	21	157		
Queue Length 95th (ft)	217	12	14	51	196		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	954	1299	656	958	1192		
Starvation Cap Reductn	0	0	0	0	47		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.34	0.14	0.03	0.10	0.45		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 26 (26%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 22.4		Intersection LOS: C	
Intersection Capacity Utilization 37.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	181	52	61	304	87	0	0	0	46	118	14
Future Vol, veh/h	15	181	52	61	304	87	0	0	0	46	118	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	20	12	4	2	6	3	0	0	0	2	3	36
Mvmt Flow	16	197	57	66	330	95	0	0	0	50	128	15
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	11.9	16.8	11.5
HCM LOS	B	C	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	13%	26%
Vol Thru, %	73%	67%	66%
Vol Right, %	21%	19%	8%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	248	452	178
LT Vol	15	61	46
Through Vol	181	304	118
RT Vol	52	87	14
Lane Flow Rate	270	491	193
Geometry Grp	1	1	1
Degree of Util (X)	0.401	0.661	0.312
Departure Headway (Hd)	5.353	4.847	5.797
Convergence, Y/N	Yes	Yes	Yes
Cap	674	752	621
Service Time	3.383	2.847	3.832
HCM Lane V/C Ratio	0.401	0.653	0.311
HCM Control Delay, s/veh	11.9	16.8	11.5
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.9	5	1.3

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	227	0	0	277	92	100	26	14	112	0	28
Future Vol, veh/h	36	227	0	0	277	92	100	26	14	112	0	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	8	9	0	0	5	3	1	0	0	12	0	25
Mvmt Flow	40	249	0	0	304	101	110	29	15	123	0	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.5	16	11.6	11.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	14%	0%	80%
Vol Thru, %	19%	86%	75%	0%
Vol Right, %	10%	0%	25%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	263	369	140
LT Vol	100	36	0	112
Through Vol	26	227	277	0
RT Vol	14	0	92	28
Lane Flow Rate	154	289	405	154
Geometry Grp	1	1	1	1
Degree of Util (X)	0.266	0.456	0.597	0.272
Departure Headway (Hd)	6.222	5.684	5.299	6.36
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	630	677	562
Service Time	4.3	3.749	3.357	4.438
HCM Lane V/C Ratio	0.268	0.459	0.598	0.274
HCM Control Delay, s/veh	11.6	13.5	16	11.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.1	2.4	4	1.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	26	49	2	76	62	14	7	159	6
Future Vol, veh/h	0	0	0	26	49	2	76	62	14	7	159	6
Conflicting Peds, #/hr	0	0	0	5	0	12	26	0	10	10	0	26
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	5	17
Mvmt Flow	0	0	0	30	56	2	87	71	16	8	183	7

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	468	496	101	216	0	0	97	0	0
Stage 1	264	264	-	-	-	-	-	-	-
Stage 2	204	232	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	557	478	959	1366	-	-	1509	-	-
Stage 1	785	694	-	-	-	-	-	-	-
Stage 2	835	716	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	511	0	945	1366	-	-	1498	-	-
Mov Cap-2 Maneuver	511	0	-	-	-	-	-	-	-
Stage 1	727	0	-	-	-	-	-	-	-
Stage 2	827	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		3.91	0.3
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	868	-	-	-	73	-	-
HCM Lane V/C Ratio	0.064	-	-	-	0.005	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	129	47	303	38	32
Future Vol, veh/h	205	129	47	303	38	32
Conflicting Peds, #/hr	0	27	27	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	5	4	6	0	13
Mvmt Flow	241	152	55	356	45	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	420	0	813	345
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	469	-
Critical Hdwy	-	-	4.14	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.417
Pot Cap-1 Maneuver	-	-	1129	-	351	674
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1107	-	322	660
Mov Cap-2 Maneuver	-	-	-	-	322	-
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.13	15.63
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	421	-	-	242	-
HCM Lane V/C Ratio	0.196	-	-	0.05	-
HCM Ctrl Dly (s/v)	15.6	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	151	138	0
Future Vol, veh/h	0	0	0	151	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	6	17	0
Mvmt Flow	0	0	0	166	152	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	152	152	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	680	900	1442	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	680	900	1442	-	-	-
Mov Cap-2 Maneuver	680	-	-	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	0	0	381	68	45
Future Vol, veh/h	202	0	0	381	68	45
Conflicting Peds, #/hr	0	0	0	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	0	0	6	0	4
Mvmt Flow	215	0	0	405	72	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	622	216
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	407	-
Critical Hdwy	-	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	-	0	0	-	454	819
Stage 1	-	0	0	-	826	-
Stage 2	-	0	0	-	676	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	453	818
Mov Cap-2 Maneuver	-	-	-	-	453	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.55
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	453	818	-	-
HCM Lane V/C Ratio	0.16	0.058	-	-
HCM Ctrl Dly (s/v)	14.5	9.7	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	6	69	25	7	2	29	67	7	1	82	8
Future Vol, veh/h	29	6	69	25	7	2	29	67	7	1	82	8
Conflicting Peds, #/hr	0	0	7	7	0	0	4	0	10	10	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	24	17	7	4	29	0	3	6	29	0	4	38
Mvmt Flow	35	7	84	30	9	2	35	82	9	1	100	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	268	282	116	280	283	96	114	0	0	100	0	0
Stage 1	111	111	-	167	167	-	-	-	-	-	-	-
Stage 2	157	171	-	113	116	-	-	-	-	-	-	-
Critical Hdwy	7.34	6.67	6.27	7.14	6.79	6.2	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.716	4.153	3.363	3.536	4.261	3.3	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	642	602	923	668	583	966	1469	-	-	1505	-	-
Stage 1	843	775	-	831	712	-	-	-	-	-	-	-
Stage 2	796	730	-	887	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	612	580	914	576	562	959	1465	-	-	1493	-	-
Mov Cap-2 Maneuver	612	580	-	576	562	-	-	-	-	-	-	-
Stage 1	840	772	-	803	689	-	-	-	-	-	-	-
Stage 2	764	706	-	792	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.5	11.61	2.12	0.08
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	497	-	-	781	586	19	-	-
HCM Lane V/C Ratio	0.024	-	-	0.162	0.071	0.001	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10.5	11.6	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	20	89	39	36	9	48	8	35	2	7	2
Future Vol, veh/h	8	20	89	39	36	9	48	8	35	2	7	2
Conflicting Peds, #/hr	11	0	8	8	0	11	38	0	8	8	0	38
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	4	10	14	0	15	0	26	0	0	100
Mvmt Flow	9	23	102	45	41	10	55	9	40	2	8	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	203	220	55	180	201	48	48	0	0	57	0	0
Stage 1	52	52	-	148	148	-	-	-	-	-	-	-
Stage 2	151	168	-	32	53	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.2	6.64	6.2	4.25	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.59	4.126	3.3	2.335	-	-	2.2	-	-
Pot Cap-1 Maneuver	759	682	1006	765	675	1026	1479	-	-	1560	-	-
Stage 1	966	856	-	836	753	-	-	-	-	-	-	-
Stage 2	856	763	-	964	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	622	955	622	615	1011	1417	-	-	1550	-	-
Mov Cap-2 Maneuver	639	622	-	622	615	-	-	-	-	-	-	-
Stage 1	924	818	-	798	718	-	-	-	-	-	-	-
Stage 2	759	728	-	828	792	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.04	11.56	4.03	1.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	849	645	313	-	-
HCM Lane V/C Ratio	0.039	-	-	0.158	0.15	0.001	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	10	11.6	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	796	61	29	1139	16	35
Future Vol, veh/h	796	61	29	1139	16	35
Conflicting Peds, #/hr	0	67	67	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	11	13	17	7	19	29
Mvmt Flow	847	65	31	1212	17	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	979	0	1614	524
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	668	-
Critical Hdwy	-	-	4.44	-	7.18	7.48
Critical Hdwy Stg 1	-	-	-	-	6.18	-
Critical Hdwy Stg 2	-	-	-	-	6.18	-
Follow-up Hdwy	-	-	2.37	-	3.69	3.59
Pot Cap-1 Maneuver	-	-	616	-	80	434
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	588	-	70	413
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	394	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.13	32.62
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	413	-	-	89	-
HCM Lane V/C Ratio	0.243	0.09	-	-	0.053	-
HCM Ctrl Dly (s/v)	72.1	14.6	-	-	11.5	0.9
HCM Lane LOS	F	B	-	-	B	A
HCM 95th %tile Q(veh)	0.9	0.3	-	-	0.2	-

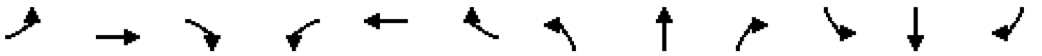
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	7	142	106	21
Future Vol, veh/h	5	3	7	142	106	21
Conflicting Peds, #/hr	0	6	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	60	33	14	9	11	19
Mvmt Flow	5	3	8	153	114	23

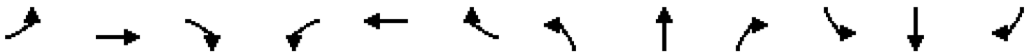
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	299	137	143	0	-	0
Stage 1	131	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	7	6.53	4.24	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	4.04	3.597	2.326	-	-	-
Pot Cap-1 Maneuver	586	835	1370	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	580	826	1363	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.59	0.36	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	85	-	653	-	-
HCM Lane V/C Ratio	0.006	-	0.013	-	-
HCM Ctrl Dly (s/v)	7.7	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	81	0	0	118	63	6	182	42	357	0	134
Future Volume (vph)	9	81	0	0	118	63	6	182	42	357	0	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98		1.00	0.87			
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.998		0.950		
Satd. Flow (prot)	1685	1722	0	0	1693	1660	0	1798	1516	1652	0	1507
Flt Permitted	0.614							0.998		0.107		
Satd. Flow (perm)	1087	1722	0	0	1693	1622	0	1795	1323	186	0	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						66			103			141
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	1		3	3		1	25		41	41		25
Confl. Bikes (#/hr)						1			5			14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	0%	1%	7%	0%	2%	3%	2%	0%	0%
Adj. Flow (vph)	9	85	0	0	124	66	6	192	44	376	0	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	85	0	0	124	66	0	198	44	376	0	141
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



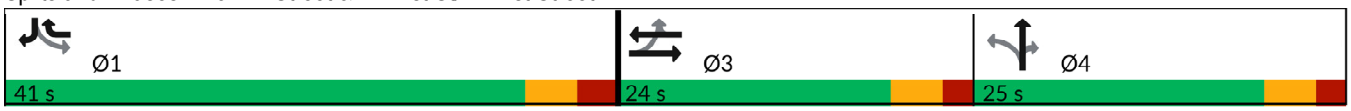
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	41.0	25.0	25.0	25.0	41.0		41.0
Total Split (%)	26.7%	26.7%			26.7%	45.6%	27.8%	27.8%	27.8%	45.6%		45.6%
Maximum Green (s)	18.5	18.5			18.5	35.0	19.5	19.5	19.5	35.0		35.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	12.4	12.4			12.4	49.2		14.7	14.7	37.2		37.2
Actuated g/C Ratio	0.16	0.16			0.16	0.65		0.19	0.19	0.49		0.49
v/c Ratio	0.05	0.30			0.45	0.06		0.57	0.13	4.13		0.17
Control Delay (s/veh)	28.3	31.6			34.7	1.5		34.5	0.8	Error		3.3
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	28.3	31.6			34.7	1.5		34.5	0.8	Error		3.3
LOS	C	C			C	A		C	A	F		A
Approach Delay (s/veh)		31.3			23.2			28.4			1047.4	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	4	36			53	0		85	0	~292		0
Queue Length 95th (ft)	17	82			111	12		159	0	#532		32
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	297	470			462	1098		514	452	91		814
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.03	0.18			0.27	0.06		0.39	0.10	4.13		0.17

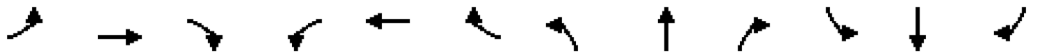
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 4.13			
Intersection Signal Delay (s/veh): 532.8		Intersection LOS: F	
Intersection Capacity Utilization 51.3%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: D Street & W First St/W First Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	145	259	1	12	1	54	200	0	59	231	37
Future Volume (vph)	52	145	259	1	12	1	54	200	0	59	231	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.98		1.00						0.97	
Frt			0.850		0.991						0.985	
Flt Protected		0.987			0.997			0.990			0.991	
Satd. Flow (prot)	0	1755	1531	0	2061	0	0	1815	0	0	1761	0
Flt Permitted		0.931			0.969			0.598			0.891	
Satd. Flow (perm)	0	1652	1499	0	2002	0	0	1096	0	0	1546	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			285		1							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			546			286			2036	
Travel Time (s)		29.1			12.4			6.5			46.3	
Confl. Peds. (#/hr)	3		3	3		3	19		46	46		19
Confl. Bikes (#/hr)			2						4			13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	3%	2%	0%	0%	0%	6%	3%	0%	0%	1%	0%
Adj. Flow (vph)	57	159	285	1	13	1	59	220	0	65	254	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	216	285	0	15	0	0	279	0	0	360	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		24.0	20.0	20.0		24.0	24.0		27.0	27.0	
Total Split (%)	21.0%		24.0%	20.0%	20.0%		24.0%	24.0%		27.0%	27.0%	
Maximum Green (s)	15.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		25.2	35.2		10.0			20.0			31.8	
Actuated g/C Ratio		0.25	0.35		0.10			0.20			0.32	
v/c Ratio		0.50	0.40		0.07			1.27			0.73	
Control Delay (s/veh)		32.7	4.1		40.1			189.2			36.0	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		32.7	4.1		40.1			189.2			36.0	
LOS		C	A		D			F			D	
Approach Delay (s/veh)		16.4			40.1			189.2			36.0	
Approach LOS		B			D			F			D	
Queue Length 50th (ft)		111	0		8			~231			204	
Queue Length 95th (ft)		179	50		28			#397			306	
Internal Link Dist (ft)		1200			466			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		556	718		321			219			491	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.39	0.40		0.05			1.27			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay (s/veh): 64.6		Intersection LOS: E	
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

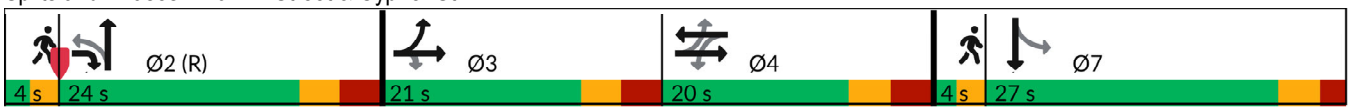
Intersection Summary

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

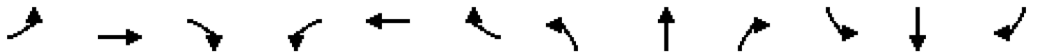
Queue shown is maximum after two cycles.

Splits and Phases: 64: D Street & Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	50	48	25	97	84	270	136	276	330	313
Future Volume (vph)	145	100	50	48	25	97	84	270	136	276	330	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99		0.97			0.98	1.00		
Frt		0.950				0.850			0.850		0.927	
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	1636	1603	0	1685	1773	1561	0	1779	1487	1728	1718	0
Flt Permitted	0.950			0.950				0.700		0.129		
Satd. Flow (perm)	1636	1603	0	1671	1773	1516	0	1260	1450	234	1718	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						145			273		42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)			2	2					2	2		
Confl. Bikes (#/hr)			3			4						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	6%	0%	0%	0%	0%	2%	2%	5%	1%	3%	2%
Adj. Flow (vph)	159	110	55	53	27	107	92	297	149	303	363	344
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	165	0	53	27	107	0	389	149	303	707	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	18.6	18.6		11.1	11.1	50.4		31.2	31.2	73.5	74.5	
Actuated g/C Ratio	0.16	0.16		0.09	0.09	0.42		0.26	0.26	0.61	0.62	
v/c Ratio	0.63	0.67		0.34	0.17	0.15		1.19	0.26	0.50	0.65	
Control Delay (s/veh)	57.9	60.2		56.8	51.9	1.6		150.7	1.1	23.2	20.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	57.9	60.2		56.8	51.9	1.6		150.7	1.1	23.2	20.2	
LOS	E	E		E	D	A		F	A	C	C	
Approach Delay (s/veh)		59.1			24.5			109.3			21.1	
Approach LOS		E			C			F			C	
Queue Length 50th (ft)	120	128		39	20	0		~343	0	136	341	
Queue Length 95th (ft)	183	194		80	49	15		#620	0	255	600	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	308	301		173	182	735		327	579	608	1082	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.52	0.55		0.31	0.15	0.15		1.19	0.26	0.50	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay (s/veh): 50.4		Intersection LOS: D	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

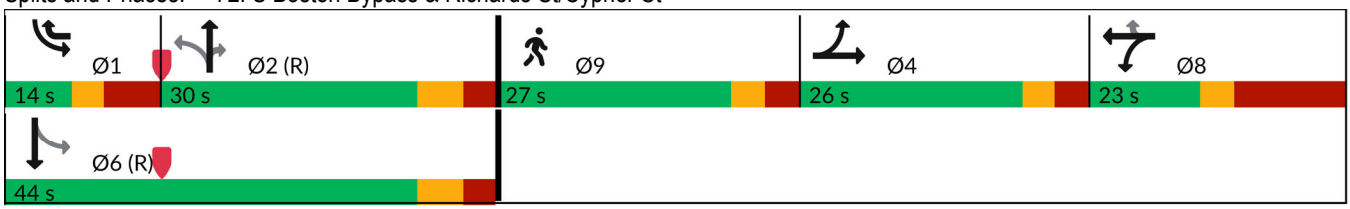
Intersection Summary

Queue shown is maximum after two cycles.

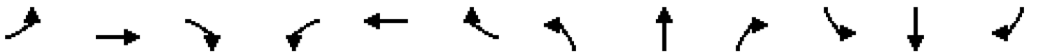
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	4	9	0	64	3	249	23	163	333	2
Future Volume (vph)	4	2	4	9	0	64	3	249	23	163	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98	0.87		0.89	0.96		0.98		0.87	1.00	
Frt			0.850			0.850		0.987			0.999	
Flt Protected		0.968			0.950			0.999		0.950		
Satd. Flow (prot)	0	1839	1615	0	1685	1406	0	3223	0	1636	1730	0
Flt Permitted		0.867			0.754			0.954		0.569		
Satd. Flow (perm)	0	1617	1406	0	1189	1351	0	3075	0	857	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			70		25				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	16		38	38		16	67		58	58		67
Confl. Bikes (#/hr)									5			14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%	0%	1%	4%	3%	2%	50%
Adj. Flow (vph)	4	2	4	10	0	70	3	271	25	177	362	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	4	0	10	70	0	299	0	177	364	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

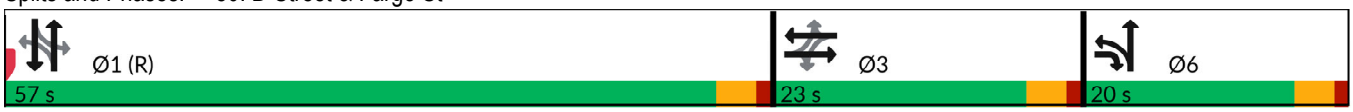


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	23.0	23.0	20.0	23.0	23.0	23.0	20.0			57.0	57.0	
Total Split (%)	23.0%	23.0%	20.0%	23.0%	23.0%	23.0%	20.0%			57.0%	57.0%	
Maximum Green (s)	19.0	19.0	16.0	19.0	19.0	19.0	16.0			53.0	53.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.2	19.6		9.2	9.2		86.8		74.8	74.8	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.04	0.01		0.09	0.37		0.11		0.28	0.28	
Control Delay (s/veh)		40.7	6.8		42.3	16.1		4.6		6.1	5.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	1.1	
Total Delay (s/veh)		40.7	6.8		42.3	16.1		4.6		6.1	6.3	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		27.1			19.4			4.6			6.2	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)		4	0		6	0		39		32	66	
Queue Length 95th (ft)		16	5		22	44		m47		71	120	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		339	405		249	339		2759		641	1294	
Starvation Cap Reductn		0	0		0	0		0		0	675	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.02	0.01		0.04	0.21		0.11		0.28	0.59	

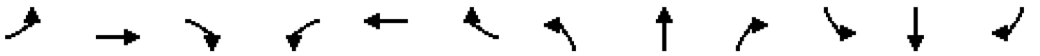
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 56 (56%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 7.1		Intersection LOS: A	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	461	129	17	327	182	59	247	11	379	352	95
Future Volume (vph)	111	461	129	17	327	182	59	247	11	379	352	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.95	0.96			0.95		0.96	1.00		0.95	0.97	
Frt		0.967			0.948			0.994			0.974	
Flt Protected	0.950				0.998		0.950	0.999		0.950	0.991	
Satd. Flow (prot)	1501	2800	0	0	2622	0	1327	2872	0	1435	2710	0
Flt Permitted	0.347				0.920		0.950	0.999		0.950	0.991	
Satd. Flow (perm)	523	2800	0	0	2413	0	1269	2869	0	1366	2684	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		31						3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	84		104	104		84	64		44	44		64
Confl. Bikes (#/hr)			7			4			2			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	5%	0%	10%	4%	4%	3%	18%	3%	1%	1%
Parking (#/hr)			0						0			
Adj. Flow (vph)	121	501	140	18	355	198	64	268	12	412	383	103
Shared Lane Traffic (%)							10%			28%		
Lane Group Flow (vph)	121	641	0	0	571	0	58	286	0	297	601	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	



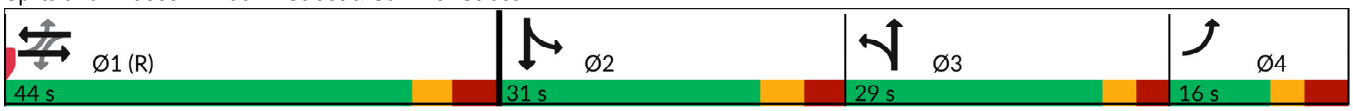
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	56.7	45.6			45.6		18.3	18.3		25.5	25.5	
Actuated g/C Ratio	0.47	0.38			0.38		0.15	0.15		0.21	0.21	
v/c Ratio	0.36	0.59			0.62		0.29	0.65		0.98	1.05	
Control Delay (s/veh)	19.9	31.8			51.8		47.3	53.9		93.7	95.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		1.4	0.0	
Total Delay (s/veh)	19.9	31.8			51.8		47.3	53.9		95.1	95.8	
LOS	B	C			D		D	D		F	F	
Approach Delay (s/veh)		29.9			51.8			52.8			95.5	
Approach LOS		C			D			D			F	
Queue Length 50th (ft)	48	204			207		46	117		259	~279	
Queue Length 95th (ft)	93	292			274		87	159		#461	#403	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	338	1082			916		276	600		304	575	
Starvation Cap Reductn	0	0			0		0	0		2	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.36	0.59			0.62		0.21	0.48		0.98	1.05	

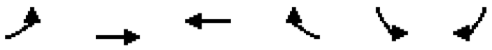
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay (s/veh): 60.7		Intersection LOS: E	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

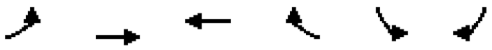
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: D Street & Summer Street





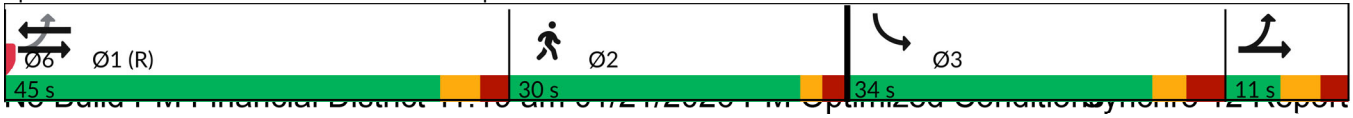
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	16	835	500	197	418	28	
Future Volume (vph)	16	835	500	197	418	28	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.98		0.98		
Frt			0.958		0.991		
Flt Protected		0.999			0.955		
Satd. Flow (prot)	0	3012	2795	0	2996	0	
Flt Permitted		0.937			0.955		
Satd. Flow (perm)	0	2824	2795	0	2933	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			53				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	79			79	11	4	
Confl. Bikes (#/hr)				4			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	13%	4%	6%	3%	0%	18%	
Adj. Flow (vph)	17	888	532	210	445	30	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	905	742	0	475	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		45.0		34.0		30.0
Total Split (%)	9.2%		37.5%		28.3%		25%
Maximum Green (s)	5.0		39.0		27.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		70.6	59.0		24.9		
Actuated g/C Ratio		0.59	0.49		0.21		
v/c Ratio		0.54	0.53		0.76		
Control Delay (s/veh)		19.1	38.2		53.1		
Queue Delay		0.1	0.7		0.2		
Total Delay (s/veh)		19.2	38.9		53.2		
LOS		B	D		D		
Approach Delay (s/veh)		19.2	38.9		53.2		
Approach LOS		B	D		D		
Queue Length 50th (ft)		7	251		179		
Queue Length 95th (ft)		m313	371		228		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1678	1401		736		
Starvation Cap Reductn		0	326		22		
Spillback Cap Reductn		119	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.58	0.69		0.67		

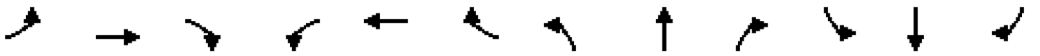
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 33.7		Intersection LOS: C	
Intersection Capacity Utilization 59.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 106: Summer Street & Pump House Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1032	180	5	510	55	31	55	7	208	187	167
Future Volume (vph)	49	1032	180	5	510	55	31	55	7	208	187	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.98		0.99	0.99			0.99			0.98	0.96
Frt		0.978			0.985			0.990				0.850
Flt Protected	0.950			0.950				0.983			0.974	
Satd. Flow (prot)	1574	3287	0	1404	3305	0	0	1748	0	0	1825	1545
Flt Permitted	0.301			0.098				0.803			0.788	
Satd. Flow (perm)	481	3287	0	143	3305	0	0	1422	0	0	1446	1480
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	75		82	82		75	24		18	18		24
Confl. Bikes (#/hr)			12						1			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	20%	3%	0%	6%	2%	29%	0%	3%	8%
Adj. Flow (vph)	52	1086	189	5	537	58	33	58	7	219	197	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1275	0	5	595	0	0	98	0	0	416	176
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

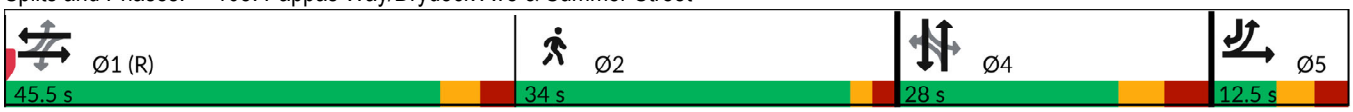


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			45.5	45.5		28.0	28.0		28.0	28.0	12.5
Total Split (%)	10.4%			37.9%	37.9%		23.3%	23.3%		23.3%	23.3%	10.4%
Maximum Green (s)	6.0			39.0	39.0		20.0	20.0		20.0	20.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	49.0	53.5		41.0	41.0			56.0			56.0	65.5
Actuated g/C Ratio	0.41	0.45		0.34	0.34			0.47			0.47	0.55
v/c Ratio	0.19	0.87		0.10	0.53			0.15			0.62	0.22
Control Delay (s/veh)	25.1	39.2		33.6	33.8			18.5			28.9	12.8
Queue Delay	0.0	12.4		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	25.1	51.6		33.6	33.8			18.5			28.9	12.8
LOS	C	D		C	C			B			C	B
Approach Delay (s/veh)		50.5			33.8			18.5			24.1	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	22	432		3	198			42			241	65
Queue Length 95th (ft)	m59	552		16	257			76			355	104
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	269	1465		48	1129			665			674	812
Starvation Cap Reductn	0	195		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.19	1.00		0.10	0.53			0.15			0.62	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 57 (48%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 39.5		Intersection LOS: D	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street

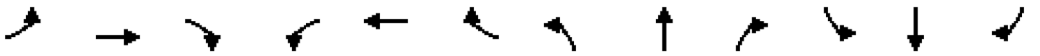


Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	173	36	33	59	95	18	311	30	257	788	151
Future Volume (vph)	33	173	36	33	59	95	18	311	30	257	788	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98	0.96		1.00	0.88		0.99	0.89
Frt		0.980				0.850			0.850			0.850
Flt Protected		0.993			0.982			0.997			0.988	
Satd. Flow (prot)	0	1778	0	0	1741	1446	0	1705	1507	0	1739	1501
Flt Permitted		0.945			0.633			0.447			0.615	
Satd. Flow (perm)	0	1684	0	0	1103	1388	0	764	1332	0	1070	1342
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7				99						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	26		41	41		26	82		83	83		82
Confl. Bikes (#/hr)			1									9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	0%	0%	0%	0%	8%	0%	0%	0%	0%	1%	4%
Adj. Flow (vph)	34	180	38	34	61	99	19	324	31	268	821	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	252	0	0	95	99	0	343	31	0	1089	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	25.0	25.0		25.0	25.0	12.0	50.0	50.0	50.0	12.0		
Total Split (%)	22.7%	22.7%		22.7%	22.7%	10.9%	45.5%	45.5%	45.5%	10.9%		
Maximum Green (s)	19.0	19.0		19.0	19.0	7.0	44.5	44.5	44.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.5			19.5	29.5		46.5	46.5		55.0	58.5
Actuated g/C Ratio		0.18			0.18	0.27		0.43	0.43		0.51	0.54
v/c Ratio		0.82			0.48	0.22		1.05	0.05		1.83	0.22
Control Delay (s/veh)		63.3			48.8	6.9		95.9	19.2		403.0	14.4
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		63.3			48.8	6.9		95.9	19.2		403.0	14.4
LOS		E			D	A		F	B		F	B
Approach Delay (s/veh)		63.3			27.4			89.5			354.0	
Approach LOS		E			C			F			F	
Queue Length 50th (ft)		166			60	0		~267	13		~1181	58
Queue Length 95th (ft)		#287			114	41		#447	32		#1435	99
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		331			213	454		327	571		594	723
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.76			0.45	0.22		1.05	0.05		1.83	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 108.5			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay (s/veh): 240.0		Intersection LOS: F	
Intersection Capacity Utilization 103.3%		ICU Level of Service G	
Analysis Period (min) 15			

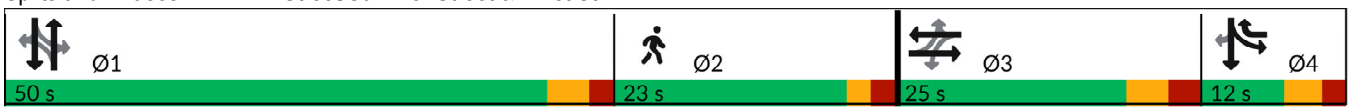
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

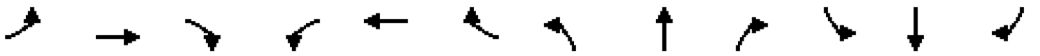
Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

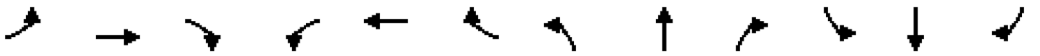
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	272	269	384	199	66	301	162	440	35	243	136
Future Volume (vph)	101	272	269	384	199	66	301	162	440	35	243	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.93	0.98	0.97	0.91		0.97		0.91		0.99	0.94
Frt			0.850		0.978				0.850			0.850
Flt Protected		0.987		0.950	0.979		0.950				0.994	
Satd. Flow (prot)	0	3089	1439	1353	2511	0	1630	1693	1569	0	3083	1378
Flt Permitted		0.987		0.950	0.979		0.454				0.891	
Satd. Flow (perm)	0	2869	1406	1311	2479	0	754	1693	1435	0	2744	1291
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283		18				125			98
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	205		34	34		205	33		45	45		33
Confl. Bikes (#/hr)			5			1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	3%	1%	2%	8%	12%	3%	1%	5%	3%	1%	2%
Adj. Flow (vph)	106	286	283	404	209	69	317	171	463	37	256	143
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	392	283	202	480	0	317	171	463	0	293	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		32.0	32.0		15.0		32.0	27.0	27.0	26.0
Total Split (%)	26.0%	26.0%		32.0%	32.0%		15.0%		32.0%	27.0%	27.0%	26.0%
Maximum Green (s)	20.0	20.0		26.0	26.0		9.0		26.0	21.0	21.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		19.3	100.0	35.7	35.7		28.9	32.9	68.7		17.9	37.3
Actuated g/C Ratio		0.19	1.00	0.36	0.36		0.29	0.33	0.69		0.18	0.37
v/c Ratio		0.66	0.20	0.42	0.53		1.01	0.31	0.43		0.60	0.26
Control Delay (s/veh)		42.6	0.3	29.7	28.6		85.3	25.9	5.6		42.4	4.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		42.6	0.3	29.7	28.6		85.3	25.9	5.6		42.4	4.9
LOS		D	A	C	C		F	C	A		D	A
Approach Delay (s/veh)		24.9			28.9			35.8			30.1	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)		124	0	107	135		~174	82	68		92	12
Queue Length 95th (ft)		171	0	204	216		#243	126	128		128	32
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		679	1406	483	909		314	643	1072		631	593
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.58	0.20	0.42	0.53		1.01	0.27	0.43		0.46	0.24

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 30.5		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

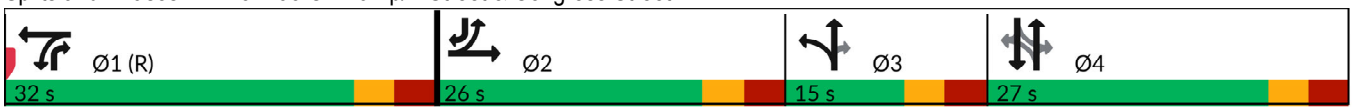
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	10	85	134	494	53	147	20	4	302	103	15	3
Future Volume (vph)	10	85	134	494	53	147	20	4	302	103	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150		0		0	
Storage Lanes		0		1	0		1		2		0	
Taper Length (ft)		0			0				0			
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	1.00	0.97	1.00	1.00	0.95
Ped Bike Factor			0.90			0.97				0.98		
Frt			0.974	0.850		0.987				0.981		
Flt Protected			0.983			0.988			0.950			
Satd. Flow (prot)	0	0	2738	1241	0	3051	0	0	2959	1419	0	0
Flt Permitted			0.983			0.988			0.205			
Satd. Flow (perm)	0	0	2519	1241	0	3003	0	0	638	1419	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			21	257		7				6		
Link Speed (mph)			30			30				30		
Link Distance (ft)			1049			279				493		
Travel Time (s)			23.8			6.3				11.2		
Confl. Peds. (#/hr)	57	64		29	29		64	29	57		50	64
Confl. Bikes (#/hr)				1						6	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	13%	3%	2%	2%	0%	0%	3%	1%	0%	0%
Parking (#/hr)										0		
Adj. Flow (vph)	10	87	137	504	54	150	20	4	308	105	15	3
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	284	454	0	224	0	0	312	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)			10			10				22		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.19	1.36	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	9	15		9	9
Number of Detectors			1	1		1			1	1		
Detector Template												
Leading Detector (ft)			50	50		50			50	50		
Trailing Detector (ft)			0	0		0			0	0		
Detector 1 Position(ft)			0	0		0			0	0		
Detector 1 Size(ft)			50	50		50			50	50		
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Queue (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Delay (s)			0.0	0.0		0.0			0.0	0.0		
Turn Type	Split	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm
Protected Phases	1	1	1	1	6	6			2	2		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	4	731	23
Future Volume (vph)	4	731	23
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	11	11	11
Storage Length (ft)	0		0
Storage Lanes	0		0
Taper Length (ft)	0		
Lane Util. Factor	0.95	0.95	0.95
Ped Bike Factor		0.99	
Frt		0.996	
Flt Protected			
Satd. Flow (prot)	0	3101	0
Flt Permitted			
Satd. Flow (perm)	0	3094	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		2	
Link Speed (mph)		30	
Link Distance (ft)		372	
Travel Time (s)		8.5	
Confl. Peds. (#/hr)	50		57
Confl. Bikes (#/hr)			6
Peak Hour Factor	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	6%
Parking (#/hr)			
Adj. Flow (vph)	4	746	23
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	776	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		80	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.19	1.19	1.19
Turning Speed (mph)	15		9
Number of Detectors		1	
Detector Template			
Leading Detector (ft)		50	
Trailing Detector (ft)		0	
Detector 1 Position(ft)		0	
Detector 1 Size(ft)		50	
Detector 1 Type		Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)		0.0	
Detector 1 Queue (s)		0.0	
Detector 1 Delay (s)		0.0	
Turn Type	Split	NA	
Protected Phases	5	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Permitted Phases								2				5
Detector Phase	1	1	1	1	6	6		2	2	2		5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0		8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5	25.5		21.0
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%
Maximum Green (s)	28.5	28.5	28.5	28.5	8.0	8.0		17.5	17.5	17.5		19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5	4.5		3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0	5.0		5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0		
Total Lost Time (s)			7.5	7.5		7.0			7.5	7.5		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None	None		None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0	7.0		7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5	4.5		1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0	0		10
Act Effct Green (s)			30.5	30.5		10.0			19.5	19.5		
Actuated g/C Ratio			0.28	0.28		0.09			0.18	0.18		
v/c Ratio			0.37	0.86		0.79			2.76	0.47		
Control Delay (s/veh)			31.1	33.4		68.0			838.8	71.6		
Queue Delay			0.0	0.0		0.0			0.0	0.0		
Total Delay (s/veh)			31.1	33.4		68.0			838.8	71.6		
LOS			C	C		E			F	E		
Approach Delay (s/veh)			32.5			68.0				625.7		
Approach LOS			C			E				F		
Queue Length 50th (ft)			90	159		81			~189	78		
Queue Length 95th (ft)			136	#381		#145			#301	153		
Internal Link Dist (ft)			969			199				413		
Turn Bay Length (ft)				150								
Base Capacity (vph)			774	529		283			113	256		
Starvation Cap Reductn			0	0		0			0	0		
Spillback Cap Reductn			0	0		0			0	0		
Storage Cap Reductn			0	0		0			0	0		
Reduced v/c Ratio			0.37	0.86		0.79			2.76	0.47		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.76			
Intersection Signal Delay (s/veh): 209.7		Intersection LOS: F	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

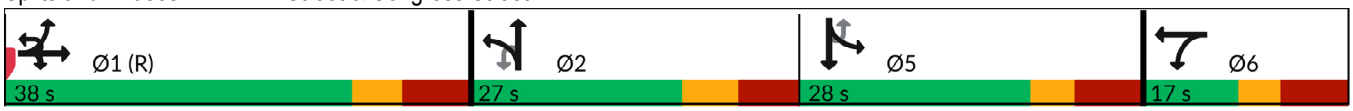


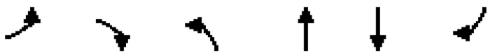
Lane Group	SBL	SBT	SBR
Permitted Phases			
Detector Phase	5	5	
Switch Phase			
Minimum Initial (s)	8.0	8.0	
Minimum Split (s)	21.0	21.0	
Total Split (s)	28.0	28.0	
Total Split (%)	25.5%	25.5%	
Maximum Green (s)	19.0	19.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	5.5	5.5	
Lost Time Adjust (s)		-2.0	
Total Lost Time (s)		7.0	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	2.0	
Recall Mode	None	None	
Walk Time (s)	7.0	7.0	
Flash Don't Walk (s)	1.5	1.5	
Pedestrian Calls (#/hr)	10	10	
Act Effct Green (s)		21.0	
Actuated g/C Ratio		0.19	
v/c Ratio		1.31	
Control Delay (s/veh)		187.4	
Queue Delay		0.0	
Total Delay (s/veh)		187.4	
LOS		F	
Approach Delay (s/veh)		187.4	
Approach LOS		F	
Queue Length 50th (ft)		~373	
Queue Length 95th (ft)		#498	
Internal Link Dist (ft)		292	
Turn Bay Length (ft)			
Base Capacity (vph)		593	
Starvation Cap Reductn		0	
Spillback Cap Reductn		0	
Storage Cap Reductn		0	
Reduced v/c Ratio		1.31	

Intersection Summary

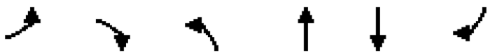
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: D Street & Congress Street





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	125	416	808	485	
Future Volume (vph)	0	0	125	416	808	485	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.98		0.95		
Frt					0.944		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1419	3049	2699	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1396	3049	2699	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					130		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			69			69	
Confl. Bikes (#/hr)						13	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	3%	3%	2%	0%	
Adj. Flow (vph)	0	0	132	438	851	511	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	132	438	1362	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							

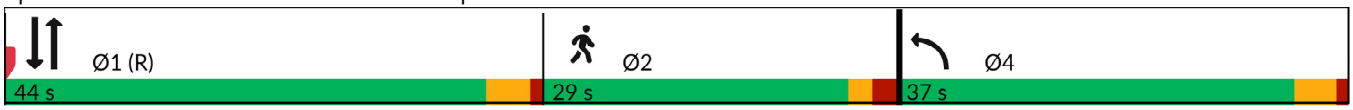


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			16.7	59.3	59.3		
Actuated g/C Ratio			0.15	0.54	0.54		
v/c Ratio			0.61	0.27	0.90		
Control Delay (s/veh)			55.1	15.0	22.4		
Queue Delay			0.0	0.5	7.9		
Total Delay (s/veh)			55.1	15.5	30.2		
LOS			E	B	C		
Approach Delay (s/veh)				24.6	30.2		
Approach LOS				C	C		
Queue Length 50th (ft)			90	85	243		
Queue Length 95th (ft)			146	135	m205		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			445	1644	1515		
Starvation Cap Reductn			0	776	137		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.30	0.50	0.99		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 94 (85%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 28.6		Intersection LOS: C	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 159: D Street & I-90 Ramp



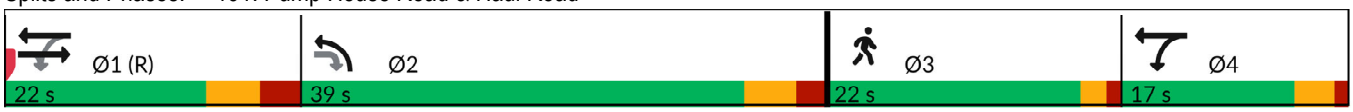
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	123	408	42	267	175	42	
Future Volume (vph)	123	408	42	267	175	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.971		
Flt Protected			0.950		0.961		
Satd. Flow (prot)	1701	1561	1631	1685	3107	0	
Flt Permitted			0.673		0.961		
Satd. Flow (perm)	1701	1561	1155	1685	3107	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		439			33		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	8%	0%	7%	9%	3%	2%	
Adj. Flow (vph)	132	439	45	287	188	45	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	132	439	45	287	233	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		21.0		22.0
Total Split (s)	22.0		17.0		39.0		22.0
Total Split (%)	22.0%		17.0%		39.0%		22%
Maximum Green (s)	15.0		13.0		33.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	59.1	80.4	74.7	76.7	17.3		
Actuated g/C Ratio	0.59	0.80	0.75	0.77	0.17		
v/c Ratio	0.13	0.33	0.05	0.22	0.41		
Control Delay (s/veh)	10.1	1.0	3.0	3.8	33.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	10.1	1.0	3.0	3.8	33.8		
LOS	B	A	A	A	C		
Approach Delay (s/veh)	3.1			3.7	33.8		
Approach LOS	A			A	C		
Queue Length 50th (ft)	36	0	6	44	60		
Queue Length 95th (ft)	75	19	15	74	96		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	1005	1537	953	1291	1108		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.13	0.29	0.05	0.22	0.21		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 9.6		Intersection LOS: A	
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	22.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	292	175	71	155	20	0	0	0	72	321	8
Future Vol, veh/h	13	292	175	71	155	20	0	0	0	72	321	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	3	1	0	3	10	0	0	0	3	0	25
Mvmt Flow	14	311	186	76	165	21	0	0	0	77	341	9
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	25.9	14.1	23.2
HCM LOS	D	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	29%	18%
Vol Thru, %	61%	63%	80%
Vol Right, %	36%	8%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	480	246	401
LT Vol	13	71	72
Through Vol	292	155	321
RT Vol	175	20	8
Lane Flow Rate	511	262	427
Geometry Grp	1	1	1
Degree of Util (X)	0.784	0.445	0.718
Departure Headway (Hd)	5.524	6.12	6.061
Convergence, Y/N	Yes	Yes	Yes
Cap	649	584	593
Service Time	3.605	4.218	4.138
HCM Lane V/C Ratio	0.787	0.449	0.72
HCM Control Delay, s/veh	25.9	14.1	23.2
HCM Lane LOS	D	B	C
HCM 95th-tile Q	7.6	2.3	5.9

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	394	0	0	160	34	47	14	26	286	0	39
Future Vol, veh/h	28	394	0	0	160	34	47	14	26	286	0	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	2	0	0	1	3	2	7	0	0	0	5
Mvmt Flow	30	428	0	0	174	37	51	15	28	311	0	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	25.4	12.8	11.3	18.9
HCM LOS	D	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	7%	0%	88%
Vol Thru, %	16%	93%	82%	0%
Vol Right, %	30%	0%	18%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	422	194	325
LT Vol	47	28	0	286
Through Vol	14	394	160	0
RT Vol	26	0	34	39
Lane Flow Rate	95	459	211	353
Geometry Grp	1	1	1	1
Degree of Util (X)	0.178	0.759	0.364	0.616
Departure Headway (Hd)	6.785	5.958	6.211	6.273
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	527	610	578	576
Service Time	4.85	3.983	4.265	4.299
HCM Lane V/C Ratio	0.18	0.752	0.365	0.613
HCM Control Delay, s/veh	11.3	25.4	12.8	18.9
HCM Lane LOS	B	D	B	C
HCM 95th-tile Q	0.6	6.9	1.7	4.2

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	11	17	2	48	38	16	20	338	22
Future Vol, veh/h	0	0	0	11	17	2	48	38	16	20	338	22
Conflicting Peds, #/hr	0	0	0	10	0	8	33	0	8	8	0	33
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	4	3	0	0	0	0
Mvmt Flow	0	0	0	12	18	2	52	41	17	22	367	24

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	583	630	66	424	0	0	67	0	0
Stage 1	162	162	-	-	-	-	-	-	-
Stage 2	421	468	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	478	401	1003	1124	-	-	1548	-	-
Stage 1	872	768	-	-	-	-	-	-	-
Stage 2	667	565	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	441	0	992	1124	-	-	1539	-	-
Mov Cap-2 Maneuver	441	0	-	-	-	-	-	-	-
Stage 1	825	0	-	-	-	-	-	-	-
Stage 2	650	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		3.93	0.39
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	800	-	-	-	94	-	-
HCM Lane V/C Ratio	0.046	-	-	-	0.014	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	344	36	141	16	25
Future Vol, veh/h	362	344	36	141	16	25
Conflicting Peds, #/hr	0	30	30	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	1	0	4
Mvmt Flow	389	370	39	152	17	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	789	0	833	606
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.1	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	840	-	341	493
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	822	-	317	482
Mov Cap-2 Maneuver	-	-	-	-	317	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	772	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.95	15.09
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	401	-	-	366	-
HCM Lane V/C Ratio	0.11	-	-	0.047	-
HCM Ctrl Dly (s/v)	15.1	-	-	9.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	73	327	0
Future Vol, veh/h	0	0	0	73	327	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	8	1	0
Mvmt Flow	0	0	0	81	363	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	364	364	0	-	0
Stage 1	364	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	574	685	1205	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	574	685	1205	-	-	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1205	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	364	0	0	215	26	58
Future Vol, veh/h	364	0	0	215	26	58
Conflicting Peds, #/hr	0	6	6	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	0	0	2	8	0
Mvmt Flow	409	0	0	242	29	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	652	410
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	-	0	0	-	424	646
Stage 1	-	0	0	-	658	-
Stage 2	-	0	0	-	784	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	423	645
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	423	645	-	-
HCM Lane V/C Ratio	0.069	0.101	-	-
HCM Ctrl Dly (s/v)	14.1	11.2	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	0.2	0.3	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	6	186	5	0	1	9	16	8	3	217	7
Future Vol, veh/h	15	6	186	5	0	1	9	16	8	3	217	7
Conflicting Peds, #/hr	1	0	5	5	0	1	5	0	9	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	13	17	1	20	0	0	0	6	13	0	1	0
Mvmt Flow	16	7	204	5	0	1	10	18	9	3	238	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	292	309	252	304	309	32	251	0	0	35	0	0
Stage 1	254	254	-	51	51	-	-	-	-	-	-	-
Stage 2	38	55	-	253	258	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.67	6.21	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.153	3.309	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	639	581	789	614	609	1048	1326	-	-	1589	-	-
Stage 1	727	670	-	919	857	-	-	-	-	-	-	-
Stage 2	949	820	-	713	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	629	569	782	439	597	1040	1321	-	-	1578	-	-
Mov Cap-2 Maneuver	629	569	-	439	597	-	-	-	-	-	-	-
Stage 1	722	666	-	905	844	-	-	-	-	-	-	-
Stage 2	940	808	-	518	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.74	12.51	2.11	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	460	-	-	761	486	24	-	-
HCM Lane V/C Ratio	0.007	-	-	0.299	0.014	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	11.7	12.5	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	9	182	33	11	0	28	3	15	2	1	10
Future Vol, veh/h	2	9	182	33	11	0	28	3	15	2	1	10
Conflicting Peds, #/hr	7	0	1	1	0	7	11	0	5	5	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	18	0	4	33	7	0	0	30
Mvmt Flow	2	10	196	35	12	0	30	3	16	2	1	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	98	106	18	88	104	23	23	0	0	24	0	0
Stage 1	22	22	-	77	77	-	-	-	-	-	-	-
Stage 2	76	85	-	11	27	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.23	7.1	6.68	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.327	3.5	4.162	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	889	788	1057	903	757	1059	1579	-	-	1603	-	-
Stage 1	1002	881	-	938	801	-	-	-	-	-	-	-
Stage 2	938	829	-	1015	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	841	759	1043	705	730	1049	1560	-	-	1597	-	-
Mov Cap-2 Maneuver	841	759	-	705	730	-	-	-	-	-	-	-
Stage 1	988	869	-	916	782	-	-	-	-	-	-	-
Stage 2	900	809	-	813	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	10.42	4.48	1.12
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	939	-	-	1023	711	234	-	-
HCM Lane V/C Ratio	0.019	-	-	0.203	0.067	0.001	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	9.4	10.4	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1230	23	18	690	7	22
Future Vol, veh/h	1230	23	18	690	7	22
Conflicting Peds, #/hr	0	84	84	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	13	0	4	14	0
Mvmt Flow	1295	24	19	726	7	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1403	0	1792	745
Stage 1	-	-	-	-	1391	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	-	-	4.1	-	7.08	6.9
Critical Hdwy Stg 1	-	-	-	-	6.08	-
Critical Hdwy Stg 2	-	-	-	-	6.08	-
Follow-up Hdwy	-	-	2.2	-	3.64	3.3
Pot Cap-1 Maneuver	-	-	493	-	63	361
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	464	-	56	339
Mov Cap-2 Maneuver	-	-	-	-	56	-
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	580	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.95	31.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	56	339	-	-	92	-
HCM Lane V/C Ratio	0.131	0.068	-	-	0.041	-
HCM Ctrl Dly (s/v)	78.2	16.4	-	-	13.1	0.6
HCM Lane LOS	F	C	-	-	B	A
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.1	-

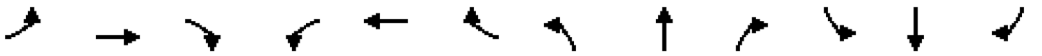
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	7	3	71	315	6
Future Vol, veh/h	8	7	3	71	315	6
Conflicting Peds, #/hr	0	5	5	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	14	33	7	2	33
Mvmt Flow	9	8	3	77	342	7

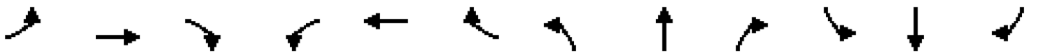
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	435	357	355	0	-	0
Stage 1	352	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.43	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.497	-	-	-
Pot Cap-1 Maneuver	582	661	1051	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	577	655	1046	-	-	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.05	0.34	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	73	-	611	-	-
HCM Lane V/C Ratio	0.003	-	0.027	-	-
HCM Ctrl Dly (s/v)	8.5	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	69	0	0	166	173	10	261	31	142	0	37
Future Volume (vph)	9	69	0	0	166	173	10	261	31	142	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97		1.00	0.87	0.97		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.998		0.950		
Satd. Flow (prot)	1348	1673	0	0	1613	1645	0	1833	1334	1504	0	1277
Flt Permitted	0.561							0.998		0.225		
Satd. Flow (perm)	792	1673	0	0	1613	1602	0	1831	1165	344	0	1277
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						188			132			125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	3		7	7		3	18		51	51		18
Confl. Bikes (#/hr)									9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	6%	0%	0%	6%	8%	0%	0%	17%	12%	0%	18%
Adj. Flow (vph)	10	75	0	0	180	188	11	284	34	154	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	75	0	0	180	188	0	295	34	154	0	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



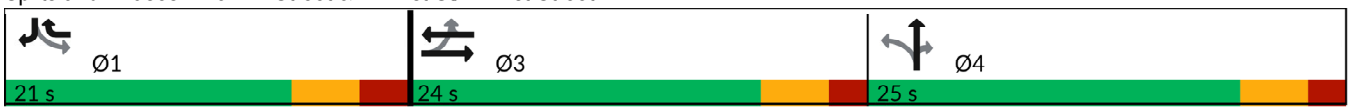
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	21.0	25.0	25.0	25.0	21.0		21.0
Total Split (%)	34.3%	34.3%			34.3%	30.0%	35.7%	35.7%	35.7%	30.0%		30.0%
Maximum Green (s)	18.5	18.5			18.5	15.0	19.5	19.5	19.5	15.0		15.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	13.5	13.5			13.5	27.9		15.4	15.4	17.9		17.9
Actuated g/C Ratio	0.25	0.25			0.25	0.51		0.28	0.28	0.33		0.33
v/c Ratio	0.05	0.18			0.45	0.20		0.57	0.08	1.36		0.08
Control Delay (s/veh)	18.8	19.6			23.6	1.8		22.9	0.4	236.5		0.3
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	18.8	19.6			23.6	1.8		22.9	0.4	236.5		0.3
LOS	B	B			C	A		C	A	F		A
Approach Delay (s/veh)		19.5			12.5			20.6			187.8	
Approach LOS		B			B			C			F	
Queue Length 50th (ft)	3	21			55	0		85	0	~80		0
Queue Length 95th (ft)	17	56			120	24		170	0	#225		0
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	316	667			643	930		766	564	113		506
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.03	0.11			0.28	0.20		0.39	0.06	1.36		0.08

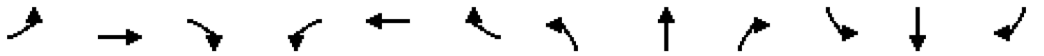
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 54.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay (s/veh): 50.7		Intersection LOS: D	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

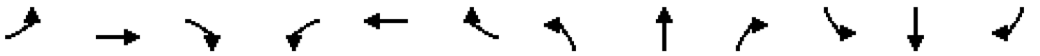
Splits and Phases: 52: D Street & W First St/W First Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	131	123	0	66	15	143	300	0	28	40	35
Future Volume (vph)	80	131	123	0	66	15	143	300	0	28	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		0.99						0.95	
Frt			0.850		0.975						0.954	
Flt Protected		0.981						0.984			0.987	
Satd. Flow (prot)	0	1609	1446	0	1779	0	0	1775	0	0	1423	0
Flt Permitted		0.858						0.541			0.809	
Satd. Flow (perm)	0	1400	1421	0	1779	0	0	976	0	0	1129	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			131		10							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			543			286			2036	
Travel Time (s)		29.1			12.3			6.5			46.3	
Confl. Peds. (#/hr)	5		2	2		5	13		54	54		13
Confl. Bikes (#/hr)									8			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	15%	8%	0%	17%	0%	6%	5%	0%	4%	28%	21%
Adj. Flow (vph)	84	138	129	0	69	16	151	316	0	29	42	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	129	0	85	0	0	467	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom		NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		27.0	21.0	21.0		27.0	27.0		23.0	23.0	
Total Split (%)	21.0%		27.0%	21.0%	21.0%		27.0%	27.0%		23.0%	23.0%	
Maximum Green (s)	15.0		21.0	15.0	15.0		21.0	21.0		18.0	18.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		27.1	38.6		11.5			23.0			16.3	
Actuated g/C Ratio		0.27	0.39		0.12			0.23			0.16	
v/c Ratio		0.54	0.20		0.40			2.08			0.59	
Control Delay (s/veh)		32.3	3.8		41.4			527.0			48.6	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		32.3	3.8		41.4			527.0			48.6	
LOS		C	A		D			F			D	
Approach Delay (s/veh)		21.8			41.4			527.0			48.6	
Approach LOS		C			D			F			D	
Queue Length 50th (ft)		125	0		52			~492			81	
Queue Length 95th (ft)		190	34		101			#693			142	
Internal Link Dist (ft)		1200			463			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		508	634		310			224			231	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.44	0.20		0.27			2.08			0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 19 (19%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.08			
Intersection Signal Delay (s/veh): 259.7		Intersection LOS: F	
Intersection Capacity Utilization 55.0%		ICU Level of Service B	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

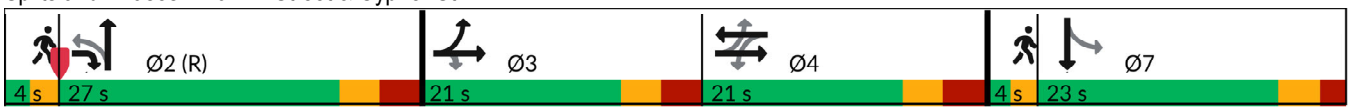
Intersection Summary

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

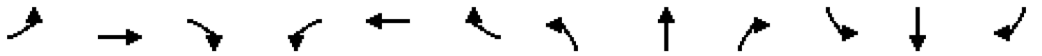
Queue shown is maximum after two cycles.

Splits and Phases: 64: D Street & Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	45	27	86	66	238	187	251	197	128	115	330
Future Volume (vph)	80	45	27	86	66	238	187	251	197	128	115	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.96		0.96			0.98	1.00		
Frt		0.943				0.850			0.850		0.889	
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	1546	1567	0	1296	1673	1501	0	1639	1369	1662	1556	0
Flt Permitted	0.950			0.950				0.660		0.305		
Satd. Flow (perm)	1530	1567	0	1249	1673	1440	0	1105	1339	533	1556	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						245			273		127	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)	4		8	8		4			1	1		
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	3%	8%	30%	6%	4%	4%	14%	14%	5%	13%	7%
Adj. Flow (vph)	82	46	28	89	68	245	193	259	203	132	119	340
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	74	0	89	68	245	0	452	203	132	459	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	13.2	13.2		15.2	15.2	32.4		53.5	53.5	70.7	71.7	
Actuated g/C Ratio	0.11	0.11		0.13	0.13	0.27		0.45	0.45	0.59	0.60	
v/c Ratio	0.49	0.43		0.54	0.32	0.43		0.92	0.27	0.31	0.47	
Control Delay (s/veh)	59.3	57.0		60.7	50.5	5.5		58.7	1.7	14.5	12.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	59.3	57.0		60.7	50.5	5.5		58.7	1.7	14.5	12.3	
LOS	E	E		E	D	A		E	A	B	B	
Approach Delay (s/veh)		58.2			25.3			41.1			12.8	
Approach LOS		E			C			D			B	
Queue Length 50th (ft)	65	56		81	51	0		352	0	44	143	
Queue Length 95th (ft)	117	103		144	94	52		#712	15	93	286	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	283	287		168	217	573		492	748	428	980	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.29	0.26		0.53	0.31	0.43		0.92	0.27	0.31	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 29.8		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

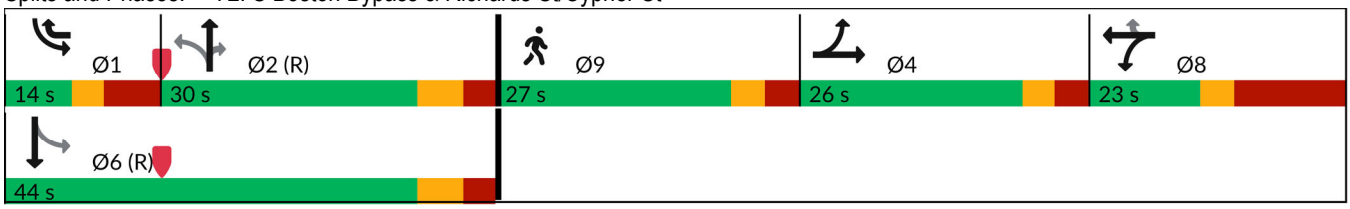
95th percentile volume exceeds capacity, queue may be longer.

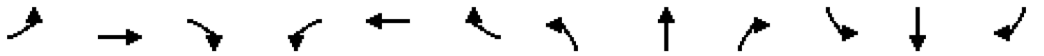
Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

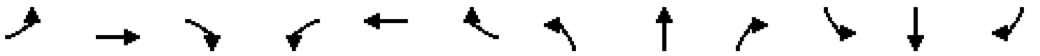
Queue shown is maximum after two cycles.

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	5	11	7	55	13	357	43	107	133	8
Future Volume (vph)	12	1	5	11	7	55	13	357	43	107	133	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.96	0.88		0.94	0.94		0.97		0.91	0.98	
Frt			0.850			0.850		0.984			0.991	
Flt Protected		0.956			0.971			0.998		0.950		
Satd. Flow (prot)	0	1569	1615	0	1722	1201	0	3056	0	1620	1429	0
Flt Permitted		0.791			0.856			0.949		0.494		
Satd. Flow (perm)	0	1242	1424	0	1429	1130	0	2890	0	771	1429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			59		25			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	27		34	34		27	73		53	53		73
Confl. Bikes (#/hr)									10			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	17%	0%	0%	0%	0%	30%	0%	7%	0%	4%	20%	38%
Adj. Flow (vph)	13	1	5	12	8	59	14	384	46	115	143	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	5	0	20	59	0	444	0	115	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

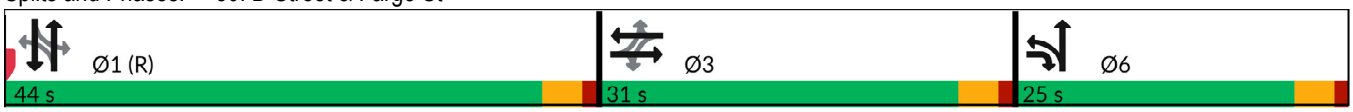


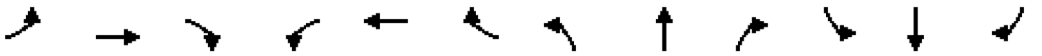
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	31.0	31.0	25.0	31.0	31.0	31.0	25.0			44.0	44.0	
Total Split (%)	31.0%	31.0%	25.0%	31.0%	31.0%	31.0%	25.0%			44.0%	44.0%	
Maximum Green (s)	27.0	27.0	21.0	27.0	27.0	27.0	21.0			40.0	40.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.4	19.9		9.4	9.4		86.6		74.5	74.5	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.12	0.02		0.15	0.37		0.18		0.20	0.14	
Control Delay (s/veh)		42.7	8.4		43.2	17.9		2.0		5.7	4.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		42.7	8.4		43.2	17.9		2.0		5.7	4.6	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		33.7			24.3			2.0			5.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8	0		12	0		23		20	28	
Queue Length 95th (ft)		27	6		34	47		m10		48	60	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		360	490		414	369		2600		574	1065	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.04	0.01		0.05	0.16		0.17		0.20	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 42 (42%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 5.9		Intersection LOS: A	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

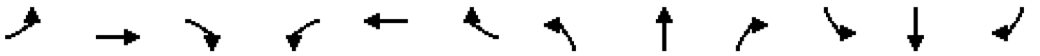
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	430	78	14	377	365	90	317	20	263	170	95
Future Volume (vph)	65	430	78	14	377	365	90	317	20	263	170	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.97			0.93		0.94	0.99		0.96	0.96	
Frt		0.977			0.928			0.991			0.959	
Flt Protected	0.950				0.999		0.950	0.999		0.950	0.988	
Satd. Flow (prot)	1472	2730	0	0	2470	0	1254	2665	0	1356	2471	0
Flt Permitted	0.228				0.940		0.950	0.999		0.950	0.988	
Satd. Flow (perm)	345	2730	0	0	2321	0	1174	2661	0	1298	2445	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		18						5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	75		106	106		75	68		43	43		68
Confl. Bikes (#/hr)			4			12			4			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	9%	11%	43%	12%	7%	10%	11%	15%	9%	10%	3%
Parking (#/hr)			0						0			
Adj. Flow (vph)	67	443	80	14	389	376	93	327	21	271	175	98
Shared Lane Traffic (%)							10%			33%		
Lane Group Flow (vph)	67	523	0	0	779	0	84	357	0	182	362	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	

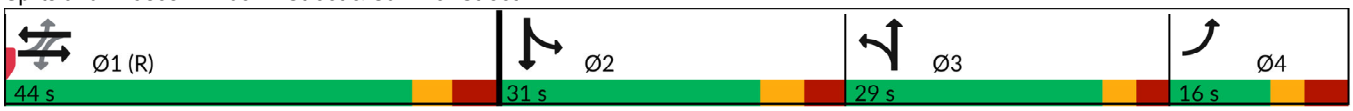


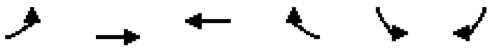
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	56.3	45.5			45.5		21.5	21.5		22.7	22.7	
Actuated g/C Ratio	0.47	0.38			0.38		0.18	0.18		0.19	0.19	
v/c Ratio	0.26	0.50			0.89		0.38	0.74		0.71	0.78	
Control Delay (s/veh)	19.8	31.0			30.6		47.4	55.5		61.1	58.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	19.8	31.0			30.6		47.4	55.5		61.1	58.0	
LOS	B	C			C		D	E		E	E	
Approach Delay (s/veh)		29.7			30.6			54.0			59.0	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)	27	170			197		68	154		154	157	
Queue Length 95th (ft)	58	247			#504		125	210		248	217	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	267	1045			879		261	559		288	525	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.25	0.50			0.89		0.32	0.64		0.63	0.69	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 18 (15%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 41.3		Intersection LOS: D	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

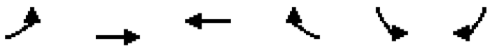
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: D Street & Summer Street





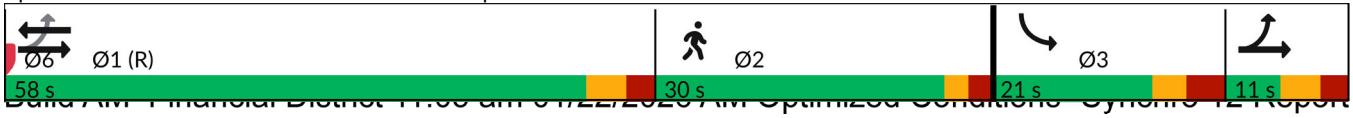
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	7	720	695	513	204	26	
Future Volume (vph)	7	720	695	513	204	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.97		0.97		
Frt			0.936		0.983		
Flt Protected					0.958		
Satd. Flow (prot)	0	2877	2650	0	2576	0	
Flt Permitted		0.944			0.958		
Satd. Flow (perm)	0	2715	2650	0	2502	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			203				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	82			82	9	3	
Confl. Bikes (#/hr)				18			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	29%	9%	10%	4%	16%	23%	
Adj. Flow (vph)	7	766	739	546	217	28	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	773	1285	0	245	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0

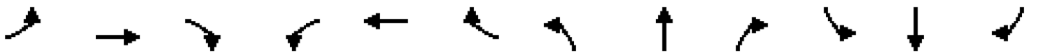


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		58.0		21.0		30.0
Total Split (%)	9.2%		48.3%		17.5%		25%
Maximum Green (s)	5.0		52.0		14.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		79.9	72.0		15.6		
Actuated g/C Ratio		0.67	0.60		0.13		
v/c Ratio		0.42	0.77		0.73		
Control Delay (s/veh)		12.1	33.6		63.8		
Queue Delay		0.0	48.6		0.0		
Total Delay (s/veh)		12.1	82.2		63.8		
LOS		B	F		E		
Approach Delay (s/veh)		12.1	82.2		63.8		
Approach LOS		B	F		E		
Queue Length 50th (ft)		74	554		106		
Queue Length 95th (ft)		239	m545		158		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1819	1671		354		
Starvation Cap Reductn		0	513		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.42	1.11		0.69		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 56.7		Intersection LOS: E	
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

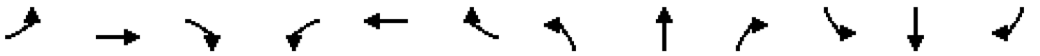
Splits and Phases: 106: Summer Street & Pump House Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	624	134	2	998	151	150	77	3	91	56	72
Future Volume (vph)	124	624	134	2	998	151	150	77	3	91	56	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.98			0.98			0.98	0.96
Frt		0.973			0.980			0.998				0.850
Flt Protected	0.950			0.950				0.968			0.970	
Satd. Flow (prot)	1604	2975	0	1685	3207	0	0	1687	0	0	1739	1236
Flt Permitted	0.091			0.091				0.698			0.696	
Satd. Flow (perm)	152	2975	0	160	3207	0	0	1198	0	0	1225	1193
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	85		43	43		85	17		22	22		17
Confl. Bikes (#/hr)						14			4			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	13%	12%	0%	5%	2%	8%	8%	67%	1%	14%	35%
Adj. Flow (vph)	135	678	146	2	1085	164	163	84	3	99	61	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	824	0	2	1249	0	0	250	0	0	160	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			48.5	48.5		25.0	25.0		25.0	25.0	12.5
Total Split (%)	10.4%			40.4%	40.4%		20.8%	20.8%		20.8%	20.8%	10.4%
Maximum Green (s)	6.0			42.0	42.0		17.0	17.0		17.0	17.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	54.5	59.0		44.0	44.0			50.5			50.5	62.5
Actuated g/C Ratio	0.45	0.49		0.37	0.37			0.42			0.42	0.52
v/c Ratio	0.69	0.56		0.03	1.06			0.50			0.31	0.12
Control Delay (s/veh)	43.1	24.8		26.5	81.8			30.3			25.9	13.3
Queue Delay	0.0	0.6		0.0	15.2			65.2			0.0	0.5
Total Delay (s/veh)	43.1	25.4		26.5	97.0			95.5			25.9	13.8
LOS	D	C		C	F			F			C	B
Approach Delay (s/veh)		27.9			96.9			95.5			21.9	
Approach LOS		C			F			F			C	
Queue Length 50th (ft)	73	238		1	~583			148			90	35
Queue Length 95th (ft)	m155	365		7	#725			241			156	67
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	196	1462		58	1175			504			515	625
Starvation Cap Reductn	0	284		0	0			0			0	0
Spillback Cap Reductn	0	0		0	78			314			0	313
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.69	0.70		0.03	1.14			1.32			0.31	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 72 (60%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay (s/veh): 65.6		Intersection LOS: E	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

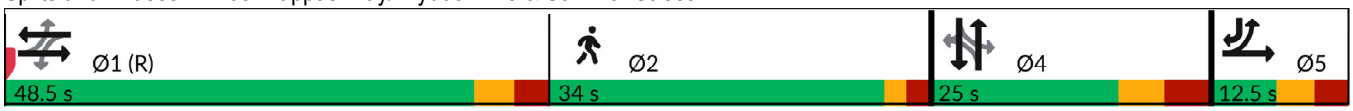
Queue shown is maximum after two cycles.

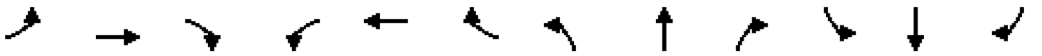
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

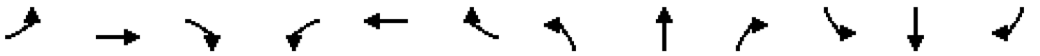
Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	89	30	33	114	340	30	629	33	113	314	49
Future Volume (vph)	48	89	30	33	114	340	30	629	33	113	314	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97		1.00	0.88		1.00	0.93
Frt		0.976				0.850			0.850			0.850
Flt Protected		0.986			0.989			0.998			0.987	
Satd. Flow (prot)	0	1678	0	0	1740	1546	0	1659	1005	0	1674	1406
Flt Permitted		0.779			0.863			0.820			0.097	
Satd. Flow (perm)	0	1320	0	0	1513	1505	0	1362	889	0	164	1307
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		11				362						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	16		11	11		16	41		52	52		41
Confl. Bikes (#/hr)									11			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	10%	0%	1%	1%	0%	3%	50%	9%	3%	11%
Adj. Flow (vph)	51	95	32	35	121	362	32	669	35	120	334	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	156	362	0	701	35	0	454	52
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	24.0	24.0		24.0	24.0	12.0	31.0	31.0	31.0	12.0		
Total Split (%)	26.7%	26.7%		26.7%	26.7%	13.3%	34.4%	34.4%	34.4%	13.3%		
Maximum Green (s)	18.0	18.0		18.0	18.0	7.0	25.5	25.5	25.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.6			15.6	25.6		27.6	27.6		36.1	39.6
Actuated g/C Ratio		0.18			0.18	0.30		0.32	0.32		0.42	0.46
v/c Ratio		0.72			0.57	0.51		1.60	0.12		2.07	0.09
Control Delay (s/veh)		47.4			40.3	5.1		306.7	23.5		520.2	14.7
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.4			40.3	5.1		306.7	23.5		520.2	14.7
LOS		D			D	A		F	C		F	B
Approach Delay (s/veh)		47.4			15.7			293.2			468.3	
Approach LOS		D			B			F			F	
Queue Length 50th (ft)		91			78	0		~565	19		~378	17
Queue Length 95th (ft)		165			139	56		#820	53		#596	42
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		317			353	707		438	285		219	603
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.56			0.44	0.51		1.60	0.12		2.07	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 85.7			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.07			
Intersection Signal Delay (s/veh): 242.2		Intersection LOS: F	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

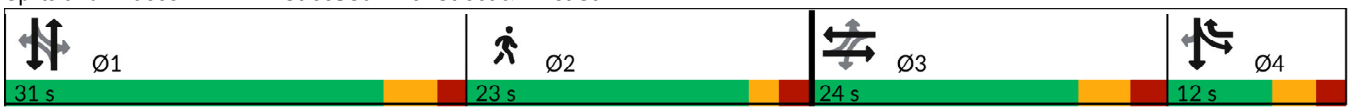
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

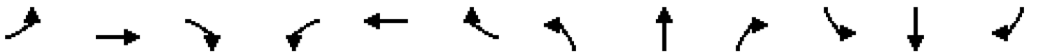
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	247	62	369	243	51	361	284	386	50	121	56
Future Volume (vph)	241	247	62	369	243	51	361	284	386	50	121	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.90	0.98	0.98	0.95		0.97		0.96		0.99	0.95
Frt			0.850		0.984				0.850			0.850
Flt Protected		0.976		0.950	0.981		0.950				0.986	
Satd. Flow (prot)	0	3063	1346	1289	2618	0	1630	1693	1511	0	2805	1351
Flt Permitted		0.976		0.950	0.981		0.613				0.777	
Satd. Flow (perm)	0	2771	1319	1263	2598	0	1021	1693	1444	0	2197	1285
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			229		12				167			98
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	139		26	26		139	24		20	20		24
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	5%	8%	7%	5%	9%	3%	1%	9%	9%	11%	4%
Adj. Flow (vph)	251	257	65	384	253	53	376	296	402	52	126	58
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	508	65	192	498	0	376	296	402	0	178	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



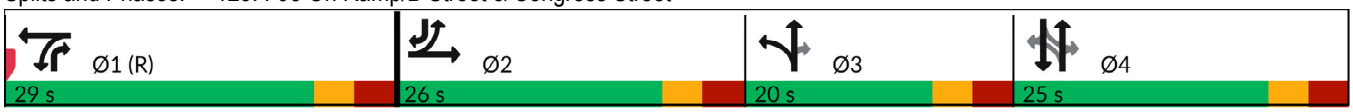
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		29.0	29.0		20.0		29.0	25.0	25.0	26.0
Total Split (%)	26.0%	26.0%		29.0%	29.0%		20.0%		29.0%	25.0%	25.0%	26.0%
Maximum Green (s)	20.0	20.0		23.0	23.0		14.0		23.0	19.0	19.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		21.1	100.0	31.5	31.5		31.4	35.4	66.9		15.4	36.5
Actuated g/C Ratio		0.21	1.00	0.32	0.32		0.31	0.35	0.67		0.15	0.37
v/c Ratio		0.79	0.05	0.47	0.60		0.90	0.49	0.39		0.53	0.11
Control Delay (s/veh)		46.8	0.1	34.1	33.0		54.0	27.9	4.5		44.0	0.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		46.8	0.1	34.1	33.0		54.0	27.9	4.5		44.0	0.9
LOS		D	A	C	C		D	C	A		D	A
Approach Delay (s/veh)		41.5			33.3			28.3			33.4	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)		166	0	115	150		204	148	50		60	0
Queue Length 95th (ft)		228	0	212	228		#318	208	92		93	4
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		673	1319	405	832		418	694	1042		461	556
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.75	0.05	0.47	0.60		0.90	0.43	0.39		0.39	0.10

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 67 (67%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 33.0		Intersection LOS: C	
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	41	173	460	45	113	18	458	90	9	12	5
Future Volume (vph)	9	41	173	460	45	113	18	458	90	9	12	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150	0		0		0
Storage Lanes		0		1	0		1	2		0		0
Taper Length (ft)		0			0			0				0
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	0.97	1.00	1.00	0.95	0.95
Ped Bike Factor			0.94			0.96		0.78	0.99			
Frt			0.974	0.850		0.984			0.986			
Flt Protected			0.991			0.987		0.950				
Satd. Flow (prot)	0	0	2613	1206	0	2863	0	2821	1330	0	0	0
Flt Permitted			0.991			0.987		0.950				
Satd. Flow (perm)	0	0	2489	1206	0	2817	0	2205	1330	0	0	0
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			21	450		9			4			
Link Speed (mph)			30			30			30			
Link Distance (ft)			1049			279			493			
Travel Time (s)			23.8			6.3			11.2			
Confl. Peds. (#/hr)	50	86		29	29		86	50		33		33
Confl. Bikes (#/hr)									6	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92
Heavy Vehicles (%)	11%	8%	16%	6%	2%	8%	17%	8%	9%	11%	0%	20%
Parking (#/hr)									0			
Adj. Flow (vph)	10	45	188	500	49	123	20	498	98	10	13	5
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	293	450	0	192	0	498	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left
Median Width(ft)			10			10			22			
Link Offset(ft)			0			0			0			
Crosswalk Width(ft)			16			16			16			
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.36	1.19	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	15		9	9	15
Number of Detectors			1	1		1		1	1			
Detector Template												
Leading Detector (ft)			50	50		50		50	50			
Trailing Detector (ft)			0	0		0		0	0			
Detector 1 Position(ft)			0	0		0		0	0			
Detector 1 Size(ft)			50	50		50		50	50			
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Queue (s)			0.0	0.0		0.0		0.0	0.0			
Detector 1 Delay (s)			0.0	0.0		0.0		0.0	0.0			
Turn Type	Split	Split	NA	Prot	Split	NA		Split	NA		Perm	Split
Protected Phases	1	1	1	1	6	6		2	2			5

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	231	13
Future Volume (vph)	231	13
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.98	
Frt	0.993	
Flt Protected	0.997	
Satd. Flow (prot)	2818	0
Flt Permitted	0.997	
Satd. Flow (perm)	2803	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	4	
Link Speed (mph)	30	
Link Distance (ft)	372	
Travel Time (s)	8.5	
Confl. Peds. (#/hr)		50
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.92	0.92
Heavy Vehicles (%)	9%	18%
Parking (#/hr)		
Adj. Flow (vph)	251	14
Shared Lane Traffic (%)		
Lane Group Flow (vph)	283	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	80	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.19	1.19
Turning Speed (mph)		9
Number of Detectors	1	
Detector Template		
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	50	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Turn Type	NA	
Protected Phases	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Permitted Phases											5	
Detector Phase	1	1	1	1	6	6		2	2		5	5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0		8.0	8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5		21.0	21.0
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0		22.0	22.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%		20.0%	20.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	10.0	10.0		20.5	20.5		13.0	13.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5		3.5	3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0		5.5	5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0		-2.0	-2.0			
Total Lost Time (s)			7.5	7.5		7.0		7.5	7.5			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None		None	None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0		7.0	7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5		1.5	1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0		10	10
Act Effct Green (s)			32.9	32.9		11.6		22.0	22.0			
Actuated g/C Ratio			0.30	0.30		0.11		0.20	0.20			
v/c Ratio			0.37	0.67		0.62		0.88	0.40			
Control Delay (s/veh)			30.2	8.5		54.2		42.5	22.0			
Queue Delay			0.0	0.0		0.0		0.0	0.0			
Total Delay (s/veh)			30.2	8.5		54.2		42.5	22.0			
LOS			C	A		D		D	C			
Approach Delay (s/veh)			17.0			54.2			38.8			
Approach LOS			B			D			D			
Queue Length 50th (ft)			95	0		70		187	68			
Queue Length 95th (ft)			142	110		111		#282	108			
Internal Link Dist (ft)			969			199			413			
Turn Bay Length (ft)				150								
Base Capacity (vph)			795	675		320		577	275			
Starvation Cap Reductn			0	0		0		0	0			
Spillback Cap Reductn			0	0		0		0	0			
Storage Cap Reductn			0	0		0		0	0			
Reduced v/c Ratio			0.37	0.67		0.60		0.86	0.39			

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 37 (34%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 34.7		Intersection LOS: C	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

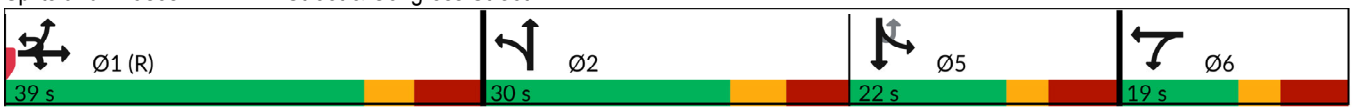


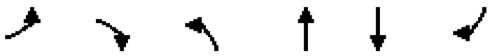
Lane Group	SBT	SBR
Permitted Phases		
Detector Phase	5	
Switch Phase		
Minimum Initial (s)	8.0	
Minimum Split (s)	21.0	
Total Split (s)	22.0	
Total Split (%)	20.0%	
Maximum Green (s)	13.0	
Yellow Time (s)	3.5	
All-Red Time (s)	5.5	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	7.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	1.5	
Pedestrian Calls (#/hr)	10	
Act Effct Green (s)	14.5	
Actuated g/C Ratio	0.13	
v/c Ratio	0.75	
Control Delay (s/veh)	58.9	
Queue Delay	0.0	
Total Delay (s/veh)	58.9	
LOS	E	
Approach Delay (s/veh)	58.9	
Approach LOS	E	
Queue Length 50th (ft)	107	
Queue Length 95th (ft)	#167	
Internal Link Dist (ft)	292	
Turn Bay Length (ft)		
Base Capacity (vph)	387	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.73	

Intersection Summary

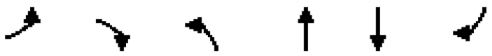
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: D Street & Congress Street





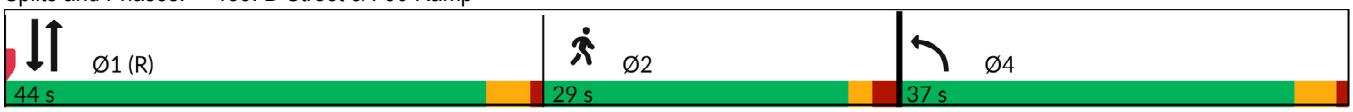
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	179	553	527	208	
Future Volume (vph)	0	0	179	553	527	208	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.97		0.98		
Frt					0.958		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1341	2908	2670	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1308	2908	2670	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					61		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			46			46	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	9%	8%	8%	2%	
Adj. Flow (vph)	0	0	188	582	555	219	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	188	582	774	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			21.9	54.1	54.1		
Actuated g/C Ratio			0.20	0.49	0.49		
v/c Ratio			0.71	0.41	0.58		
Control Delay (s/veh)			54.7	20.0	27.4		
Queue Delay			0.1	1.0	0.4		
Total Delay (s/veh)			54.8	21.0	27.8		
LOS			D	C	C		
Approach Delay (s/veh)				29.2	27.8		
Approach LOS				C	C		
Queue Length 50th (ft)			134	141	253		
Queue Length 95th (ft)			199	219	356		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			420	1430	1344		
Starvation Cap Reductn			13	566	192		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.46	0.67	0.67		

Intersection Summary	
Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 1:NBSB, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 28.5	Intersection LOS: C
Intersection Capacity Utilization 42.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 159: D Street & I-90 Ramp





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	307	194	19	89	485	18	
Future Volume (vph)	307	194	19	89	485	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.995		
Flt Protected			0.950		0.954		
Satd. Flow (prot)	1670	1346	1504	1371	3135	0	
Flt Permitted			0.519		0.954		
Satd. Flow (perm)	1670	1346	822	1371	3135	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		202			4		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	10%	16%	16%	34%	4%	6%	
Adj. Flow (vph)	320	202	20	93	505	19	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	320	202	20	93	524	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		24.0		22.0
Total Split (s)	22.0		14.0		42.0		22.0
Total Split (%)	22.0%		14.0%		42.0%		22%
Maximum Green (s)	15.0		10.0		36.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		2.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	56.4	86.0	67.7	69.3	24.7		
Actuated g/C Ratio	0.56	0.86	0.68	0.69	0.25		
v/c Ratio	0.34	0.17	0.03	0.10	0.68		
Control Delay (s/veh)	15.3	0.6	6.2	6.3	37.9		
Queue Delay	0.0	0.0	0.0	0.0	0.1		
Total Delay (s/veh)	15.3	0.6	6.2	6.3	37.9		
LOS	B	A	A	A	D		
Approach Delay (s/veh)	9.6			6.3	37.9		
Approach LOS	A			A	D		
Queue Length 50th (ft)	118	0	4	22	159		
Queue Length 95th (ft)	223	12	15	53	198		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	941	1292	648	948	1193		
Starvation Cap Reductn	0	0	0	0	71		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.34	0.16	0.03	0.10	0.47		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 26 (26%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 22.1		Intersection LOS: C	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	181	52	61	304	87	0	0	0	46	126	20
Future Vol, veh/h	15	181	52	61	304	87	0	0	0	46	126	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	20	12	4	2	6	3	0	0	0	2	3	36
Mvmt Flow	16	197	57	66	330	95	0	0	0	50	137	22
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	12.1	17.2	11.8
HCM LOS	B	C	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	13%	24%
Vol Thru, %	73%	67%	66%
Vol Right, %	21%	19%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	248	452	192
LT Vol	15	61	46
Through Vol	181	304	126
RT Vol	52	87	20
Lane Flow Rate	270	491	209
Geometry Grp	1	1	1
Degree of Util (X)	0.405	0.669	0.336
Departure Headway (Hd)	5.411	4.903	5.793
Convergence, Y/N	Yes	Yes	Yes
Cap	666	742	620
Service Time	3.445	2.903	3.832
HCM Lane V/C Ratio	0.405	0.662	0.337
HCM Control Delay, s/veh	12.1	17.2	11.8
HCM Lane LOS	B	C	B
HCM 95th-tile Q	2	5.2	1.5

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	227	0	0	277	93	100	26	19	145	0	28
Future Vol, veh/h	36	227	0	0	277	93	100	26	19	145	0	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	8	9	0	0	5	3	1	0	0	12	0	25
Mvmt Flow	40	249	0	0	304	102	110	29	21	159	0	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.2	17.2	12	13
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	14%	0%	84%
Vol Thru, %	18%	86%	75%	0%
Vol Right, %	13%	0%	25%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	263	370	173
LT Vol	100	36	0	145
Through Vol	26	227	277	0
RT Vol	19	0	93	28
Lane Flow Rate	159	289	407	190
Geometry Grp	1	1	1	1
Degree of Util (X)	0.286	0.472	0.618	0.347
Departure Headway (Hd)	6.455	5.983	5.474	6.57
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	607	651	551
Service Time	4.464	3.983	3.574	4.57
HCM Lane V/C Ratio	0.284	0.476	0.625	0.345
HCM Control Delay, s/veh	12	14.2	17.2	13
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.2	2.5	4.3	1.5

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	26	49	2	81	62	14	7	191	6
Future Vol, veh/h	0	0	0	26	49	2	81	62	14	7	191	6
Conflicting Peds, #/hr	0	0	0	5	0	12	26	0	10	10	0	26
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	5	17
Mvmt Flow	0	0	0	30	56	2	93	71	16	8	220	7

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	516	544	101	252	0	0	97	0	0
Stage 1	276	276	-	-	-	-	-	-	-
Stage 2	241	269	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	523	449	959	1325	-	-	1509	-	-
Stage 1	776	686	-	-	-	-	-	-	-
Stage 2	804	691	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	476	0	945	1325	-	-	1498	-	-
Mov Cap-2 Maneuver	476	0	-	-	-	-	-	-	-
Stage 1	713	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		4.09	0.25
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	896	-	-	-	61	-	-
HCM Lane V/C Ratio	0.07	-	-	-	0.005	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	161	47	304	38	32
Future Vol, veh/h	206	161	47	304	38	32
Conflicting Peds, #/hr	0	27	27	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	5	4	6	0	13
Mvmt Flow	242	189	55	358	45	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	459	0	834	365
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.14	-	6.4	6.33
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.417
Pot Cap-1 Maneuver	-	-	1092	-	341	656
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	633	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	312	643
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	591	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.14	16.03
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	408	-	-	241	-
HCM Lane V/C Ratio	0.202	-	-	0.052	-
HCM Ctrl Dly (s/v)	16	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	5	5	155	156	19
Future Vol, veh/h	54	5	5	155	156	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	6	17	0
Mvmt Flow	59	5	5	170	171	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	363	182	192	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	640	866	1393	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	637	866	1393	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.13	0.24	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	56	-	652	-	-
HCM Lane V/C Ratio	0.004	-	0.099	-	-
HCM Ctrl Dly (s/v)	7.6	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	202	0	0	381	0	68	5	45	0	0	3
Future Vol, veh/h	0	202	0	0	381	0	68	5	45	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	94	94	94	94	92	94	92	94	92	92	92
Heavy Vehicles, %	0	10	0	0	6	0	0	0	4	0	0	0
Mvmt Flow	0	215	0	0	405	0	72	5	48	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	-	-	-	0	622	620	216	624	620	407
Stage 1	-	-	-	-	-	-	215	215	-	405	405	-
Stage 2	-	-	-	-	-	-	407	405	-	219	215	-
Critical Hdwy	4.1	-	-	-	-	-	7.1	6.5	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1164	-	0	0	-	-	402	406	819	401	406	648
Stage 1	-	-	0	0	-	-	792	729	-	626	602	-
Stage 2	-	-	0	0	-	-	625	602	-	788	729	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1164	-	-	-	-	-	399	406	818	372	406	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	406	-	372	406	-
Stage 1	-	-	-	-	-	-	792	729	-	626	602	-
Stage 2	-	-	-	-	-	-	621	602	-	736	729	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	13.55	10.59
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	399	742	1164	-	-	-	647
HCM Lane V/C Ratio	0.181	0.072	-	-	-	-	0.005
HCM Ctrl Dly (s/v)	16	10.2	0	-	-	-	10.6
HCM Lane LOS	C	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.7	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	63	69	34	47	8	29	67	7	9	82	9
Future Vol, veh/h	29	63	69	34	47	8	29	67	7	9	82	9
Conflicting Peds, #/hr	0	0	7	7	0	0	4	0	10	10	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	24	17	7	4	29	0	3	6	29	0	4	38
Mvmt Flow	35	77	84	41	57	10	35	82	9	11	100	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	313	302	116	334	304	96	115	0	0	100	0	0
Stage 1	131	131	-	167	167	-	-	-	-	-	-	-
Stage 2	181	171	-	167	137	-	-	-	-	-	-	-
Critical Hdwy	7.34	6.67	6.27	7.14	6.79	6.2	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.34	5.67	-	6.14	5.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.716	4.153	3.363	3.536	4.261	3.3	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	599	586	922	616	567	966	1468	-	-	1505	-	-
Stage 1	822	760	-	831	712	-	-	-	-	-	-	-
Stage 2	772	730	-	830	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	513	561	914	462	543	959	1463	-	-	1493	-	-
Mov Cap-2 Maneuver	513	561	-	462	543	-	-	-	-	-	-	-
Stage 1	813	751	-	803	689	-	-	-	-	-	-	-
Stage 2	683	706	-	667	726	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.77	13.57	2.12	0.67
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	497	-	-	659	528	159	-	-
HCM Lane V/C Ratio	0.024	-	-	0.298	0.206	0.007	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	12.8	13.6	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.8	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	0	0	24	3	4
Future Vol, veh/h	37	0	0	24	3	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	0	0	26	3	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	66	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1582	-	944	1037
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1002	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	944	1037
Mov Cap-2 Maneuver	-	-	-	-	944	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1002	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	8.65
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	995	-	-	1582	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Ctrl Dly (s/v)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	20	95	39	36	9	53	8	35	2	7	2
Future Vol, veh/h	8	20	95	39	36	9	53	8	35	2	7	2
Conflicting Peds, #/hr	11	0	8	8	0	11	38	0	8	8	0	38
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	4	10	14	0	15	0	26	0	0	100
Mvmt Flow	9	23	109	45	41	10	61	9	40	2	8	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	215	231	55	191	212	48	48	0	0	57	0	0
Stage 1	52	52	-	159	159	-	-	-	-	-	-	-
Stage 2	163	179	-	32	53	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.2	6.64	6.2	4.25	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.59	4.126	3.3	2.335	-	-	2.2	-	-
Pot Cap-1 Maneuver	746	672	1006	751	665	1026	1479	-	-	1560	-	-
Stage 1	966	856	-	824	744	-	-	-	-	-	-	-
Stage 2	844	755	-	964	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	625	611	955	603	604	1011	1417	-	-	1550	-	-
Mov Cap-2 Maneuver	625	611	-	603	604	-	-	-	-	-	-	-
Stage 1	924	818	-	783	706	-	-	-	-	-	-	-
Stage 2	745	717	-	821	792	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.09	11.74	4.23	1.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	855	-	-	848	631	313	-	-
HCM Lane V/C Ratio	0.043	-	-	0.167	0.153	0.001	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	10.1	11.7	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	851	61	29	1190	16	35
Future Vol, veh/h	851	61	29	1190	16	35
Conflicting Peds, #/hr	0	67	67	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	11	13	17	7	19	29
Mvmt Flow	905	65	31	1266	17	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1037	0	1699	553
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	695	-
Critical Hdwy	-	-	4.44	-	7.18	7.48
Critical Hdwy Stg 1	-	-	-	-	6.18	-
Critical Hdwy Stg 2	-	-	-	-	6.18	-
Follow-up Hdwy	-	-	2.37	-	3.69	3.59
Pot Cap-1 Maneuver	-	-	583	-	69	413
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	556	-	61	394
Mov Cap-2 Maneuver	-	-	-	-	61	-
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	378	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.23	37.39
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	61	394	-	-	86	-
HCM Lane V/C Ratio	0.281	0.095	-	-	0.055	-
HCM Ctrl Dly (s/v)	86.2	15.1	-	-	11.9	1
HCM Lane LOS	F	C	-	-	B	A
HCM 95th %tile Q(veh)	1	0.3	-	-	0.2	-

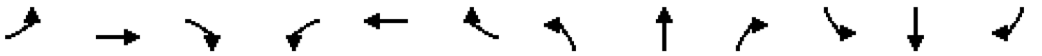
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	43	62	149	113	66
Future Vol, veh/h	44	43	62	149	113	66
Conflicting Peds, #/hr	0	6	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	60	33	14	9	11	19
Mvmt Flow	47	46	67	160	122	71

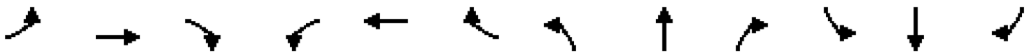
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	457	169	198	0	-	0
Stage 1	163	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Critical Hdwy	7	6.53	4.24	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	4.04	3.597	2.326	-	-	-
Pot Cap-1 Maneuver	469	801	1305	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	440	792	1299	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.65	2.33	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	529	-	564	-	-
HCM Lane V/C Ratio	0.051	-	0.166	-	-
HCM Ctrl Dly (s/v)	7.9	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	81	0	0	118	63	11	182	42	357	0	134
Future Volume (vph)	9	81	0	0	118	63	11	182	42	357	0	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	9	15	11	11	11	10	10	10
Storage Length (ft)	150		0	95		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98		1.00	0.87			
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.997		0.950		
Satd. Flow (prot)	1685	1722	0	0	1693	1660	0	1797	1516	1652	0	1507
Flt Permitted	0.613							0.997		0.107		
Satd. Flow (perm)	1085	1722	0	0	1693	1622	0	1791	1323	186	0	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						66			103			141
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			536			250			286	
Travel Time (s)		7.2			12.2			5.7			6.5	
Confl. Peds. (#/hr)	1		3	3		1	25		41	41		25
Confl. Bikes (#/hr)						1			5			14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	0%	1%	7%	0%	2%	3%	2%	0%	0%
Adj. Flow (vph)	9	85	0	0	124	66	12	192	44	376	0	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	85	0	0	124	66	0	204	44	376	0	141
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.04	1.14	0.88	1.04	1.04	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	1		1	1	0	0	0
Detector Template												
Leading Detector (ft)	50	50			50	50		50	50	0	0	0
Trailing Detector (ft)	0	0			0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0			0	0		0	0			
Detector 1 Size(ft)	50	50			50	50		50	50			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Turn Type	Perm	NA			NA	custom	Perm	NA	Perm	D.Pm		Prot
Protected Phases		3			3	1		4				1
Permitted Phases	3					3	4		4	1		



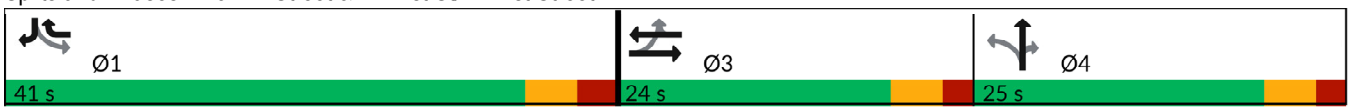
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3			3	1	4	4	4	1		1
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0	10.0	8.0	8.0	8.0	10.0		10.0
Minimum Split (s)	23.5	23.5			23.5	16.0	23.5	23.5	23.5	16.0		16.0
Total Split (s)	24.0	24.0			24.0	41.0	25.0	25.0	25.0	41.0		41.0
Total Split (%)	26.7%	26.7%			26.7%	45.6%	27.8%	27.8%	27.8%	45.6%		45.6%
Maximum Green (s)	18.5	18.5			18.5	35.0	19.5	19.5	19.5	35.0		35.0
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0			2.0	2.5	2.0	2.0	2.0	2.5		2.5
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	3.5	3.5			3.5	4.0		3.5	3.5	4.0		4.0
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Recall Mode	None	None			None	Max	None	None	None	Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0			
Flash Don't Walk (s)	10.0	10.0			10.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	12.4	12.4			12.4	49.2		15.0	15.0	37.3		37.3
Actuated g/C Ratio	0.16	0.16			0.16	0.65		0.20	0.20	0.49		0.49
v/c Ratio	0.05	0.30			0.45	0.06		0.58	0.13	4.13		0.17
Control Delay (s/veh)	28.6	31.8			34.9	1.5		34.7	0.8	Error		3.4
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	28.6	31.8			34.9	1.5		34.7	0.8	Error		3.4
LOS	C	C			C	A		C	A	F		A
Approach Delay (s/veh)		31.5			23.3			28.6			1053.3	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	4	36			53	0		87	0	~293		0
Queue Length 95th (ft)	17	82			111	13		163	0	#535		32
Internal Link Dist (ft)		236			456			170			206	
Turn Bay Length (ft)	150											
Base Capacity (vph)	295	469			461	1094		512	451	91		812
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.03	0.18			0.27	0.06		0.40	0.10	4.13		0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 4.13			
Intersection Signal Delay (s/veh): 532.9		Intersection LOS: F	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: D Street & W First St/W First Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	145	259	1	41	5	54	200	0	59	231	47
Future Volume (vph)	62	145	259	1	41	5	54	200	0	59	231	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	15	15	15	12	12	12	11	11	11
Storage Length (ft)	0		130	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.98		1.00						0.96	
Frt			0.850		0.987						0.981	
Flt Protected		0.985			0.999			0.990			0.991	
Satd. Flow (prot)	0	1751	1531	0	2055	0	0	1815	0	0	1750	0
Flt Permitted		0.904			0.991			0.593			0.894	
Satd. Flow (perm)	0	1603	1499	0	2038	0	0	1087	0	0	1543	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			285		5							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1280			546			286			2036	
Travel Time (s)		29.1			12.4			6.5			46.3	
Confl. Peds. (#/hr)	3		3	3		3	19		46	46		19
Confl. Bikes (#/hr)			2						4			13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	3%	2%	0%	0%	0%	6%	3%	0%	0%	1%	0%
Adj. Flow (vph)	68	159	285	1	45	5	59	220	0	65	254	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	285	0	51	0	0	279	0	0	371	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.88	0.88	0.88	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1			1			1	
Detector Template												
Leading Detector (ft)		50	50		50			50			50	
Trailing Detector (ft)		0	0		0			0			0	
Detector 1 Position(ft)		0	0		0			0			0	
Detector 1 Size(ft)		50	50		50			50			50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Queue (s)		0.0	0.0		0.0			0.0			0.0	
Detector 1 Delay (s)		0.0	0.0		0.0			0.0			0.0	
Turn Type	D.P+P	NA	custom	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4	2		4			2			7	
Permitted Phases	4		3	4			2			7		

Lane Group	Ø1	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3 4	2	4	4		2	2		7	7	
Switch Phase												
Minimum Initial (s)	6.0		10.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Total Split (s)	21.0		24.0	20.0	20.0		24.0	24.0		27.0	27.0	
Total Split (%)	21.0%		24.0%	20.0%	20.0%		24.0%	24.0%		27.0%	27.0%	
Maximum Green (s)	15.0		18.0	14.0	14.0		18.0	18.0		22.0	22.0	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0	3.0		2.0	2.0	
Lost Time Adjust (s)			-2.0		-2.0			-2.0			-2.0	
Total Lost Time (s)			4.0		4.0			4.0			3.0	
Lead/Lag	Lead		Lag	Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None		C-Max	None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0		7.0				7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	8.0		5.0				5.0	5.0		10.0	10.0	
Pedestrian Calls (#/hr)	0		0				0	0		0	0	
Act Effct Green (s)		25.7	35.4		10.3			20.0			32.9	
Actuated g/C Ratio		0.26	0.35		0.10			0.20			0.33	
v/c Ratio		0.52	0.40		0.24			1.29			0.73	
Control Delay (s/veh)		32.8	4.1		40.9			193.8			35.6	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay (s/veh)		32.8	4.1		40.9			193.8			35.6	
LOS		C	A		D			F			D	
Approach Delay (s/veh)		16.8			40.9			193.8			35.6	
Approach LOS		B			D			F			D	
Queue Length 50th (ft)		117	0		28			~233			208	
Queue Length 95th (ft)		184	50		63			#398			#324	
Internal Link Dist (ft)		1200			466			206			1956	
Turn Bay Length (ft)			130									
Base Capacity (vph)		549	721		330			217			507	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.41	0.40		0.15			1.29			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay (s/veh): 64.3		Intersection LOS: E	
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø1	Ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	2.0
Recall Mode	Max	None
Walk Time (s)	2.0	2.0
Flash Don't Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

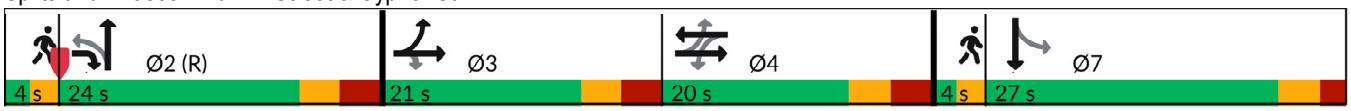
Intersection Summary

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

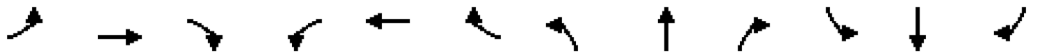
Queue shown is maximum after two cycles.

Splits and Phases: 64: D Street & Cypher St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	50	74	25	99	84	270	136	276	330	313
Future Volume (vph)	145	100	50	74	25	99	84	270	136	276	330	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	11	11	11	11	11	12	12
Storage Length (ft)	0		0	200		230	0		260	260		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99		0.97			0.98	1.00		
Frt		0.950				0.850			0.850		0.927	
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	1636	1603	0	1685	1773	1561	0	1779	1487	1728	1718	0
Flt Permitted	0.950			0.950				0.700		0.119		
Satd. Flow (perm)	1636	1603	0	1671	1773	1516	0	1260	1450	216	1718	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						145			273		42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		211			1280			444			623	
Travel Time (s)		4.8			29.1			10.1			14.2	
Confl. Peds. (#/hr)			2	2					2	2		
Confl. Bikes (#/hr)			3			4						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	6%	0%	0%	0%	0%	2%	2%	5%	1%	3%	2%
Adj. Flow (vph)	159	110	55	81	27	109	92	297	149	303	363	344
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	165	0	81	27	109	0	389	149	303	707	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1		1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50		50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	50	50		50	50	50		50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8	1		2		1	6	
Permitted Phases						8	2		2	6		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	10.0	10.0	10.0	6.0	10.0	
Minimum Split (s)	14.0	14.0		21.0	21.0	14.0	17.0	17.0	17.0	14.0	17.0	
Total Split (s)	26.0	26.0		23.0	23.0	14.0	30.0	30.0	30.0	14.0	44.0	
Total Split (%)	21.7%	21.7%		19.2%	19.2%	11.7%	25.0%	25.0%	25.0%	11.7%	36.7%	
Maximum Green (s)	20.0	20.0		10.0	10.0	6.0	23.0	23.0	23.0	6.0	37.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	3.0	3.0		10.0	10.0	5.0	3.0	3.0	3.0	5.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		11.0	11.0	6.0		5.0	5.0	6.0	5.0	
Lead/Lag	Lag	Lag				Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	18.6	18.6		12.6	12.6	51.5		30.1	30.1	72.1	73.1	
Actuated g/C Ratio	0.16	0.16		0.11	0.11	0.43		0.25	0.25	0.60	0.61	
v/c Ratio	0.63	0.67		0.46	0.15	0.15		1.23	0.26	0.51	0.67	
Control Delay (s/veh)	57.9	60.2		58.5	49.3	1.7		167.5	1.1	25.6	21.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	57.9	60.2		58.5	49.3	1.7		167.5	1.1	25.6	21.8	
LOS	E	E		E	D	A		F	A	C	C	
Approach Delay (s/veh)		59.1			28.8			121.4			22.9	
Approach LOS		E			C			F			C	
Queue Length 50th (ft)	120	128		60	19	0		~362	0	145	356	
Queue Length 95th (ft)	183	194		108	47	16		#620	0	270	633	
Internal Link Dist (ft)		131			1200			364			543	
Turn Bay Length (ft)				200		230			260	260		
Base Capacity (vph)	308	301		186	196	746		316	568	595	1062	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.52	0.55		0.44	0.14	0.15		1.23	0.26	0.51	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay (s/veh): 54.5		Intersection LOS: D	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	14.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

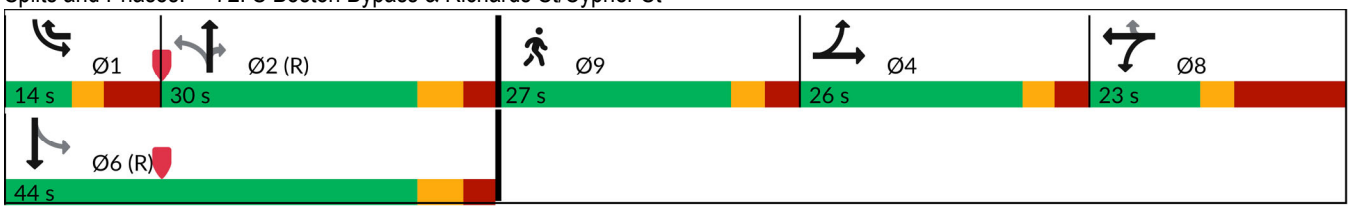
Intersection Summary

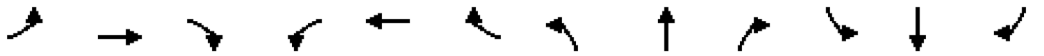
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 72: S Boston Bypass & Richards St/Cypher St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	4	9	0	68	3	251	23	163	333	2
Future Volume (vph)	4	2	4	9	0	68	3	251	23	163	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	10	10	11	10	10	10
Storage Length (ft)	0		0	0		140	720		0	0		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98	0.87		0.89	0.96		0.98		0.88	1.00	
Frt			0.850			0.850		0.988			0.999	
Flt Protected		0.968			0.950					0.950		
Satd. Flow (prot)	0	1839	1615	0	1685	1406	0	3230	0	1636	1730	0
Flt Permitted		0.868			0.754			0.954		0.568		
Satd. Flow (perm)	0	1619	1406	0	1189	1351	0	3079	0	856	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			74		25				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		130			528			2036			339	
Travel Time (s)		3.0			12.0			46.3			7.7	
Confl. Peds. (#/hr)	16		38	38		16	67		58	58		67
Confl. Bikes (#/hr)									5			14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%	0%	1%	4%	3%	2%	50%
Adj. Flow (vph)	4	2	4	10	0	74	3	273	25	177	362	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	4	0	10	74	0	301	0	177	364	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.09	1.04	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1		1		1	1	
Detector Template												
Leading Detector (ft)		50	50		50	50		50		50	50	
Trailing Detector (ft)		0	0		0	0		0		0	0	
Detector 1 Position(ft)		0	0		0	0		0		0	0	
Detector 1 Size(ft)		50	50		50	50		50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA		Perm	NA	
Protected Phases		3	6		3		6	1 6			1	
Permitted Phases	3		3	3		3	1			1		

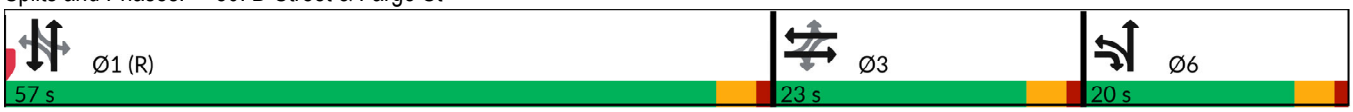


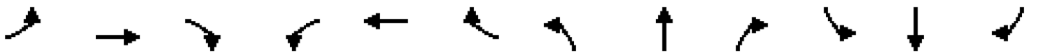
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	6	3	3	3	6	1 6		1	1	
Switch Phase												
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	6.0	10.0			10.0	10.0	
Minimum Split (s)	21.0	21.0	14.0	21.0	21.0	21.0	14.0			19.0	19.0	
Total Split (s)	23.0	23.0	20.0	23.0	23.0	23.0	20.0			57.0	57.0	
Total Split (%)	23.0%	23.0%	20.0%	23.0%	23.0%	23.0%	20.0%			57.0%	57.0%	
Maximum Green (s)	19.0	19.0	16.0	19.0	19.0	19.0	16.0			53.0	53.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0				-2.0	-2.0	
Total Lost Time (s)		2.0	2.0		2.0	2.0				2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	None	None	None	None	None			C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0	10.0				8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effct Green (s)		9.3	19.7		9.3	9.3		86.7		74.7	74.7	
Actuated g/C Ratio		0.09	0.20		0.09	0.09		0.87		0.75	0.75	
v/c Ratio		0.04	0.01		0.09	0.39		0.11		0.28	0.28	
Control Delay (s/veh)		40.5	6.8		42.2	16.0		4.5		6.1	5.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	1.1	
Total Delay (s/veh)		40.5	6.8		42.2	16.0		4.5		6.1	6.4	
LOS		D	A		D	B		A		A	A	
Approach Delay (s/veh)		27.0			19.1			4.5			6.3	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)		4	0		6	0		38		32	66	
Queue Length 95th (ft)		16	5		22	45		m46		71	121	
Internal Link Dist (ft)		50			448			1956			259	
Turn Bay Length (ft)						140						
Base Capacity (vph)		339	406		249	342		2762		639	1293	
Starvation Cap Reductn		0	0		0	0		0		0	674	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.02	0.01		0.04	0.22		0.11		0.28	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 56 (56%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay (s/veh): 7.1		Intersection LOS: A	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

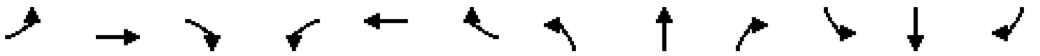
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 80: D Street & Fargo St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	461	129	17	328	222	60	257	11	379	352	95
Future Volume (vph)	111	461	129	17	328	222	60	257	11	379	352	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	10	11	11	12	10	11
Storage Length (ft)	155		150	0		250	110		0	180		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.95	0.91	0.91	0.95
Ped Bike Factor	0.96	0.96			0.94		0.96	1.00		0.95	0.97	
Frt		0.967			0.941			0.994			0.974	
Flt Protected	0.950				0.999		0.950	0.999		0.950	0.991	
Satd. Flow (prot)	1501	2800	0	0	2593	0	1327	2873	0	1435	2710	0
Flt Permitted	0.317				0.922		0.950	0.999		0.950	0.991	
Satd. Flow (perm)	480	2800	0	0	2390	0	1269	2870	0	1367	2685	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)		31						3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		555			620			339			338	
Travel Time (s)		12.6			14.1			7.7			7.7	
Confl. Peds. (#/hr)	84		104	104		84	64		44	44		64
Confl. Bikes (#/hr)			7			4			2			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	5%	0%	10%	4%	4%	3%	18%	3%	1%	1%
Parking (#/hr)			0						0			
Adj. Flow (vph)	121	501	140	18	357	241	65	279	12	412	383	103
Shared Lane Traffic (%)							10%			28%		
Lane Group Flow (vph)	121	641	0	0	616	0	58	298	0	297	601	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.19	1.14	1.14	1.19	1.14	1.25	1.19	1.19	1.14	1.25	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	50	50			50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	4	1			1		3	3		2	2	



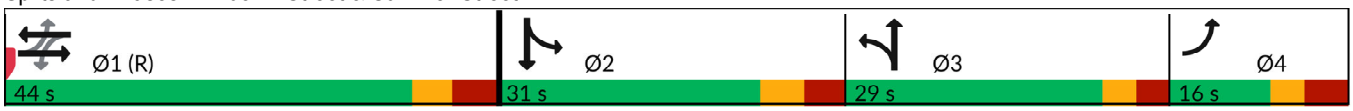
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	1			1								
Detector Phase	4	1		1	1		3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0	9.0		9.0	9.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	30.0		30.0	30.0		28.0	28.0		30.5	30.5	
Total Split (s)	16.0	44.0		44.0	44.0		29.0	29.0		31.0	31.0	
Total Split (%)	13.3%	36.7%		36.7%	36.7%		24.2%	24.2%		25.8%	25.8%	
Maximum Green (s)	9.0	36.5		36.5	36.5		23.0	23.0		23.5	23.5	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	3.0		4.0	4.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.5	3.5	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.5			5.5		4.0	4.0		5.5	5.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Ped	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	6.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	2.0	15.5		15.5	15.5		15.0	15.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	5		5	5		5	5		5	5	
Act Effct Green (s)	56.3	45.2			45.2		18.7	18.7		25.5	25.5	
Actuated g/C Ratio	0.47	0.38			0.38		0.16	0.16		0.21	0.21	
v/c Ratio	0.38	0.60			0.69		0.28	0.66		0.98	1.05	
Control Delay (s/veh)	20.5	32.2			54.0		46.9	54.0		93.7	95.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		1.4	0.0	
Total Delay (s/veh)	20.5	32.2			54.0		46.9	54.0		95.1	95.8	
LOS	C	C			D		D	D		F	F	
Approach Delay (s/veh)		30.3			54.0			52.9			95.5	
Approach LOS		C			D			D			F	
Queue Length 50th (ft)	49	205			228		45	122		259	~279	
Queue Length 95th (ft)	93	292			298		87	166		#461	#403	
Internal Link Dist (ft)		475			540			259			258	
Turn Bay Length (ft)	155						110			180		
Base Capacity (vph)	320	1073			899		276	600		304	575	
Starvation Cap Reductn	0	0			0		0	0		2	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.38	0.60			0.69		0.21	0.50		0.98	1.05	

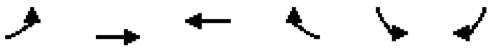
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay (s/veh): 61.2		Intersection LOS: E	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

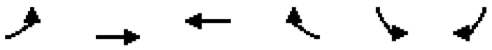
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: D Street & Summer Street





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	16	835	526	228	431	28	
Future Volume (vph)	16	835	526	228	431	28	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	12	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95	
Ped Bike Factor		1.00	0.98		0.98		
Frt			0.955		0.991		
Flt Protected		0.999			0.955		
Satd. Flow (prot)	0	3012	2783	0	2997	0	
Flt Permitted		0.936			0.955		
Satd. Flow (perm)	0	2821	2783	0	2934	0	
Right Turn on Red				Yes		No	
Satd. Flow (RTOR)			62				
Link Speed (mph)		30	30		30		
Link Distance (ft)		620	309		351		
Travel Time (s)		14.1	7.0		8.0		
Confl. Peds. (#/hr)	79			79	11	4	
Confl. Bikes (#/hr)				4			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	13%	4%	6%	3%	0%	18%	
Adj. Flow (vph)	17	888	560	243	459	30	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	905	803	0	489	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		22		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.19	1.19	1.19	1.19	1.19	1.14	
Turning Speed (mph)	15			9	15	9	
Number of Detectors		1	1		1		
Detector Template							
Leading Detector (ft)		50	50		50		
Trailing Detector (ft)		0	0		0		
Detector 1 Position(ft)		0	0		0		
Detector 1 Size(ft)		50	50		50		
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)		0.0	0.0		0.0		
Detector 1 Queue (s)		0.0	0.0		0.0		
Detector 1 Delay (s)		0.0	0.0		0.0		
Turn Type	D.P+P	NA	NA		Prot		
Protected Phases	6	1 6	1		3		2
Permitted Phases	1						
Detector Phase	6	1 6	1		3		
Switch Phase							
Minimum Initial (s)	5.0		8.0		6.0		1.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Split (s)	11.0		14.0		12.5		30.0
Total Split (s)	11.0		45.0		34.0		30.0
Total Split (%)	9.2%		37.5%		28.3%		25%
Maximum Green (s)	5.0		39.0		27.5		26.0
Yellow Time (s)	3.5		3.5		3.0		2.0
All-Red Time (s)	2.5		2.5		3.5		2.0
Lost Time Adjust (s)			-2.0		-2.0		
Total Lost Time (s)			4.0		4.5		
Lead/Lag			Lead				Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0		2.0
Recall Mode	None		C-Max		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							19.0
Pedestrian Calls (#/hr)							11
Act Effct Green (s)		70.1	59.0		25.4		
Actuated g/C Ratio		0.58	0.49		0.21		
v/c Ratio		0.54	0.57		0.77		
Control Delay (s/veh)		19.2	37.3		53.1		
Queue Delay		0.1	0.9		0.2		
Total Delay (s/veh)		19.3	38.2		53.3		
LOS		B	D		D		
Approach Delay (s/veh)		19.3	38.2		53.3		
Approach LOS		B	D		D		
Queue Length 50th (ft)		7	270		184		
Queue Length 95th (ft)		m312	395		236		
Internal Link Dist (ft)		540	229		271		
Turn Bay Length (ft)							
Base Capacity (vph)		1666	1399		736		
Starvation Cap Reductn		0	314		23		
Spillback Cap Reductn		122	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.59	0.74		0.69		

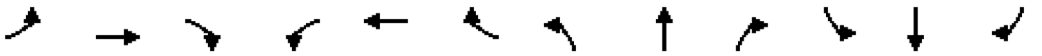
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 33.8		Intersection LOS: C	
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 106: Summer Street & Pump House Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1032	180	5	510	55	85	55	7	208	187	167
Future Volume (vph)	49	1032	180	5	510	55	85	55	7	208	187	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	13
Storage Length (ft)	0		0	65		205	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.98		0.99	0.99			0.99			0.98	0.96
Frt		0.978			0.985			0.994				0.850
Flt Protected	0.950			0.950				0.972			0.974	
Satd. Flow (prot)	1574	3287	0	1404	3305	0	0	1734	0	0	1825	1545
Flt Permitted	0.301			0.098				0.533			0.761	
Satd. Flow (perm)	481	3287	0	143	3305	0	0	945	0	0	1401	1480
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		204			1524			334			293	
Travel Time (s)		4.6			34.6			7.6			6.7	
Confl. Peds. (#/hr)	75		82	82		75	24		18	18		24
Confl. Bikes (#/hr)			12						1			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	20%	3%	0%	6%	2%	29%	0%	3%	8%
Adj. Flow (vph)	52	1086	189	5	537	58	89	58	7	219	197	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1275	0	5	595	0	0	154	0	0	416	176
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1			1			1	1
Detector Template												
Leading Detector (ft)	50	50		50	50			50			50	50
Trailing Detector (ft)	0	0		0	0			0			0	0
Detector 1 Position(ft)	0	0		0	0			0			0	0
Detector 1 Size(ft)	50	50		50	50			50			50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	1 5			1			4			4	5
Permitted Phases	1			1			4			4		4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

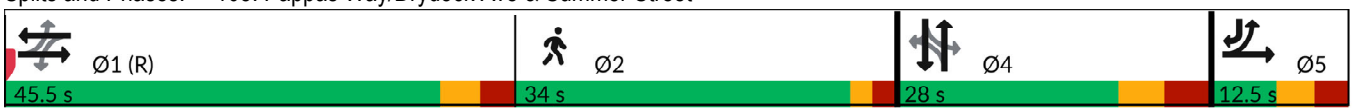


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	1 5		1	1		4	4		4	4	5
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.5			14.5	14.5		14.0	14.0		14.0	14.0	12.5
Total Split (s)	12.5			45.5	45.5		28.0	28.0		28.0	28.0	12.5
Total Split (%)	10.4%			37.9%	37.9%		23.3%	23.3%		23.3%	23.3%	10.4%
Maximum Green (s)	6.0			39.0	39.0		20.0	20.0		20.0	20.0	6.0
Yellow Time (s)	3.5			3.5	3.5		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	3.0			3.0	3.0		4.0	4.0		4.0	4.0	3.0
Lost Time Adjust (s)	-2.0			-2.0	-2.0			-2.0			-2.0	-2.0
Total Lost Time (s)	4.5			4.5	4.5			6.0			6.0	4.5
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	49.0	53.5		41.0	41.0			56.0			56.0	65.5
Actuated g/C Ratio	0.41	0.45		0.34	0.34			0.47			0.47	0.55
v/c Ratio	0.19	0.87		0.10	0.53			0.35			0.64	0.22
Control Delay (s/veh)	25.3	39.4		33.6	33.8			22.9			29.8	12.8
Queue Delay	0.0	12.6		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	25.3	52.0		33.6	33.8			22.9			29.8	12.8
LOS	C	D		C	C			C			C	B
Approach Delay (s/veh)		50.9			33.8			22.9			24.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	23	433		3	198			74			244	65
Queue Length 95th (ft)	m58	552		16	257			130			363	104
Internal Link Dist (ft)		124			1444			254			213	
Turn Bay Length (ft)				65								
Base Capacity (vph)	269	1465		48	1129			442			653	812
Starvation Cap Reductn	0	196		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.19	1.00		0.10	0.53			0.35			0.64	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 57 (48%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 39.7		Intersection LOS: D	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 108: Pappas Way/Drydock Ave & Summer Street

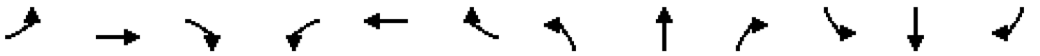


Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	28%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	173	36	33	59	95	18	311	30	257	788	151
Future Volume (vph)	33	173	36	33	59	95	18	311	30	257	788	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	11	9	9	10	10	10	11
Storage Length (ft)	0		0	0		0	0		0	0		95
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (ft)	8			8			8			8		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98	0.96		1.00	0.88		0.99	0.89
Frt		0.980				0.850			0.850			0.850
Flt Protected		0.993			0.982			0.997			0.988	
Satd. Flow (prot)	0	1778	0	0	1741	1446	0	1705	1507	0	1739	1501
Flt Permitted		0.945			0.633			0.447			0.615	
Satd. Flow (perm)	0	1684	0	0	1103	1388	0	764	1332	0	1070	1342
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7				99						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1897			571			316			1053	
Travel Time (s)		43.1			13.0			7.2			23.9	
Confl. Peds. (#/hr)	26		41	41		26	82		83	83		82
Confl. Bikes (#/hr)			1									9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	0%	0%	0%	0%	8%	0%	0%	0%	0%	1%	4%
Adj. Flow (vph)	34	180	38	34	61	99	19	324	31	268	821	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	252	0	0	95	99	0	343	31	0	1089	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		5			5			5			5	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.04	1.14	1.14	1.09	1.09	1.09	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1	1		0	0		0	0
Detector Template												
Leading Detector (ft)		50			50	50		0	0		0	0
Trailing Detector (ft)		0			0	0		0	0		0	0
Detector 1 Position(ft)		0			0	0						
Detector 1 Size(ft)		50			50	50						
Detector 1 Type		Cl+Ex			Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0	0.0						
Detector 1 Queue (s)		0.0			0.0	0.0						
Detector 1 Delay (s)		0.0			0.0	0.0						
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		3			3	4		1		4	1 4	
Permitted Phases	3			3		3	1		1	1 4		1 4

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	2
Permitted Phases	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3		3	3	4	1	1	1	4	1 4	1 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0	6.0		
Minimum Split (s)	14.0	14.0		14.0	14.0	11.0	13.5	13.5	13.5	11.0		
Total Split (s)	25.0	25.0		25.0	25.0	12.0	50.0	50.0	50.0	12.0		
Total Split (%)	22.7%	22.7%		22.7%	22.7%	10.9%	45.5%	45.5%	45.5%	10.9%		
Maximum Green (s)	19.0	19.0		19.0	19.0	7.0	44.5	44.5	44.5	7.0		
Yellow Time (s)	3.5	3.5		3.5	3.5	3.0	3.5	3.5	3.5	3.0		
All-Red Time (s)	2.5	2.5		2.5	2.5	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		4.0			4.0	3.0		3.5	3.5			
Lead/Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None	None		None	None	Max	Max	Max	Max	Max		
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.5			19.5	29.5		46.5	46.5		55.0	58.5
Actuated g/C Ratio		0.18			0.18	0.27		0.43	0.43		0.51	0.54
v/c Ratio		0.82			0.48	0.22		1.05	0.05		1.83	0.22
Control Delay (s/veh)		63.3			48.8	6.9		95.9	19.2		403.0	14.4
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		63.3			48.8	6.9		95.9	19.2		403.0	14.4
LOS		E			D	A		F	B		F	B
Approach Delay (s/veh)		63.3			27.4			89.5			354.0	
Approach LOS		E			C			F			F	
Queue Length 50th (ft)		166			60	0		~267	13		~1181	58
Queue Length 95th (ft)		#287			114	41		#447	32		#1435	99
Internal Link Dist (ft)		1817			491			236			973	
Turn Bay Length (ft)												95
Base Capacity (vph)		331			213	454		327	571		594	723
Starvation Cap Reductn		0			0	0		0	0		0	0
Spillback Cap Reductn		0			0	0		0	0		0	0
Storage Cap Reductn		0			0	0		0	0		0	0
Reduced v/c Ratio		0.76			0.45	0.22		1.05	0.05		1.83	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 108.5			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay (s/veh): 240.0		Intersection LOS: F	
Intersection Capacity Utilization 103.3%		ICU Level of Service G	
Analysis Period (min) 15			

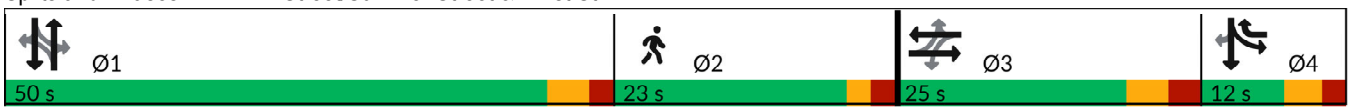
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

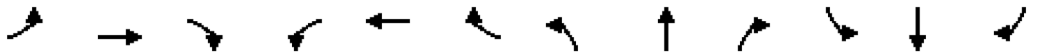
Lane Group	Ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	19.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	Ped
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

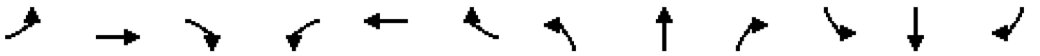
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: L Street/Summer Street & E 1st St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	272	269	402	199	66	301	162	440	35	243	136
Future Volume (vph)	101	272	269	402	199	66	301	162	440	35	243	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	11	13	12	16	11	11	11
Storage Length (ft)	0		200	250		0	0		0	0		125
Storage Lanes	0		1	1		0	1		1	0		1
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.93	0.98	0.97	0.91		0.97		0.91		0.99	0.94
Frt			0.850		0.979				0.850			0.850
Flt Protected		0.987		0.950	0.979		0.950				0.994	
Satd. Flow (prot)	0	3089	1439	1353	2520	0	1630	1693	1569	0	3083	1378
Flt Permitted		0.987		0.950	0.979		0.454				0.891	
Satd. Flow (perm)	0	2872	1406	1311	2486	0	754	1693	1435	0	2744	1291
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283		17				125			98
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		541			1049			220			221	
Travel Time (s)		12.3			23.8			5.0			5.0	
Confl. Peds. (#/hr)	205		34	34		205	33		45	45		33
Confl. Bikes (#/hr)			5			1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	3%	1%	2%	8%	12%	3%	1%	5%	3%	1%	2%
Adj. Flow (vph)	106	286	283	423	209	69	317	171	463	37	256	143
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	392	283	211	490	0	317	171	463	0	293	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.25	1.19	1.19	1.10	1.14	0.97	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1		1	1	1		1	1
Detector Template												
Leading Detector (ft)		50	50	50	50		50	50	50		50	50
Trailing Detector (ft)		0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)		0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)		50	50	50	50		50	50	50		50	50
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Turn Type	Split	NA	Free	Split	NA		D.P+P	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	2	2		1	1		3	3 4	1		4	2
Permitted Phases			Free				4		3 4	4		4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	1		3	3 4	1	4	4	2
Switch Phase												
Minimum Initial (s)	8.0	8.0		17.0	17.0		8.0		17.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		24.0	24.0		14.0		24.0	25.0	25.0	25.0
Total Split (s)	26.0	26.0		32.0	32.0		15.0		32.0	27.0	27.0	26.0
Total Split (%)	26.0%	26.0%		32.0%	32.0%		15.0%		32.0%	27.0%	27.0%	26.0%
Maximum Green (s)	20.0	20.0		26.0	26.0		9.0		26.0	21.0	21.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)		4.0		4.0	4.0		4.0		4.0		4.0	4.0
Lead/Lag	Lead	Lead					Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max		None		C-Max	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	7.0
Flash Don't Walk (s)	12.0	12.0		11.0	11.0				11.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0				0	0	0	0
Act Effct Green (s)		19.3	100.0	35.7	35.7		28.9	32.9	68.7		17.9	37.3
Actuated g/C Ratio		0.19	1.00	0.36	0.36		0.29	0.33	0.69		0.18	0.37
v/c Ratio		0.66	0.20	0.44	0.54		1.01	0.31	0.43		0.60	0.26
Control Delay (s/veh)		42.6	0.3	30.1	28.8		85.3	25.9	5.6		42.4	4.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		42.6	0.3	30.1	28.8		85.3	25.9	5.6		42.4	4.9
LOS		D	A	C	C		F	C	A		D	A
Approach Delay (s/veh)		24.9			29.2			35.8			30.1	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)		124	0	113	139		~174	82	68		92	12
Queue Length 95th (ft)		171	0	214	221		#243	126	128		128	32
Internal Link Dist (ft)		461			969			140			141	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		679	1406	483	911		314	643	1072		631	593
Starvation Cap Reductn		0	0	0	0		0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0	0		0	0
Reduced v/c Ratio		0.58	0.20	0.44	0.54		1.01	0.27	0.43		0.46	0.24

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 30.6		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

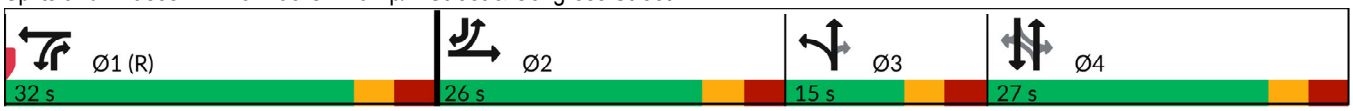
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 123: I-93 On Ramp/B Street & Congress Street



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	10	85	134	494	53	147	20	4	320	103	15	3
Future Volume (vph)	10	85	134	494	53	147	20	4	320	103	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12	12	11	11	11	11	11
Storage Length (ft)		0		150	0		150		0		0	
Storage Lanes		0		1	0		1		2		0	
Taper Length (ft)		0			0				0			
Lane Util. Factor	0.95	0.95	0.91	0.91	0.95	0.95	0.95	1.00	0.97	1.00	1.00	0.95
Ped Bike Factor			0.90			0.97				0.98		
Frt			0.974	0.850		0.987				0.981		
Flt Protected			0.983			0.988			0.950			
Satd. Flow (prot)	0	0	2738	1241	0	3051	0	0	2959	1419	0	0
Flt Permitted			0.983			0.988			0.205			
Satd. Flow (perm)	0	0	2519	1241	0	3003	0	0	638	1419	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			21	257		7				6		
Link Speed (mph)			30			30				30		
Link Distance (ft)			1049			279				493		
Travel Time (s)			23.8			6.3				11.2		
Confl. Peds. (#/hr)	57	64		29	29		64	29	57		50	64
Confl. Bikes (#/hr)				1						6	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	13%	3%	2%	2%	0%	0%	3%	1%	0%	0%
Parking (#/hr)										0		
Adj. Flow (vph)	10	87	137	504	54	150	20	4	327	105	15	3
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	284	454	0	224	0	0	331	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)			10			10				22		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.19	1.14	1.14	1.14	1.19	1.19	1.36	1.19	1.19
Turning Speed (mph)	9	15		9	15		9	9	15		9	9
Number of Detectors			1	1		1			1	1		
Detector Template												
Leading Detector (ft)			50	50		50			50	50		
Trailing Detector (ft)			0	0		0			0	0		
Detector 1 Position(ft)			0	0		0			0	0		
Detector 1 Size(ft)			50	50		50			50	50		
Detector 1 Type			Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Queue (s)			0.0	0.0		0.0			0.0	0.0		
Detector 1 Delay (s)			0.0	0.0		0.0			0.0	0.0		
Turn Type	Split	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm
Protected Phases	1	1	1	1	6	6			2	2		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	4	731	23
Future Volume (vph)	4	731	23
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	11	11	11
Storage Length (ft)	0		0
Storage Lanes	0		0
Taper Length (ft)	0		
Lane Util. Factor	0.95	0.95	0.95
Ped Bike Factor		0.99	
Frt		0.996	
Flt Protected			
Satd. Flow (prot)	0	3101	0
Flt Permitted			
Satd. Flow (perm)	0	3094	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		2	
Link Speed (mph)		30	
Link Distance (ft)		372	
Travel Time (s)		8.5	
Confl. Peds. (#/hr)	50		57
Confl. Bikes (#/hr)			6
Peak Hour Factor	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	6%
Parking (#/hr)			
Adj. Flow (vph)	4	746	23
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	776	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		80	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.19	1.19	1.19
Turning Speed (mph)	15		9
Number of Detectors		1	
Detector Template			
Leading Detector (ft)		50	
Trailing Detector (ft)		0	
Detector 1 Position(ft)		0	
Detector 1 Size(ft)		50	
Detector 1 Type		Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)		0.0	
Detector 1 Queue (s)		0.0	
Detector 1 Delay (s)		0.0	
Turn Type	Split	NA	
Protected Phases	5	5	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Permitted Phases								2				5
Detector Phase	1	1	1	1	6	6		2	2	2		5
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0		8.0
Minimum Split (s)	23.5	23.5	23.5	23.5	17.0	17.0		25.5	25.5	25.5		21.0
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%
Maximum Green (s)	28.5	28.5	28.5	28.5	8.0	8.0		17.5	17.5	17.5		19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		4.5	4.5	4.5		3.5
All-Red Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.0	5.0	5.0		5.5
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0		
Total Lost Time (s)			7.5	7.5		7.0			7.5	7.5		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		None	None	None		None
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0	7.0		7.0
Flash Don't Walk (s)	3.0	3.0	3.0	3.0				4.5	4.5	4.5		1.5
Pedestrian Calls (#/hr)	10	10	10	10				0	0	0		10
Act Effct Green (s)			30.5	30.5		10.0			19.5	19.5		
Actuated g/C Ratio			0.28	0.28		0.09			0.18	0.18		
v/c Ratio			0.37	0.86		0.79			2.93	0.47		
Control Delay (s/veh)			31.1	33.4		68.0			912.8	74.3		
Queue Delay			0.0	0.6		0.0			0.0	0.0		
Total Delay (s/veh)			31.1	33.9		68.0			912.8	74.3		
LOS			C	C		E			F	E		
Approach Delay (s/veh)			32.9			68.0				689.7		
Approach LOS			C			E				F		
Queue Length 50th (ft)			90	159		81			~217	87		
Queue Length 95th (ft)			136	#381		#145			#319	153		
Internal Link Dist (ft)			969			199				413		
Turn Bay Length (ft)				150								
Base Capacity (vph)			774	529		283			113	256		
Starvation Cap Reductn			0	0		0			0	0		
Spillback Cap Reductn			0	7		0			0	0		
Storage Cap Reductn			0	0		0			0	0		
Reduced v/c Ratio			0.37	0.87		0.79			2.93	0.47		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.93			
Intersection Signal Delay (s/veh): 227.0		Intersection LOS: F	
Intersection Capacity Utilization 90.7%		ICU Level of Service E	
Analysis Period (min) 15			

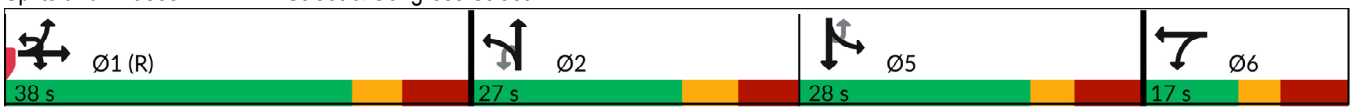


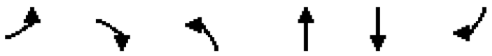
Lane Group	SBL	SBT	SBR
Permitted Phases			
Detector Phase	5	5	
Switch Phase			
Minimum Initial (s)	8.0	8.0	
Minimum Split (s)	21.0	21.0	
Total Split (s)	28.0	28.0	
Total Split (%)	25.5%	25.5%	
Maximum Green (s)	19.0	19.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	5.5	5.5	
Lost Time Adjust (s)		-2.0	
Total Lost Time (s)		7.0	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	2.0	
Recall Mode	None	None	
Walk Time (s)	7.0	7.0	
Flash Don't Walk (s)	1.5	1.5	
Pedestrian Calls (#/hr)	10	10	
Act Effct Green (s)		21.0	
Actuated g/C Ratio		0.19	
v/c Ratio		1.31	
Control Delay (s/veh)		187.4	
Queue Delay		1.3	
Total Delay (s/veh)		188.7	
LOS		F	
Approach Delay (s/veh)		188.7	
Approach LOS		F	
Queue Length 50th (ft)		~373	
Queue Length 95th (ft)		#498	
Internal Link Dist (ft)		292	
Turn Bay Length (ft)			
Base Capacity (vph)		593	
Starvation Cap Reductn		0	
Spillback Cap Reductn		90	
Storage Cap Reductn		0	
Reduced v/c Ratio		1.54	

Intersection Summary

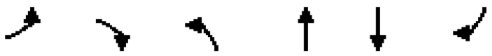
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: D Street & Congress Street





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	144	432	808	485	
Future Volume (vph)	0	0	144	432	808	485	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	9	11	10	10	
Storage Length (ft)	0	0	180			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	0		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.98		0.95		
Frt					0.944		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1419	3049	2699	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1396	3049	2699	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					130		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			338	493		
Travel Time (s)	7.9			7.7	11.2		
Confl. Peds. (#/hr)			69			69	
Confl. Bikes (#/hr)						13	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	3%	3%	2%	0%	
Adj. Flow (vph)	0	0	152	455	851	511	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	152	455	1362	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			24	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.30	1.19	1.25	1.25	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	0		1	1	1		
Detector Template							
Leading Detector (ft)	0		50	50	50		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			50	50	50		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Turn Type			Prot	NA	NA		
Protected Phases			4	1	1		2
Permitted Phases							

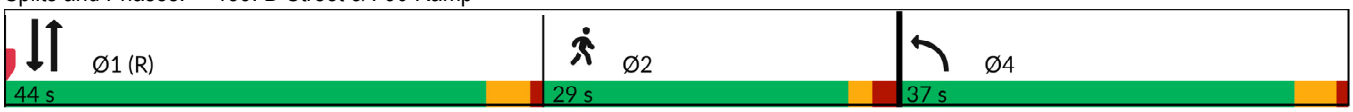


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Detector Phase			4	1	1		
Switch Phase							
Minimum Initial (s)			8.0	15.0	15.0		1.0
Minimum Split (s)			13.5	19.5	19.5		29.0
Total Split (s)			37.0	44.0	44.0		29.0
Total Split (%)			33.6%	40.0%	40.0%		26%
Maximum Green (s)			32.5	39.5	39.5		25.0
Yellow Time (s)			3.5	3.5	3.5		2.0
All-Red Time (s)			1.0	1.0	1.0		2.0
Lost Time Adjust (s)			-2.0	-2.0	-2.0		
Total Lost Time (s)			2.5	2.5	2.5		
Lead/Lag				Lead	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0	2.0		2.0
Recall Mode			None	C-Max	C-Max		Ped
Walk Time (s)							7.0
Flash Don't Walk (s)							18.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			18.3	57.7	57.7		
Actuated g/C Ratio			0.17	0.52	0.52		
v/c Ratio			0.65	0.28	0.92		
Control Delay (s/veh)			54.7	16.1	23.1		
Queue Delay			0.0	0.5	13.5		
Total Delay (s/veh)			54.7	16.6	36.5		
LOS			D	B	D		
Approach Delay (s/veh)				26.2	36.5		
Approach LOS				C	D		
Queue Length 50th (ft)			104	92	244		
Queue Length 95th (ft)			163	146	m206		
Internal Link Dist (ft)	266			258	413		
Turn Bay Length (ft)			180				
Base Capacity (vph)			445	1599	1478		
Starvation Cap Reductn			0	731	136		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.34	0.52	1.01		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 94 (85%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 33.3		Intersection LOS: C	
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 159: D Street & I-90 Ramp





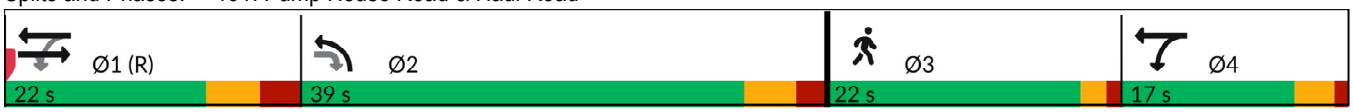
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	123	408	42	267	187	42	
Future Volume (vph)	123	408	42	267	187	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	10	11	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95	
Ped Bike Factor					1.00		
Frt		0.850			0.973		
Flt Protected			0.950		0.961		
Satd. Flow (prot)	1701	1561	1631	1685	3114	0	
Flt Permitted			0.673		0.961		
Satd. Flow (perm)	1701	1561	1155	1685	3114	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		439			30		
Link Speed (mph)	35			35	30		
Link Distance (ft)	454			464	351		
Travel Time (s)	8.8			9.0	8.0		
Confl. Peds. (#/hr)						4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	8%	0%	7%	9%	3%	2%	
Adj. Flow (vph)	132	439	45	287	201	45	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	132	439	45	287	246	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	20		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.04	1.04	1.04	1.04	1.09	1.04	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	2	1	1	2	1		
Detector Template	Thru	Right	Left	Thru	Left		
Leading Detector (ft)	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	6			6			
Detector 2 Type	Cl+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	custom	D.P+P	NA	Prot		
Protected Phases	1		4	4 1	2		3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Permitted Phases		1 2	1		2		
Detector Phase	1	1 2	4	4 1	2		
Switch Phase							
Minimum Initial (s)	15.0		6.0		15.0		4.0
Minimum Split (s)	22.0		10.0		21.0		22.0
Total Split (s)	22.0		17.0		39.0		22.0
Total Split (%)	22.0%		17.0%		39.0%		22%
Maximum Green (s)	15.0		13.0		33.0		19.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	3.0		1.0		2.0		1.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0		
Total Lost Time (s)	5.0		2.0		4.0		
Lead/Lag	Lead		Lag		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	C-Max		None		None		None
Walk Time (s)							7.0
Flash Don't Walk (s)							12.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	58.9	80.4	74.6	76.6	17.4		
Actuated g/C Ratio	0.59	0.80	0.75	0.77	0.17		
v/c Ratio	0.13	0.33	0.05	0.22	0.43		
Control Delay (s/veh)	10.3	1.0	3.1	3.9	34.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	10.3	1.0	3.1	3.9	34.7		
LOS	B	A	A	A	C		
Approach Delay (s/veh)	3.1			3.8	34.7		
Approach LOS	A			A	C		
Queue Length 50th (ft)	36	0	6	44	65		
Queue Length 95th (ft)	77	19	15	77	102		
Internal Link Dist (ft)	374			384	271		
Turn Bay Length (ft)							
Base Capacity (vph)	1002	1535	951	1289	1109		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.13	0.29	0.05	0.22	0.22		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay (s/veh): 10.1		Intersection LOS: B	
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 191: Pump House Road & Haul Road



Intersection	
Intersection Delay, s/veh	23.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	292	175	71	155	20	0	0	0	72	328	13
Future Vol, veh/h	13	292	175	71	155	20	0	0	0	72	328	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	3	1	0	3	10	0	0	0	3	0	25
Mvmt Flow	14	311	186	76	165	21	0	0	0	77	349	14
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	26.6	14.4	24.7
HCM LOS	D	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	29%	17%
Vol Thru, %	61%	63%	79%
Vol Right, %	36%	8%	3%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	480	246	413
LT Vol	13	71	72
Through Vol	292	155	328
RT Vol	175	20	13
Lane Flow Rate	511	262	439
Geometry Grp	1	1	1
Degree of Util (X)	0.79	0.456	0.741
Departure Headway (Hd)	5.572	6.278	6.068
Convergence, Y/N	Yes	Yes	Yes
Cap	643	578	593
Service Time	3.668	4.278	4.156
HCM Lane V/C Ratio	0.795	0.453	0.74
HCM Control Delay, s/veh	26.6	14.4	24.7
HCM Lane LOS	D	B	C
HCM 95th-tile Q	7.7	2.4	6.4

Intersection	
Intersection Delay, s/veh	21.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	394	0	0	160	34	47	14	26	321	0	39
Future Vol, veh/h	28	394	0	0	160	34	47	14	26	321	0	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	2	0	0	1	3	2	7	0	0	0	5
Mvmt Flow	30	428	0	0	174	37	51	15	28	349	0	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	27.4	13.3	11.6	22.2
HCM LOS	D	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	7%	0%	89%
Vol Thru, %	16%	93%	82%	0%
Vol Right, %	30%	0%	18%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	422	194	360
LT Vol	47	28	0	321
Through Vol	14	394	160	0
RT Vol	26	0	34	39
Lane Flow Rate	95	459	211	391
Geometry Grp	1	1	1	1
Degree of Util (X)	0.183	0.778	0.375	0.687
Departure Headway (Hd)	6.961	6.108	6.407	6.323
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	592	561	571
Service Time	5.03	4.153	4.465	4.37
HCM Lane V/C Ratio	0.185	0.775	0.376	0.685
HCM Control Delay, s/veh	11.6	27.4	13.3	22.2
HCM Lane LOS	B	D	B	C
HCM 95th-tile Q	0.7	7.3	1.7	5.3

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	11	17	2	48	38	16	20	372	22
Future Vol, veh/h	0	0	0	11	17	2	48	38	16	20	372	22
Conflicting Peds, #/hr	0	0	0	10	0	8	33	0	8	8	0	33
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	4	3	0	0	0	0
Mvmt Flow	0	0	0	12	18	2	52	41	17	22	404	24

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	620	667	66	461	0	0	67	0	0
Stage 1	162	162	-	-	-	-	-	-	-
Stage 2	458	505	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	455	382	1003	1089	-	-	1548	-	-
Stage 1	872	768	-	-	-	-	-	-	-
Stage 2	641	544	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	419	0	992	1089	-	-	1539	-	-
Mov Cap-2 Maneuver	419	0	-	-	-	-	-	-	-
Stage 1	824	0	-	-	-	-	-	-	-
Stage 2	625	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v		3.99	0.36
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	800	-	-	-	86	-	-
HCM Lane V/C Ratio	0.048	-	-	-	0.014	-	-
HCM Ctrl Dly (s/v)	8.5	0	-	-	7.4	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	363	378	36	141	16	25
Future Vol, veh/h	363	378	36	141	16	25
Conflicting Peds, #/hr	0	30	30	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	1	0	4
Mvmt Flow	390	406	39	152	17	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	827	0	853	626
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.1	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	813	-	332	481
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	796	-	308	470
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.98	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	366	-
HCM Lane V/C Ratio	0.113	-	-	0.049	-
HCM Ctrl Dly (s/v)	15.4	-	-	9.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	3	0	73	347	13
Future Vol, veh/h	14	3	0	73	347	13
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	8	1	0
Mvmt Flow	16	3	0	81	386	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	475	394	401	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	552	660	1169	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	552	659	1168	-	-	-
Mov Cap-2 Maneuver	552	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.56	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1168	-	568	-	-
HCM Lane V/C Ratio	-	-	0.033	-	-
HCM Ctrl Dly (s/v)	0	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	364	0	0	215	0	26	0	58	0	0	2
Future Vol, veh/h	0	364	0	0	215	0	26	0	58	0	0	2
Conflicting Peds, #/hr	0	0	6	6	0	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	0	3	0	0	2	0	8	0	0	0	0	0
Mvmt Flow	0	409	0	0	242	0	29	0	65	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	-	-	-	0	652	651	410	652	651	243
Stage 1	-	-	-	-	-	-	409	409	-	242	242	-
Stage 2	-	-	-	-	-	-	243	242	-	410	409	-
Critical Hdwy	4.1	-	-	-	-	-	7.18	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.572	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1337	-	0	0	-	-	373	391	646	384	391	801
Stage 1	-	-	0	0	-	-	608	600	-	766	709	-
Stage 2	-	-	0	0	-	-	748	709	-	623	600	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1337	-	-	-	-	-	372	391	645	345	391	801
Mov Cap-2 Maneuver	-	-	-	-	-	-	372	391	-	345	391	-
Stage 1	-	-	-	-	-	-	608	600	-	766	709	-
Stage 2	-	-	-	-	-	-	745	709	-	559	600	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	12.53	9.51
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	372	645	1337	-	-	-	801
HCM Lane V/C Ratio	0.079	0.101	-	-	-	-	0.003
HCM Ctrl Dly (s/v)	15.5	11.2	0	-	-	-	9.5
HCM Lane LOS	C	B	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	0.3	0	-	-	-	0

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	6	186	12	36	6	9	16	8	3	217	7
Future Vol, veh/h	15	6	186	12	36	6	9	16	8	3	217	7
Conflicting Peds, #/hr	1	0	5	5	0	1	5	0	9	9	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	13	17	1	20	0	0	0	6	13	0	1	0
Mvmt Flow	16	7	204	13	40	7	10	18	9	3	238	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	312	309	252	304	309	32	251	0	0	35	0	0
Stage 1	254	254	-	51	51	-	-	-	-	-	-	-
Stage 2	58	55	-	253	258	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.67	6.21	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.67	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.153	3.309	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	620	581	789	614	609	1048	1326	-	-	1589	-	-
Stage 1	727	670	-	919	857	-	-	-	-	-	-	-
Stage 2	927	820	-	713	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	567	569	782	439	597	1040	1321	-	-	1578	-	-
Mov Cap-2 Maneuver	567	569	-	439	597	-	-	-	-	-	-	-
Stage 1	722	666	-	905	844	-	-	-	-	-	-	-
Stage 2	870	808	-	518	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.83	11.94	2.11	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	460	-	-	753	578	24	-	-
HCM Lane V/C Ratio	0.007	-	-	0.302	0.103	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	11.8	11.9	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	17	1	0
Future Vol, veh/h	0	0	0	17	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	18	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	20	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1635	-	1003	1089
Stage 1	-	-	-	-	1027	-
Stage 2	-	-	-	-	1009	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1635	-	1003	1089
Mov Cap-2 Maneuver	-	-	-	-	1003	-
Stage 1	-	-	-	-	1027	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	8.59
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1003	-	-	1635	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Ctrl Dly (s/v)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	9	182	33	11	0	32	3	15	2	1	10
Future Vol, veh/h	2	9	182	33	11	0	32	3	15	2	1	10
Conflicting Peds, #/hr	7	0	1	1	0	7	11	0	5	5	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	18	0	4	33	7	0	0	30
Mvmt Flow	2	10	196	35	12	0	34	3	16	2	1	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	107	115	18	96	112	23	23	0	0	24	0	0
Stage 1	22	22	-	85	85	-	-	-	-	-	-	-
Stage 2	85	93	-	11	27	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.23	7.1	6.68	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.327	3.5	4.162	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	877	779	1057	891	749	1059	1579	-	-	1603	-	-
Stage 1	1002	881	-	928	794	-	-	-	-	-	-	-
Stage 2	928	822	-	1015	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	828	748	1043	694	719	1049	1560	-	-	1597	-	-
Mov Cap-2 Maneuver	828	748	-	694	719	-	-	-	-	-	-	-
Stage 1	988	869	-	904	773	-	-	-	-	-	-	-
Stage 2	888	800	-	813	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.42	10.51	4.71	1.12
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	987	-	-	1021	700	234	-	-
HCM Lane V/C Ratio	0.022	-	-	0.203	0.068	0.001	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	9.4	10.5	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1243	23	18	744	7	22
Future Vol, veh/h	1243	23	18	744	7	22
Conflicting Peds, #/hr	0	84	3	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	13	0	4	14	0
Mvmt Flow	1308	24	19	783	7	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1417	0	1834	752
Stage 1	-	-	-	-	1405	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.1	-	7.08	6.9
Critical Hdwy Stg 1	-	-	-	-	6.08	-
Critical Hdwy Stg 2	-	-	-	-	6.08	-
Follow-up Hdwy	-	-	2.2	-	3.64	3.3
Pot Cap-1 Maneuver	-	-	487	-	59	357
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	459	-	53	336
Mov Cap-2 Maneuver	-	-	-	-	53	-
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.96	32.86
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	53	336	-	-	85	-
HCM Lane V/C Ratio	0.14	0.069	-	-	0.041	-
HCM Ctrl Dly (s/v)	84.2	16.5	-	-	13.2	0.7
HCM Lane LOS	F	C	-	-	B	A
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	51	3	76	315	6
Future Vol, veh/h	51	51	3	76	315	6
Conflicting Peds, #/hr	0	5	5	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	14	33	7	2	33
Mvmt Flow	55	55	3	83	342	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	441	357	355	0	-	0
Stage 1	352	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.43	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.497	-	-	-
Pot Cap-1 Maneuver	578	661	1051	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	573	655	1046	-	-	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.19	0.32	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	68	-	611	-	-
HCM Lane V/C Ratio	0.003	-	0.181	-	-
HCM Ctrl Dly (s/v)	8.5	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Appendix F

Coastal Engineering Analysis

WOODS HOLE GROUP FOR EARTH, FROM SPACE
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WOODSHOLEGROUP.COM

TECHNICAL MEMORANDUM

DATE: April 17, 2026

TO: Justin Kunz
Director, Development
Oxford Property Group
125 Summer St, Boston, MA 02110
Jkunz@oxfordproperties.com

TRANSMITTED VIA ELECTRONIC MAIL

RE: Oxford Property Group Project Flood Redirection Modeling

1. Introduction

Oxford Properties Group is advancing the redevelopment of the Reserved Channel site in South Boston, Massachusetts, as part of a long-term Master Plan to transform the area into a mixed-use, climate-resilient waterfront district. The project consists of multiple development phases that are expected to be implemented over several decades, with each phase contributing incrementally to improved site resilience and integration with the City of Boston's broader coastal flood defense strategy.

The project site is located along the Reserved Channel and is currently characterized by low-lying topography and highly impervious land cover, making it vulnerable to coastal flooding under both present-day and future conditions (Figure 1). Regional studies indicate that the site is exposed to flooding driven by storm surges, high tides, and projected sea level rise, with multiple flood pathways allowing water to propagate inland during coastal storm events. Under future climate scenarios, these risks are expected to increase in both frequency and severity.

To address these risks, the proposed design incorporates a series of resiliency measures focused on elevating the site, buildings, and critical infrastructure to target design flood elevations, while also maintaining connectivity with surrounding neighborhoods and regionally planned flood defense systems. These measures include phased site raising, re-grading of key corridors and waterfront areas, integration of floodproofing strategies, and enhancements to open space and stormwater management systems.

Given the scale and phased implementation of the project, it is important to evaluate how the proposed design influences coastal flooding behavior both within the project site and in surrounding areas. In particular, modifications to site topography and infrastructure may alter the pathways, extent, and characteristics of floodwater during storm events.

This technical memorandum presents an assessment of flood redirection associated with the proposed development, including all three phases. The analysis focuses on identifying changes in flood extent, flood depth (water surface elevations), and velocity and flow patterns between existing and project conditions. Specific focus is given to determining whether the project introduces any adverse impacts to adjacent properties.

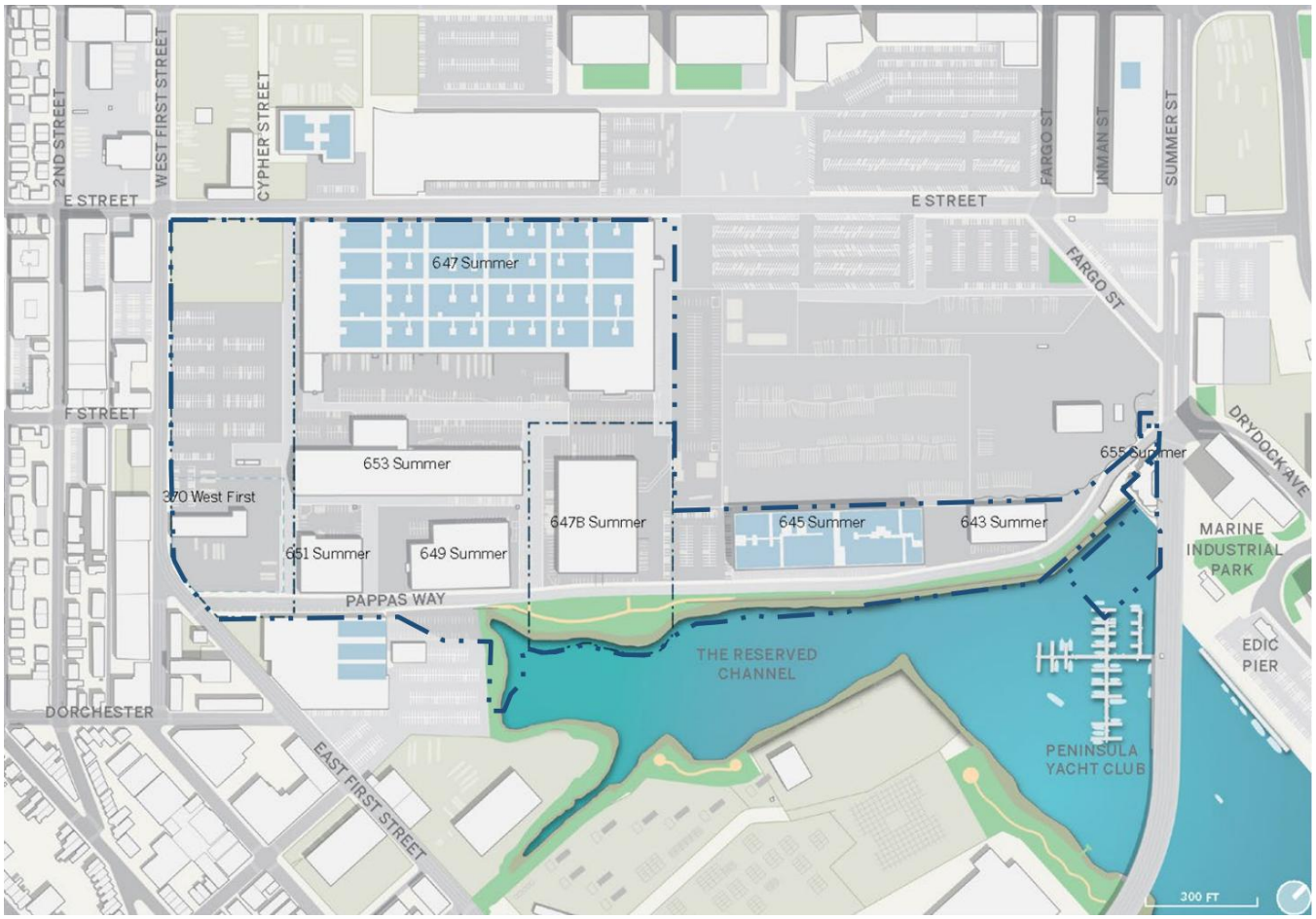


Figure 1 – Existing condition of the project site (Source: project design plan, Exhibit B).

2. Project Description and Design Overview

The Reserved Channel redevelopment is a multi-phase project that transforms an existing low-lying, impervious waterfront site into a mixed-use district with integrated flood resiliency measures. The development is implemented in three primary phases, each progressively modifying site grades, building elevations, and infrastructure to achieve target design elevations.

The primary resiliency approach consists of raising site grades, buildings, and key infrastructure elements to elevations informed by regional flood risk projections. Target Design Flood Elevations (DFE) are on the order of approximately 22 to 23 ft BCB (approximately 15.6 to 16.8 ft NAVD88), with Finished Floor Elevations (FFE) set above these levels and minimum site grades elevated across developable areas and circulation corridors. These

elevations are designed to align with anticipated City of Boston flood protection strategies and future climate conditions.

The grading strategy includes raising individual development blocks, establishing transitions between elevated site areas and adjacent streets, and reconfiguring roadway and waterfront elevations. Key corridors, including West First Street, F Street, and Pappas Way, incorporate graded transitions to connect existing infrastructure with proposed elevated conditions. In locations where grade differences are more abrupt, retaining walls are introduced to accommodate elevation changes between adjacent areas.

The phased implementation of the project is described below, focusing on the physical modifications to site elevations and infrastructure. Figure 2 illustrates the phased implementation of the project design compared to the existing conditions shown in Figure 1.

In Phase 1, buildings at 370 West First Street and 647B Summer Street are removed. The western and central portions of the site, including Blocks A, B, and C, are raised to target design elevations. This phase establishes the initial elevated areas of the site and introduces grade transitions along adjacent streets and internal roadways. Tie-ins are constructed between the newly elevated blocks and existing surrounding infrastructure, particularly along West First Street and F Street, to maintain access and continuity. Retaining walls are incorporated in select locations to facilitate transitions between elevated blocks and existing grades. Building finished floor elevations are set above the design flood elevation.

In Phase 2, all existing buildings within the project site are removed except for 647 Summer Street. Elevated grades are extended eastward and along the waterfront to additional development blocks, including Blocks D, F, I, and J. This phase continues the elevation of site surfaces and expands the extent of graded connections between previously elevated areas. Roadways and waterfront areas, including portions of Pappas Way, are raised to align with the evolving site grading strategy, with additional tie-ins constructed to connect Phase 1 and Phase 2 improvements. Retaining walls continue to be used where needed to accommodate elevation differences. This phase also includes advancement of the waterfront edge into the Reserved Channel, resulting in a modified shoreline configuration and regraded waterfront interface.

In Phase 3, the 647 Summer building is removed, and the remaining development areas are raised and connected to form a continuous elevated surface across the site. This phase completes the grading framework, with all development blocks and connecting corridors elevated to target design levels. Final tie-ins are constructed between all phases, establishing a continuous surface across the site and fully integrated connections to adjacent infrastructure. Building elevations are finalized to meet long-term design criteria.

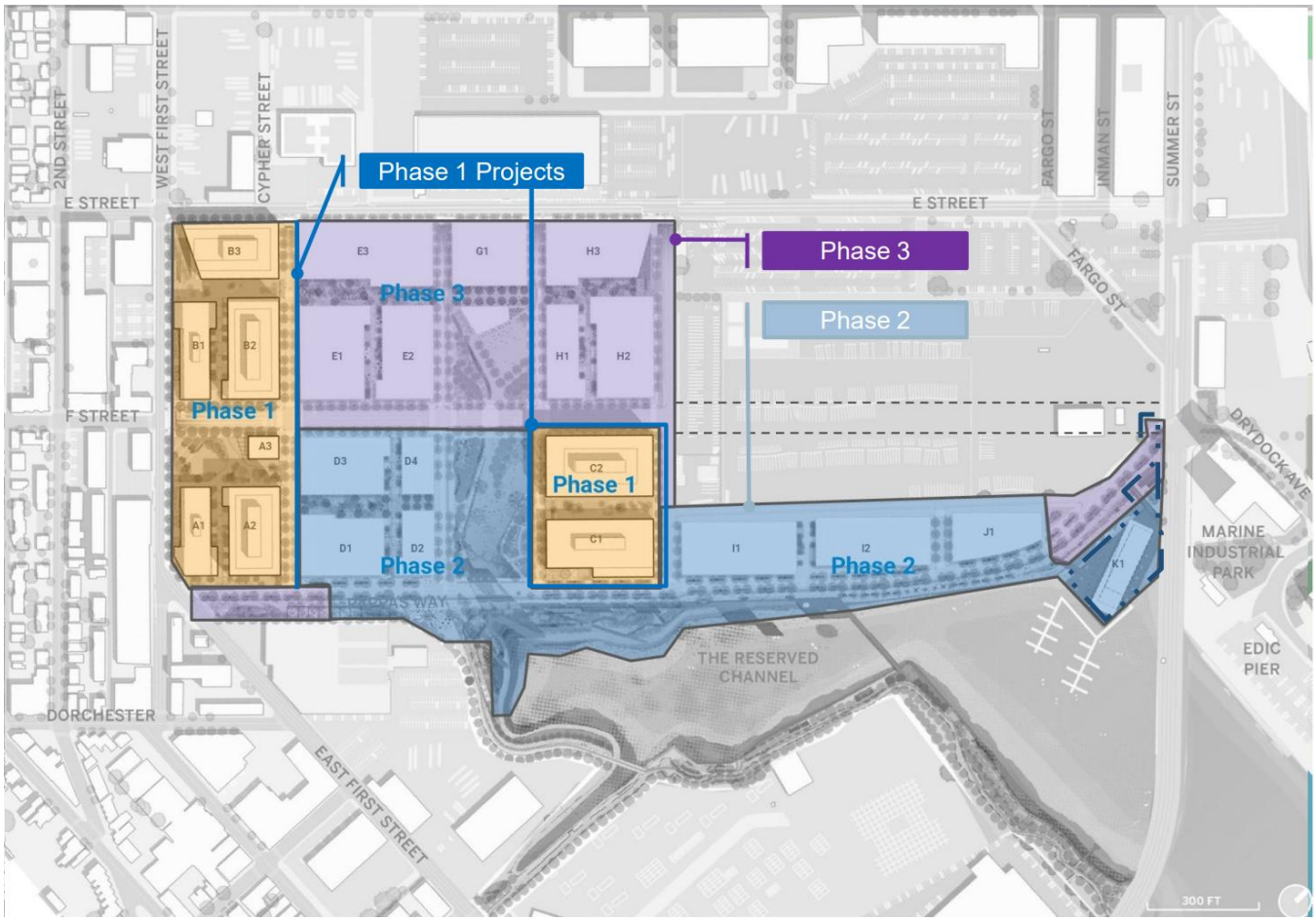


Figure 2 – Proposed Phase 1, Phase 2, and full build plan or Phase 3 of Oxford Property project (Source: the project design plan, Exhibit B).

3. Modeling Approach and Setup

3.1. Coastal Flood Performance Model

A hydrodynamic modeling analysis was completed to assess any potential flooding changes (flood extent and flood depth), and changes in flood velocity (redirection and concentration of flood flows) associated with the Oxford Properties redevelopment project. Since the project is located within Land Subject to Coastal Storm Flowage under present day conditions and is facing growing flood exposure and risk under changing climate conditions, it was important to determine if the potential project, including the changed topography at the site, influenced hydrodynamic flow processes and patterns of coastal flood waters, especially on adjacent properties. Specifically, this evaluation considered impacts of the proposed design on flood extents, flood depths and velocities at the subject parcel and at neighboring properties that may occur during potential coastal storm events both now and into the future.

The site-specific hydrodynamic modeling effort is built upon the Massachusetts Coast Flood Risk Model (MC-FRM). The MC-FRM is a high resolution, probabilistic hydrodynamic model that evaluates coastal flood risks under present and future climate conditions. The model was built using a two-way coupled version of Advanced

Circulation (ADCIRC) and Unstructured Simulating Waves Nearshore (UnSWAN) models. The model simulated the dynamic flow of water by varying winds, waves and currents that occur during extreme coastal storm events including flow overland with varying topography and frictional elements. The MC-FRM-produced data products for coastal Massachusetts that can be used to understand coastal flood risk on a regional level. The MC-FRM uses state standard sea level rise projections (following a high emissions scenario) as provided by ResilientMass (https://resilient.mass.gov/).

The MC-FRM is regularly used to assess the performance of various flood mitigation measures (e.g., dam modifications, coastal barriers, living seawalls, levees, berms, seawalls, land regrading, etc.) and can evaluate flow diversions and changes in flood risk at a high-resolution. However, while the MC-FRM is a high-resolution model, it does not explicitly account for the three-dimensional nature of buildings, flow diversions and concentration of velocities around these structures. In cases where flow around buildings is required, the MC-FRM platform also consists of various sub-models that integrate the actual structures into the model domain to account for the flow dynamics associated with these features. These sub-models also allow for an even higher resolution (less than 5-10 feet) to represent individual structures, buildings, landscape features, and grading changes.

A high-resolution sub-model was created using physical processes data from the MC-FRM model, as well as updated site-specific contour and design plans for the Oxford Property project to define the site elevations and features. To perform the sub-modeling, a local, site-specific grid was developed that accounts for processes occurring at spatial scales smaller than the main computational grid (MC-FRM grid). It is important to note that while the high-resolution modeling approach captures street-level detail, stormwater infrastructure (e.g., catch basins, manholes, stormwater pipes, outfalls, etc.) are not included in the MC-FRM modeling and MC-FRM sub-modeling approach. The underlining digital elevation model (DEM) to create model elevations used the 2021 USGS Lidar DEM for Central Eastern Massachusetts (OCM Partners, 2026). The project phase elevations were incorporated into the phase-specific sub-models based on the project grading plans. All elevations in this memorandum are referenced to the North American Vertical Datum of 1988 (NAVD88) and are reported in feet (ft). The projected coordinate system for all model results is the Massachusetts Mainland State Plane 2011, also in units of feet. Elevations in the North American Vertical Datum of 1988 (NAVD 88) are converted to Boston City Base (BCB) by adding 6.46 feet. Existing structures were obtained from the MassGIS *Building Structures (2D)* dataset and were incorporated into the model to represent building footprints. Figure 3 presents the digital elevation models used in the analysis, including existing conditions (top left panel) and project phase conditions (top right and bottom panels).

3.2 Storm Selection

Once the existing and project phases models were set up, specific return period storms, under both present day and future climate horizons, were selected to simulate the coastal flood performance of the Oxford Property Project and compared to existing conditions. Storm scenarios were selected both from historic data (e.g., FEMA 100-year) and from MC-FRM (future storms). The storms were selected to evaluate a range of potential impacts on the proposed design (e.g., storms expected to overtop the design, storms expected to flank the design, etc.). Flood redirection modeling focuses on regulatory benchmarks and potential impacts to adjacent properties. As such, the FEMA Present-Day 100-year return period, 2050 0.2% Annual Exceedance Probability (AEP) or 500-year and 2070 2% AEP or 500-year events were selected to test conveyance and flanking pathways under moderate–high water levels. The future storm levels (2050 and 2070 0.2% Annual Exceedance Probability) were chosen based on the recommended design storm levels and climate horizons to consider from the Resilient Mass Action Teams (RMAT) Climate Resilience Design Standards Tool. The selected storm events evaluated in the flood redirection modeling, along with their corresponding peak stillwater elevations, are summarized in Table 1.

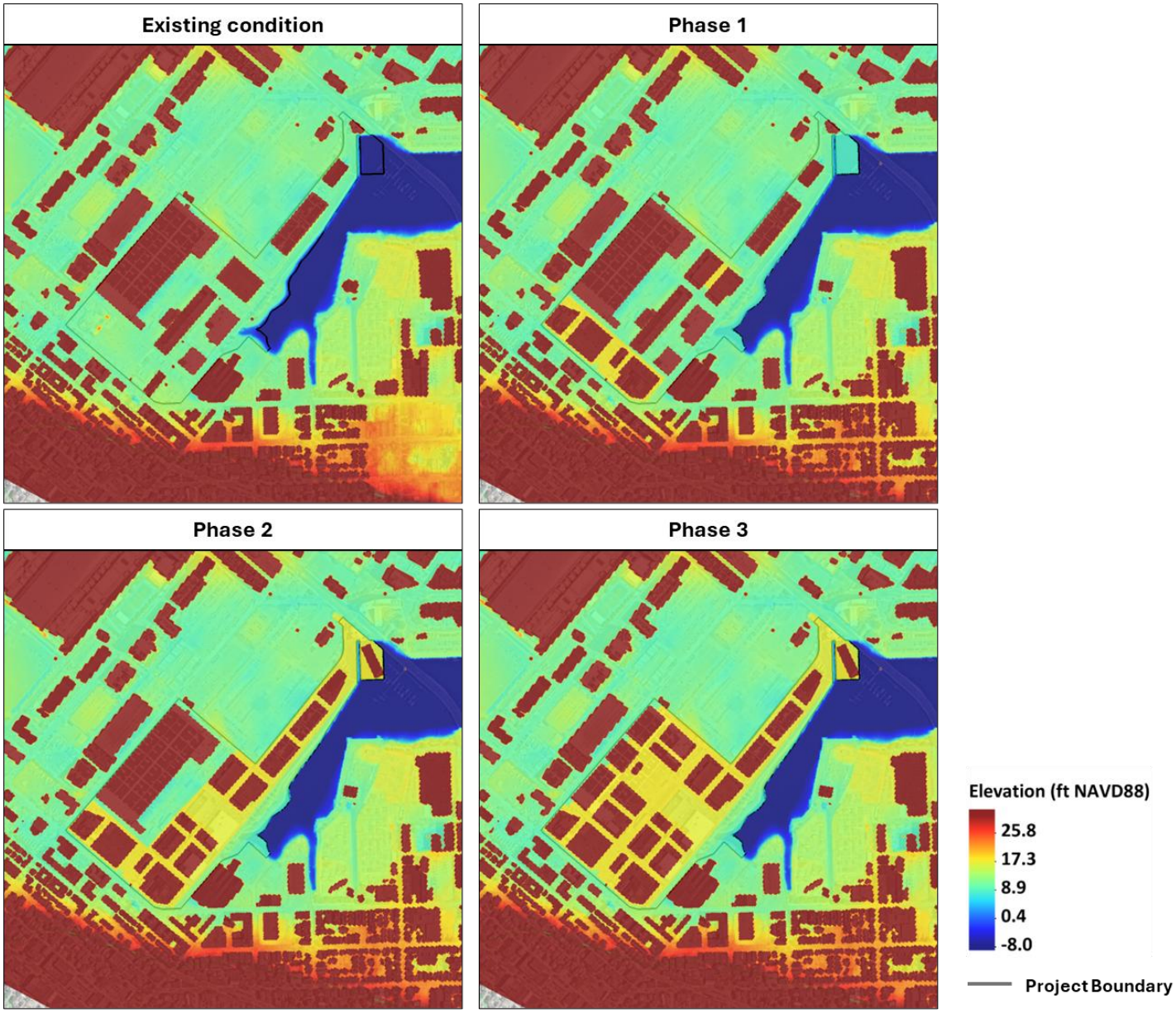


Figure 3 – Existing and project phase conditions contours applied to the sub-modeling grid (elevations shown in feet relative to NAVD88).

Table 1. Peak stillwater levels used in performance modeling.

Event Case (Return Period)	Year	Peak Stillwater Level (ft, NAVD88)
FEMA 1% AEP (100-year)	Present Day	10.2
2050 0.2% AEP (500-year)	2050	13.2
2070 0.2% AEP (500-year)	2070	15.1

Figure 4 presents the water level time series used as boundary conditions for these events and compares them to key site elevations under existing conditions and project phases. This comparison provides context for how storm-driven water levels relate to critical low-lying areas and higher-elevation features within the project site. The represents the water surface elevation boundary condition; however, a velocity boundary condition during the passage of each storm event was also included from the MC-FRM to account for the momentum associated with a coastal storm surge.

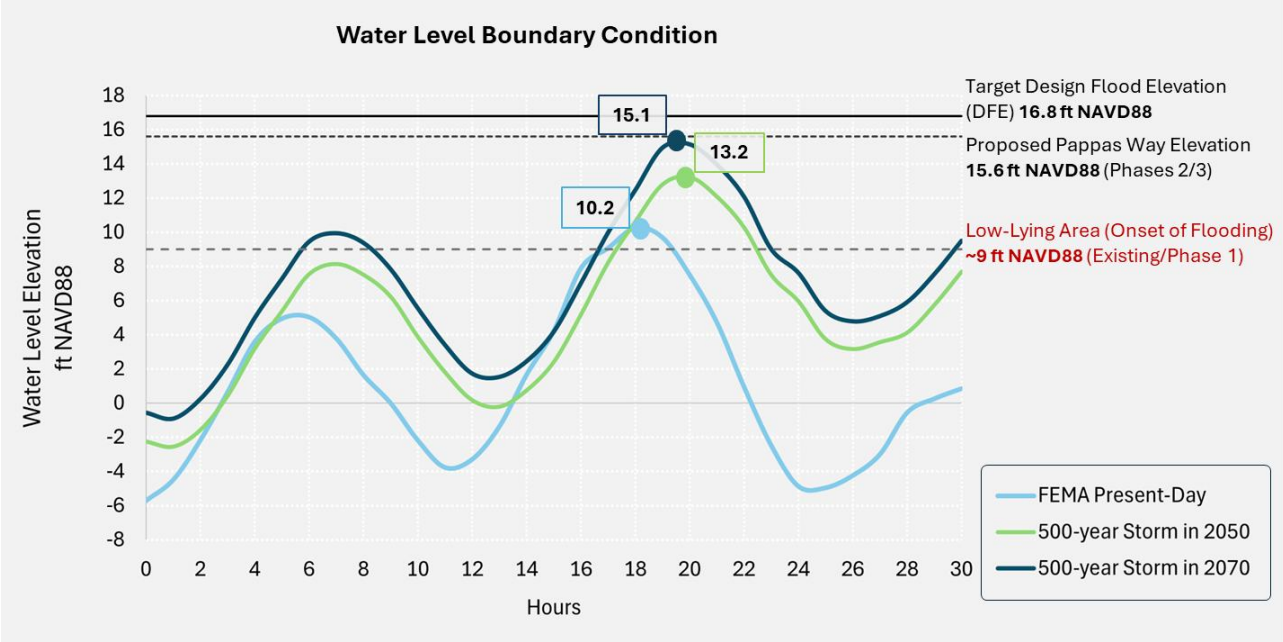


Figure 4 – Water level time series boundary conditions of the selected storms along with key site elevations under existing conditions and project phases.

4.0 Modeling Results

4.1 Changes to flood extent and depth

The flood extent results were evaluated for three storm scenarios representing present-day conditions and future climate conditions (2050 and 2070 0.2% AEP or 500-year storms). The results compare existing conditions to project phases to assess how the site responds to increasing water levels and how the proposed changes influence flood extents within the project site and adjacent areas. This analysis is intended to characterize the spatial extent of inundation under varying storm and sea level conditions, identify areas of persistence or increased flood exposure, and evaluate how the project phased implementation alters flood pathways and connectivity across the site. The results provide a basis for understanding the effectiveness of the project in managing flood risk and supporting resilient site design under both current and future conditions.

Figures 5 through 7 present flood extents for existing conditions (top left) and project phases (top right), along with the corresponding changes in flood extent (bottom) under the FEMA present-day storm scenario. Figures 8 through 10 and 11 through 13 present the results for the 2050 and 2070 0.2% AEP storm scenarios, respectively. In these figures, white arrows show key flood entry points of flooding onto the property and/or area. In the comparison figures (bottom panel), the existing flood extent is shown in blue, while the with project condition

flooding extent is shown as hatched area. As such, if every area is hatched blue then the existing and with project flood extent and depths are equivalent.

For the FEMA present-day scenario, flooding within the project site is limited and primarily confined to the eastern low-lying areas. In existing conditions, floodwater enters the site around the 645 Summer building and propagates along both sides of the structure, extending landward toward E Street. Floodwater also flanks the eastern edge of the project site along Summer Street, propagating toward Fargo Street and adjacent low-lying areas, and contributing to inundation along E Street. The western portion of the site remains dry due to its relatively higher ground elevations. The Phase 1 developments do not significantly alter this pattern. As a result, flood extents under Phase 1 remain the same as existing conditions.

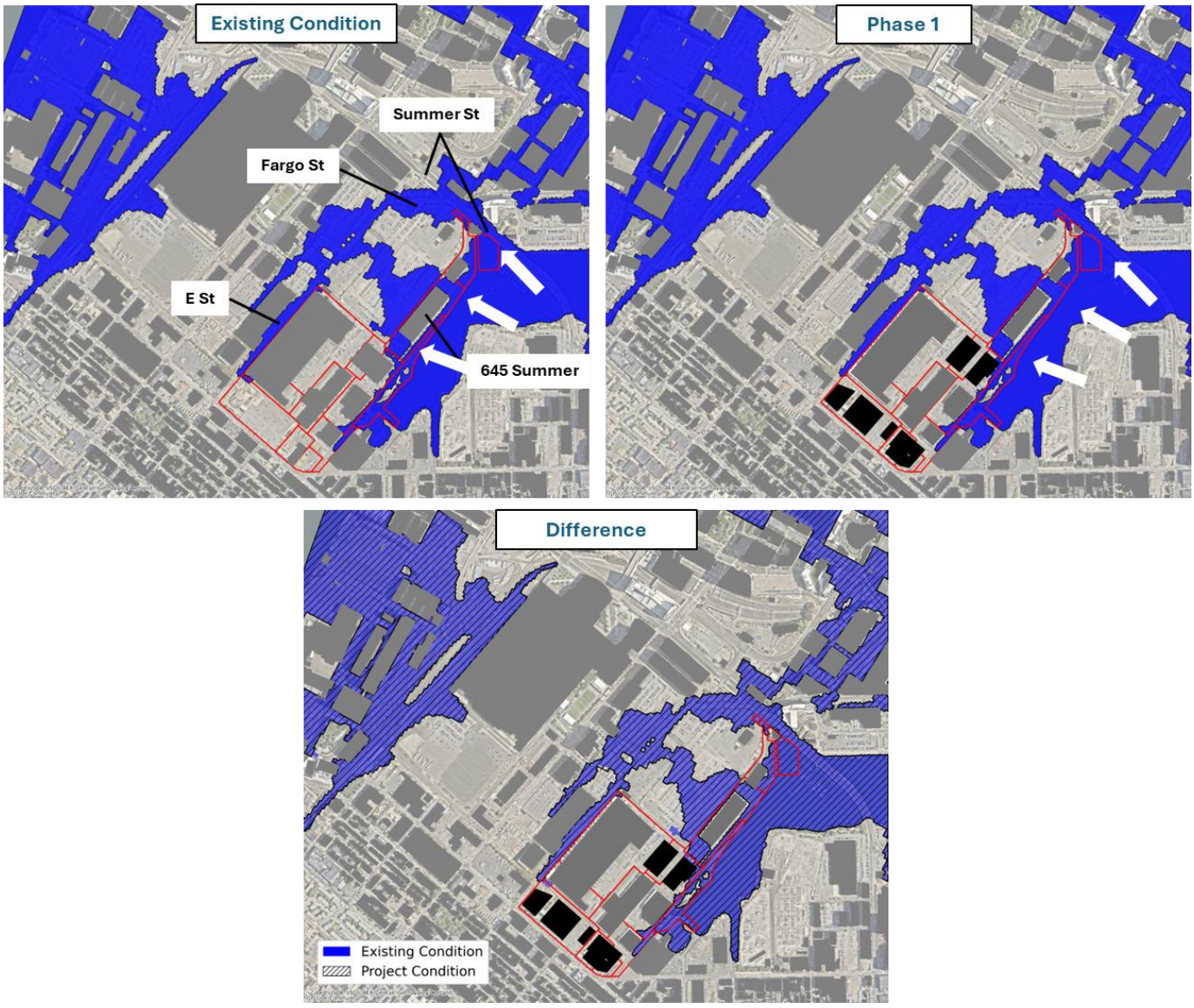


Figure 5 – Flood Extent under FEMA Present-Day 1% AEP for existing condition, project Phase 1, and comparison between the two results (bottom panel).

Development Phases 2 and 3 introduce more substantial modifications to site elevations, including along the shoreline fronting the Reserved Channel. These improvements raise grades and effectively block the primary flood pathway that currently exists around the 645 Summer building. As a result, flood extents are reduced in the open areas in the center of the project site. In these locations, the areas go from flooded to dry. The removal of the 647 Summer building in Phases 3 does not result in flood propagation into the project site through E Street, as the concurrent increase in ground elevation prevents flow through this corridor.

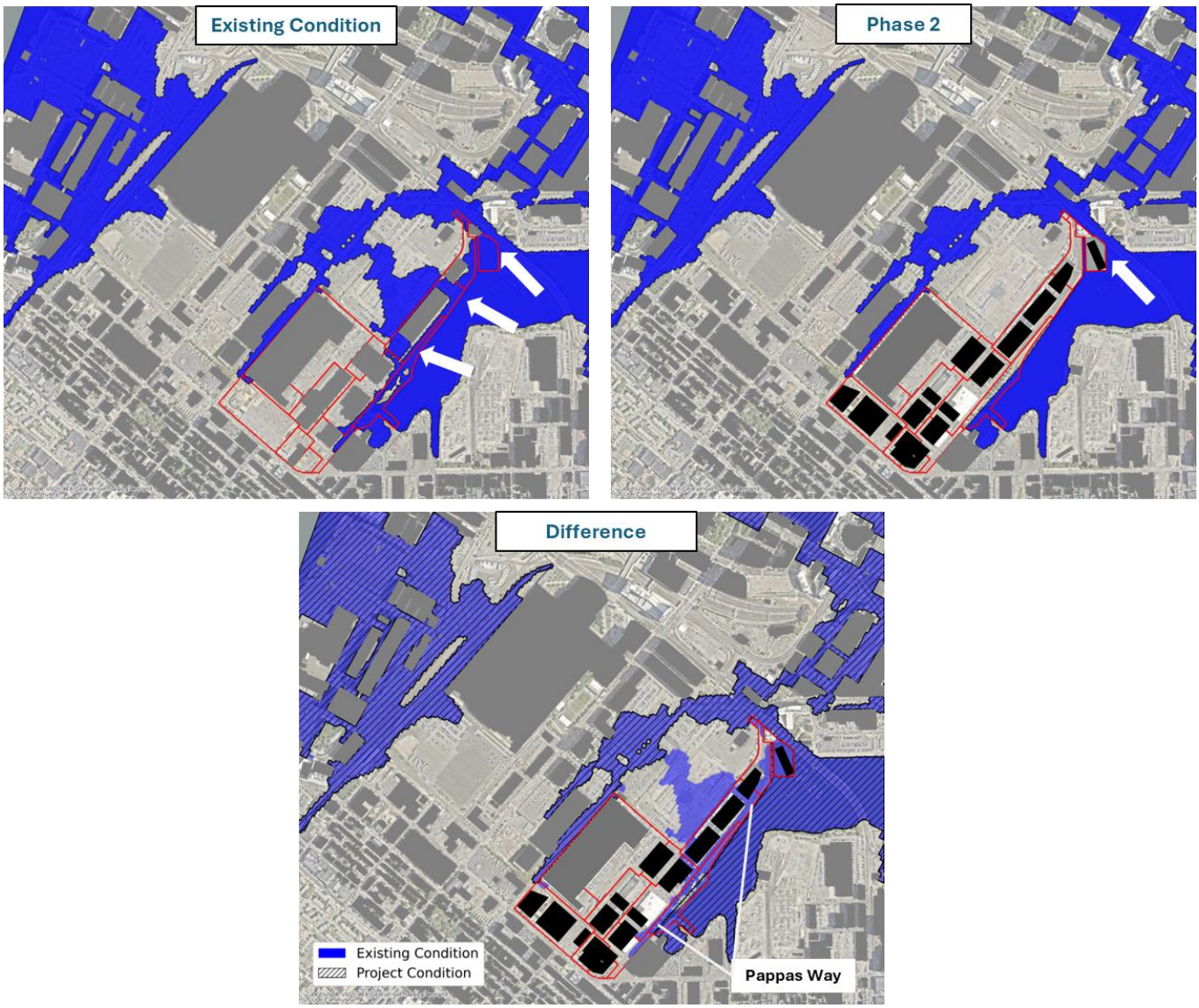


Figure 6 – Flood Extent under FEMA Present-Day 1% AEP for existing condition, project Phase 2, and comparison between the two results (bottom panel).

Additionally, Phases 2 and 3 include elevation increases along Pappas Way, the waterfront and areas of localized land extension into the channel. Under present-day water levels, these areas remain dry in the project phase

conditions, whereas they experience minor inundation under existing conditions. This results in localized reductions in flooding. Overall, under the present day 1% AEP level, the proposed development causes no change in the extent or depth of flooding on the property or on any adjacent property for the Phase 1 portion of the project and shows reduction of flooding on the property for the Phase 2 and 3 portions of the project. There are no changes in the flood extent or depth on any of the neighboring properties.

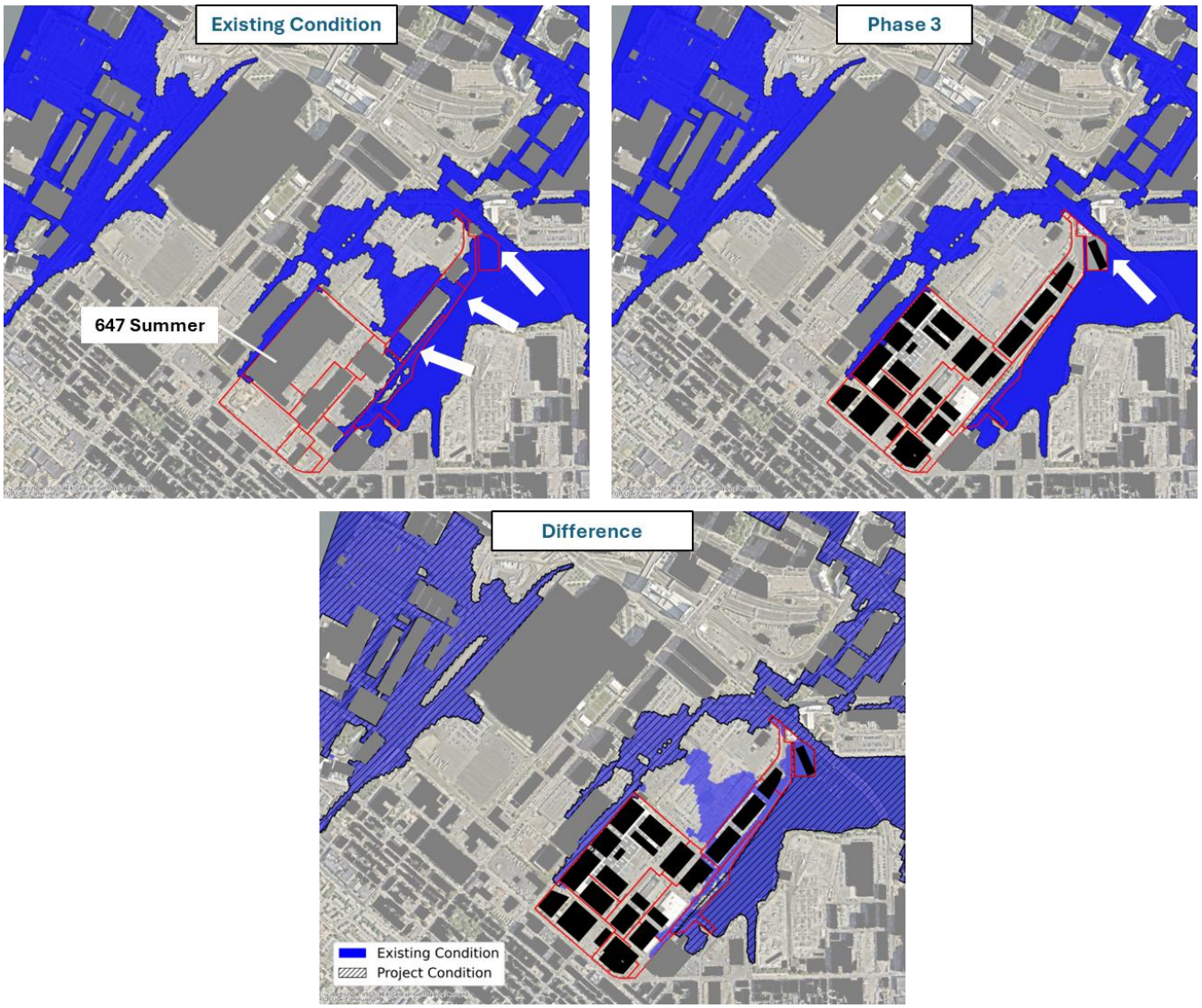


Figure 7 – Flood Extent under FEMA Present-Day for existing condition, project Phase 3, and comparison between the two results (bottom panel).

For the future 0.2% AEP scenario as soon as 2050, peak water levels reach approximately 13.1 ft NAVD88, resulting in widespread flooding across the project site and surrounding areas. Floodwaters enter the site from the Reserved Channel through several low-lying corridors, including those active under the FEMA present-day scenario, as well as through the western portion of the site from other flood entry points. Floodwaters also

inundate the surrounding areas and the project site from the Fort Point Channel to the northwest and Main Boston Harbor to the north (shown by white arrows in Figures 8 through 10). In existing conditions, the project site becomes fully inundated. Flooding extends across the eastern portion of the site and propagates into the central and western edges of the project site. With Phase 1 in place, portions of the property and new buildings were raised above flood levels (approximately 15.6 to 16.8 ft NAVD88). However, lower-lying areas between and around these improvements remain inundated. Phases 2 and 3 further expand the increased site elevations, which in turn result in removing more project site area from being inundated. For all phases, there is no change to the extent or depth of flooding off the property or in neighboring areas.

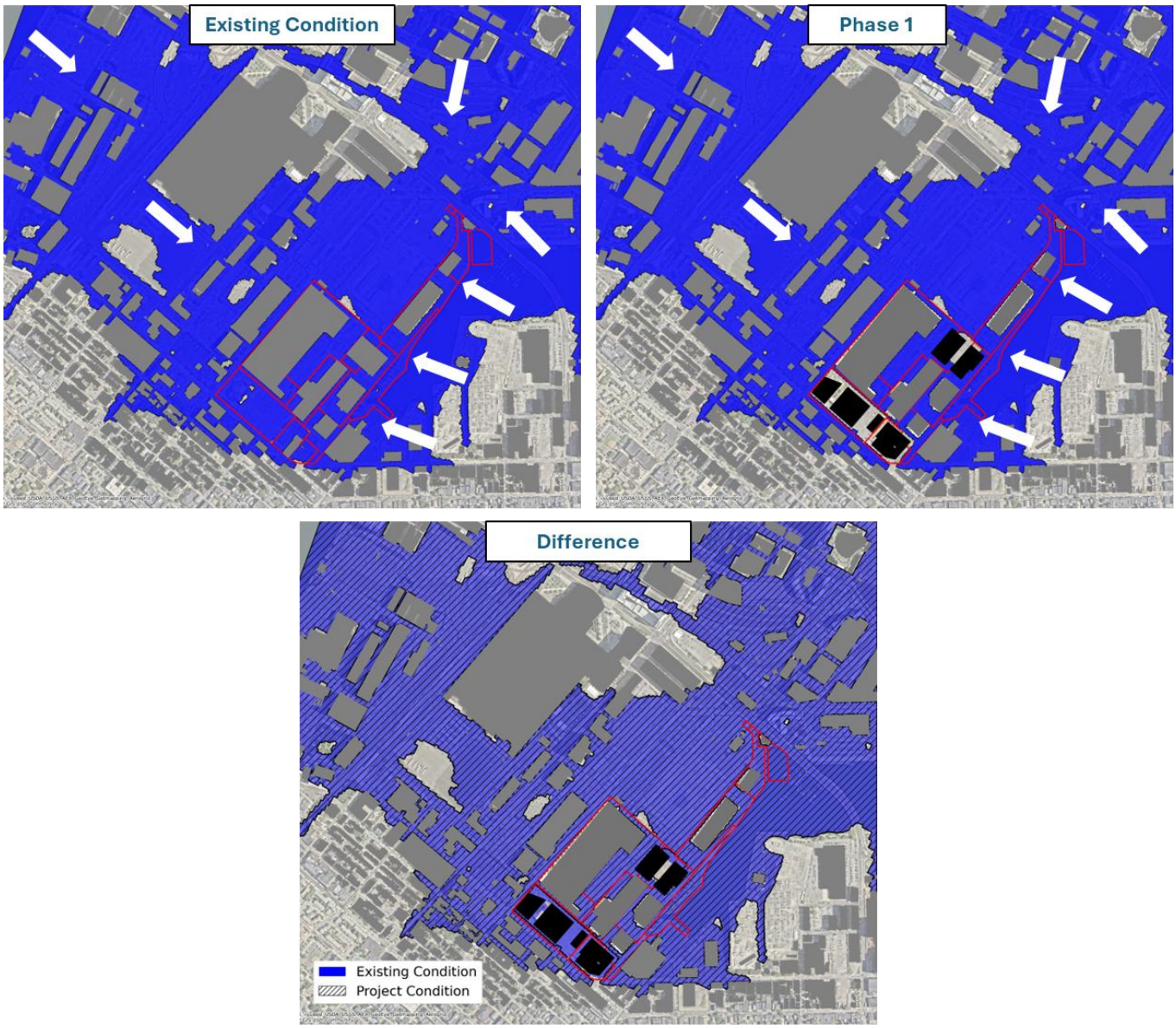


Figure 8 – Flood Extent under 500-year 2050 storm for existing condition, project Phase 1, and comparison between the two results (bottom panel).

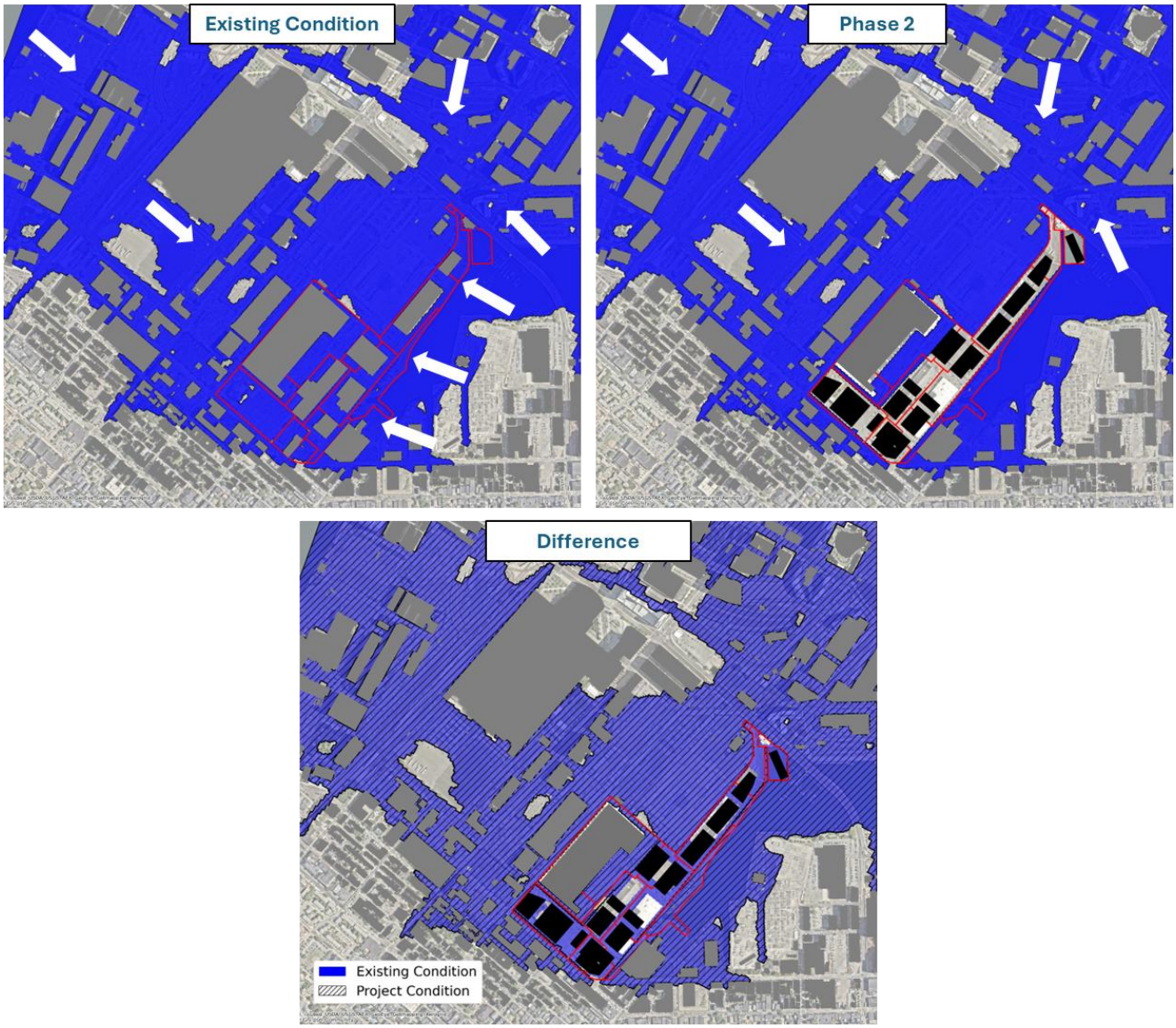


Figure 9 – Flood Extent under 500-year 2050 storm for existing condition, project Phase 2, and comparison between the two results (bottom panel).

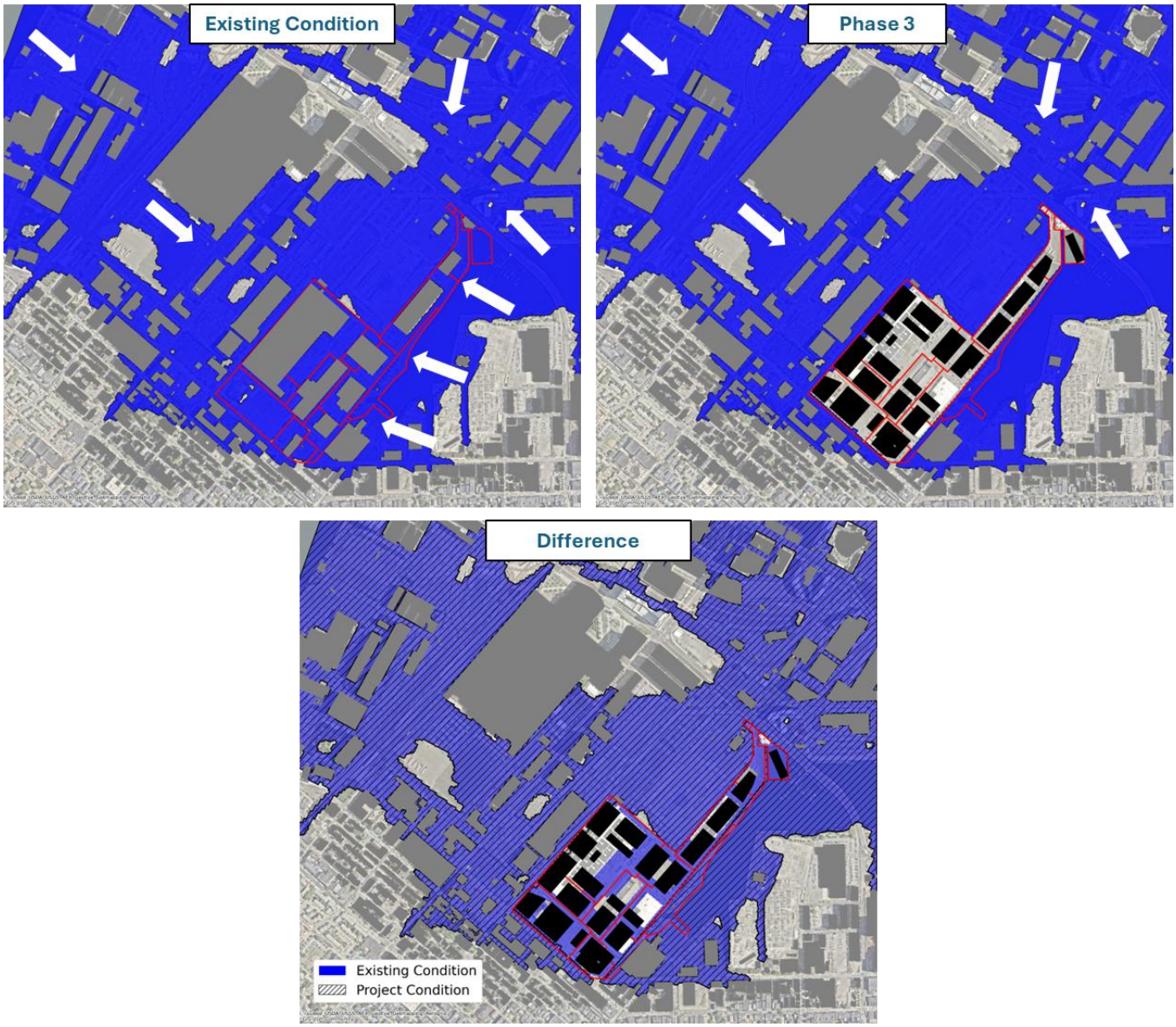


Figure 10 – Flood Extent under 500-year 2050 storm for existing condition, project Phase 3, and comparison between the two results (bottom panel).

Under the more severe 2070 500-year storm scenario, expanded flooding extents throughout the surrounding region, adjacent roadways, and nearby developed areas. Under existing conditions, the project site becomes fully flooded. Phase 1 provides some flood reduction, as the Phase 1 development areas are raised out of the flood level. Project Phases 2 and 3 perform similarly to the 2050 scenario. Because the elevated site grades and roadway elevations (approximately 15.6 to 16.8 ft NAVD88) remain above the projected water levels, the project site stays largely dry under Phases 2 and 3.

As for the 2050 0.2% AEP results, there is no change to the extent or depth of flooding off the property or in neighboring areas during any of the phases.

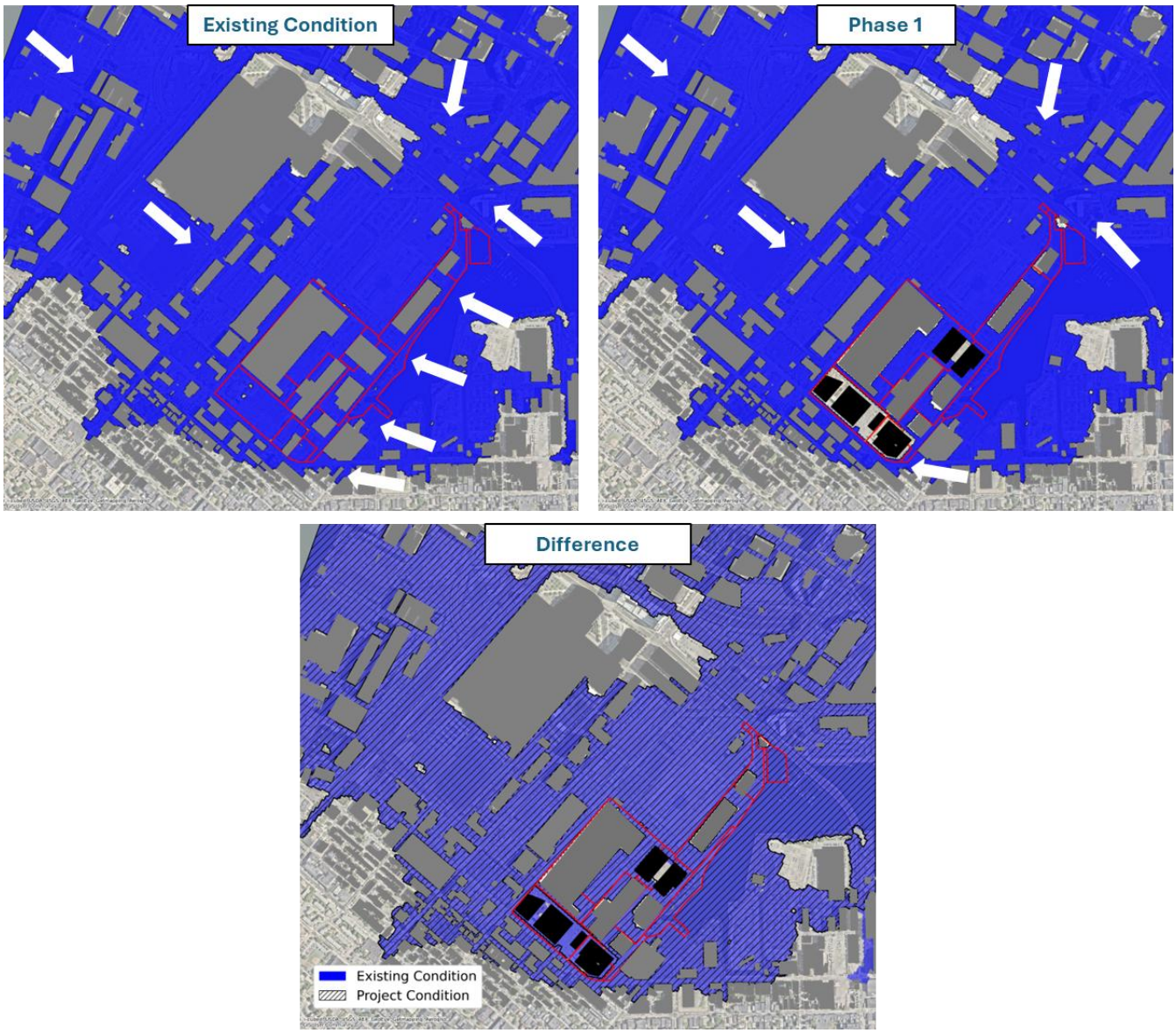


Figure 11 – Flood Extent under 500-year 2070 storm for existing condition, project Phase 1, and comparison between the two results (bottom panel).

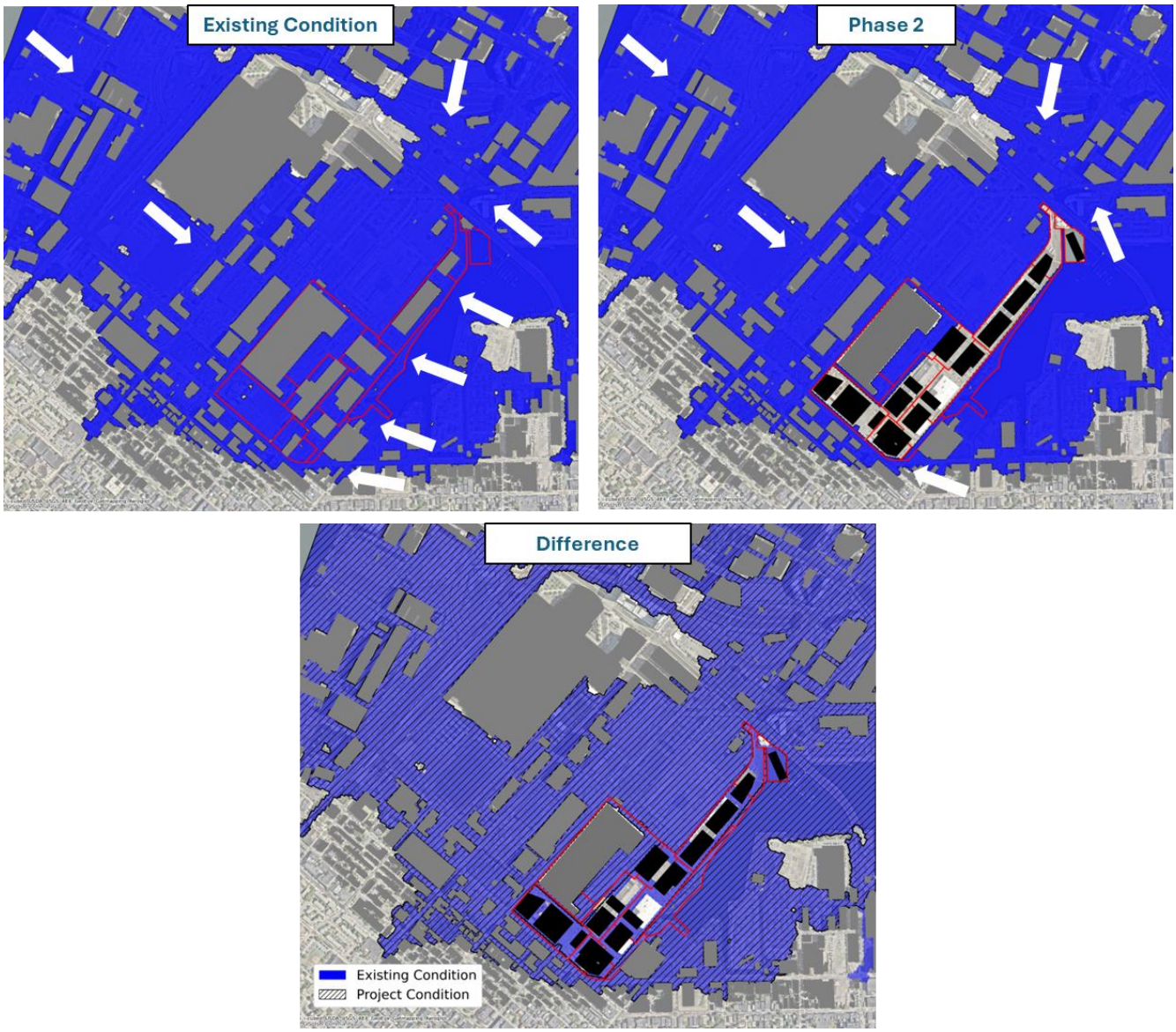


Figure 12 – Flood Extent under 500-year 2070 storm for existing condition, project Phase 2, and comparison between the two results (bottom panel).

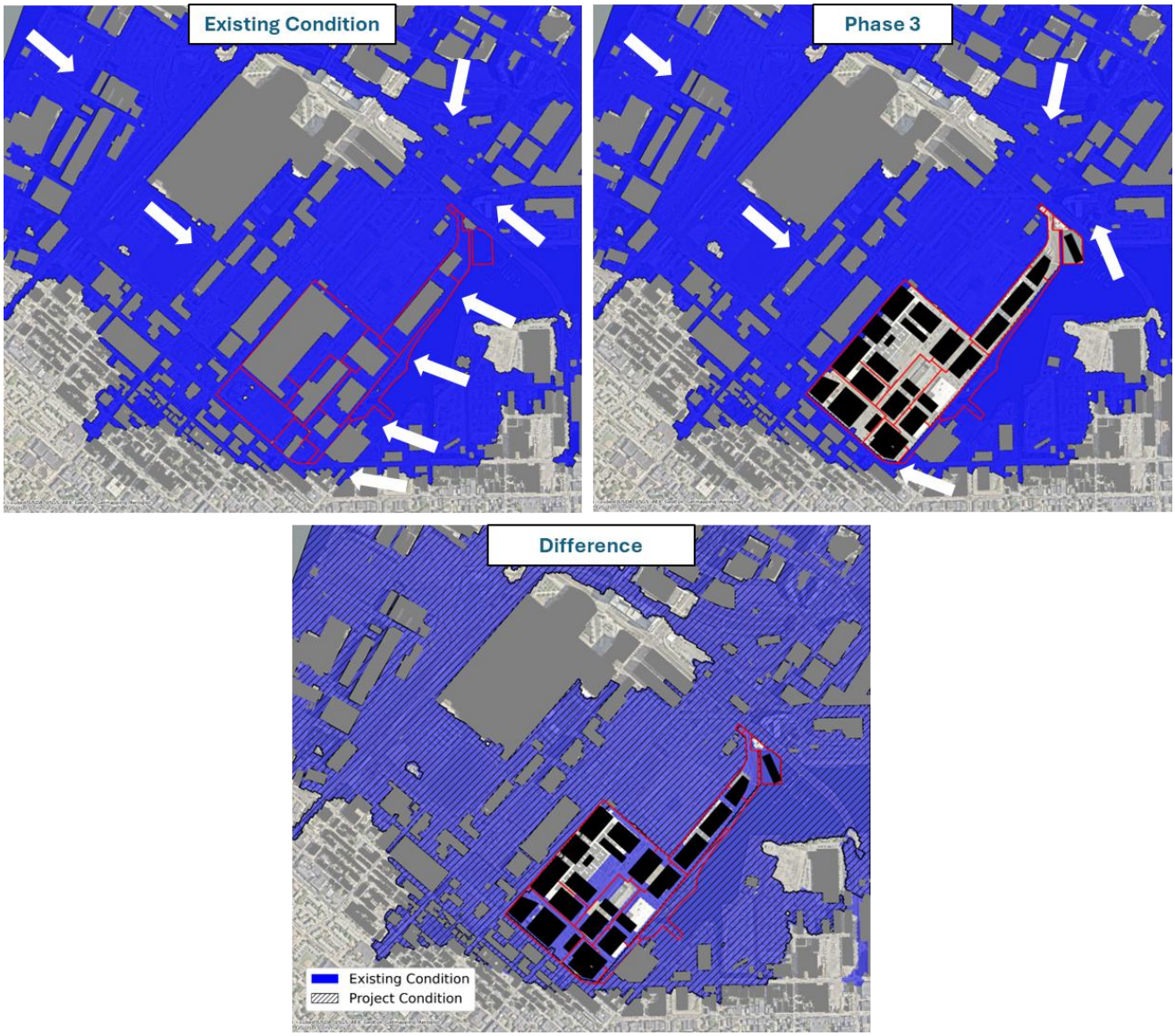


Figure 13 – Flood Extent under 500-year 2070 storm for existing condition, project Phase 3, and comparison between the two results (bottom panel).

4.2 Potential Changes to the Velocity of Flood Waters

As floodwaters move inland and interact with existing and proposed infrastructure, distinct flow patterns develop across the site. Both natural and engineered features can influence these patterns by redirecting flow, concentrating it along certain pathways, or reducing it in protected areas. In some cases, these changes may result in localized increases in flow velocity near barriers or along confined flow paths.

This section evaluates flood-induced velocity patterns, including flow magnitude and direction, under both existing conditions and project phases. The objective is to understand how the project influences flow behavior within the site and in adjacent areas, with particular attention to areas of flow concentration and potential off-site effects.

Figures 14 through 22 present snap shots of representative velocity fields during both the rising (incoming) and falling (receding) phases of the storm surge for the FEMA present-day, 2050 500-year, and 2070 500-year storm scenarios across the project phases. Each figure illustrates the general flow patterns during the incoming (top panels) and receding (bottom panels) stages during the passage of the storm event. Existing conditions are shown in the left panels, while project phases are shown in the right panels. The velocity vectors represent flow direction, and the underlying color contours indicate velocity magnitude (in feet per second). The vectors are based on a single representative timestep from the model simulation and are intended to illustrate typical flow behavior rather than the full temporal evolution of flooding. Smaller arrows indicate localized flow directions, while larger red arrows highlight the dominant movement of floodwaters toward and away from the project site.

In existing conditions, floodwaters enter the site through the low-lying area surrounding the 645 Summer building and along the eastern edge of the site via Summer Street. Flow then propagates toward E Street before returning to the Reserved Channel through these same pathways. During the receding phase of the surge, flow becomes more concentrated along the eastern edge of the site.

The Phase 1 improvements do not significantly alter these flow patterns. Because Phase 1 primarily affects areas that are already above flood levels, velocities remain generally consistent with existing conditions, with only minor and localized changes.

Phases 2 and 3 change flow behavior by raising site elevations, including the eastern portion of the site and blocking the primary flood pathway around the 645 Summer building. As a result, floodwaters are largely prevented from entering the site interior and instead remain confined to a narrower corridor along Summer Street, propagating toward E Street outside the main project footprint.

As shown in the flood extent results, this redirected flow continues to reach and inundate E Street and adjacent low-lying areas, although this behavior is not fully captured in the velocity pattern figures (Figures 14 through 16), which represent a single snapshot in time.

Flow patterns remain similar in structure under larger 2050 and 2070 storms but occur over a greater spatial extent and with higher velocity magnitudes. In existing conditions, floodwater enters the project site from Reserved Channel through multiple low-lying areas between existing buildings in the site. Floodwater also propagates towards the site through interconnected pathways, including the Reserved Channel along the eastern edge of the site, the Fort Point Channel, and Boston Harbor. These flows converge across the site, propagating inland through low-lying areas and connected corridors, resulting in widespread inundation and distributed flow across the project footprint. During the receding phase of the surge, flow reverses direction with localized concentration occurring along primary pathways, similar to rising phase.

The Phase 1 improvements do not significantly alter the overall flow structure across the site. While localized elevation increases near new buildings modify flow patterns in their immediate vicinity, floodwaters continue to propagate through lower-elevation areas, maintaining similar entry and exit pathways as existing conditions. Phases 2 and 3 substantially modify flow behavior by raising elevations across the project site and limiting direct floodwater entry into the interior. As a result, flow is more concentrated and channelized along the eastern tip of the site along Summer Street.

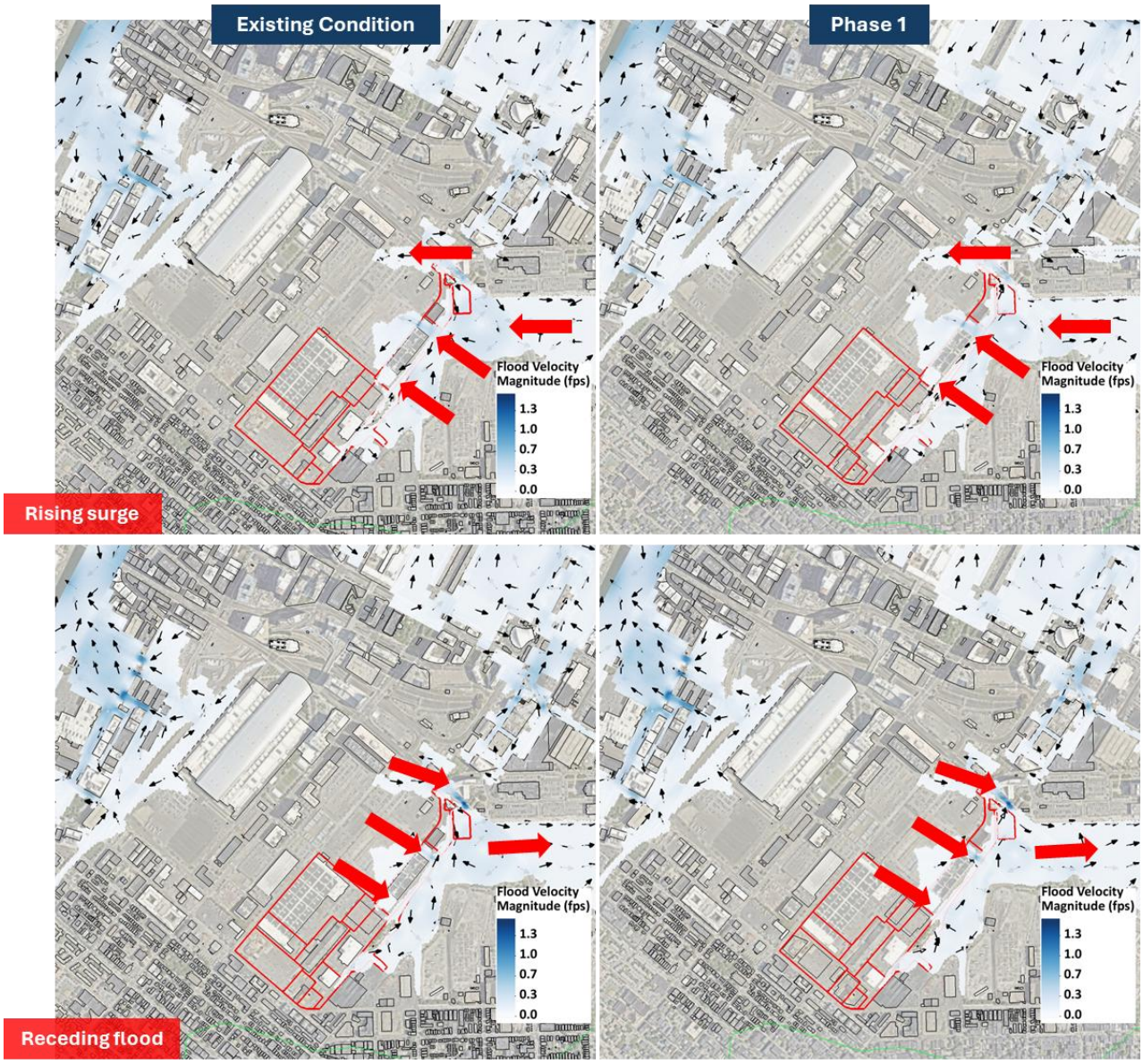


Figure 14 – Flow velocity magnitude and direction for the FEMA Present-Day storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 1 (right panels) conditions.

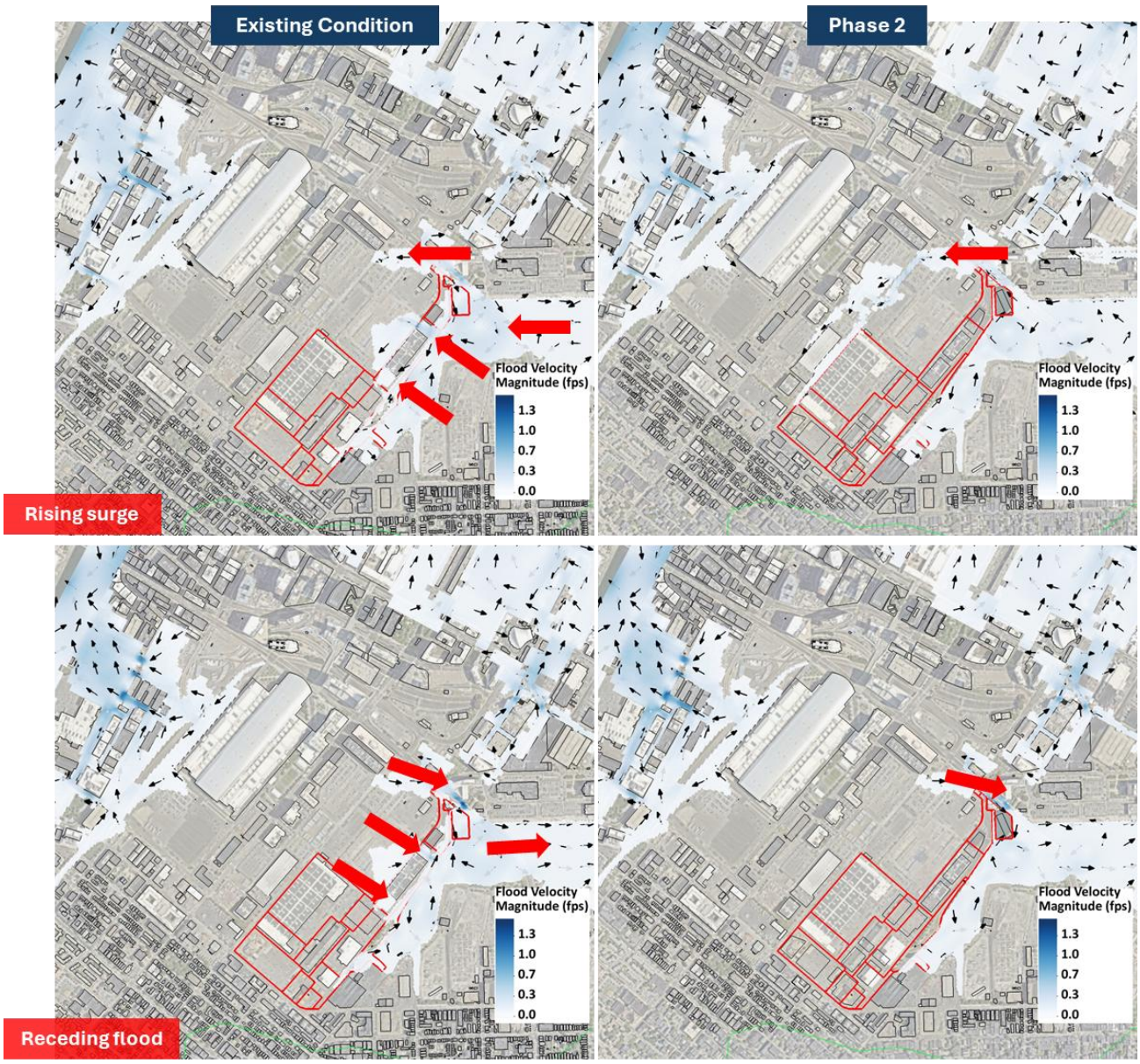


Figure 15 – Flow velocity magnitude and direction for the FEMA Present-Day storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 2 (right panels) conditions.

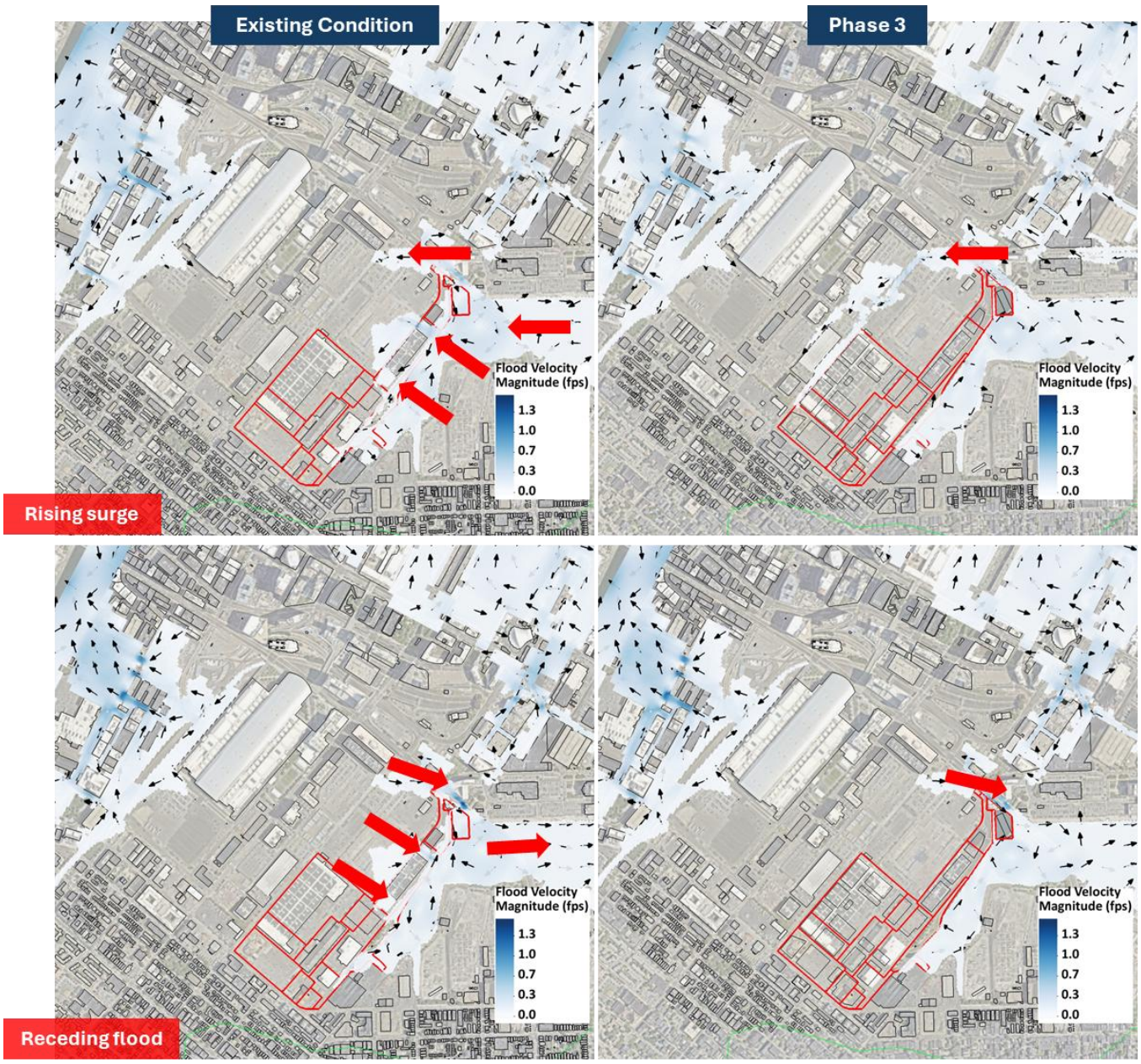


Figure 16 – Flow velocity magnitude and direction for the FEMA Present-Day storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 3 (right panels) conditions.

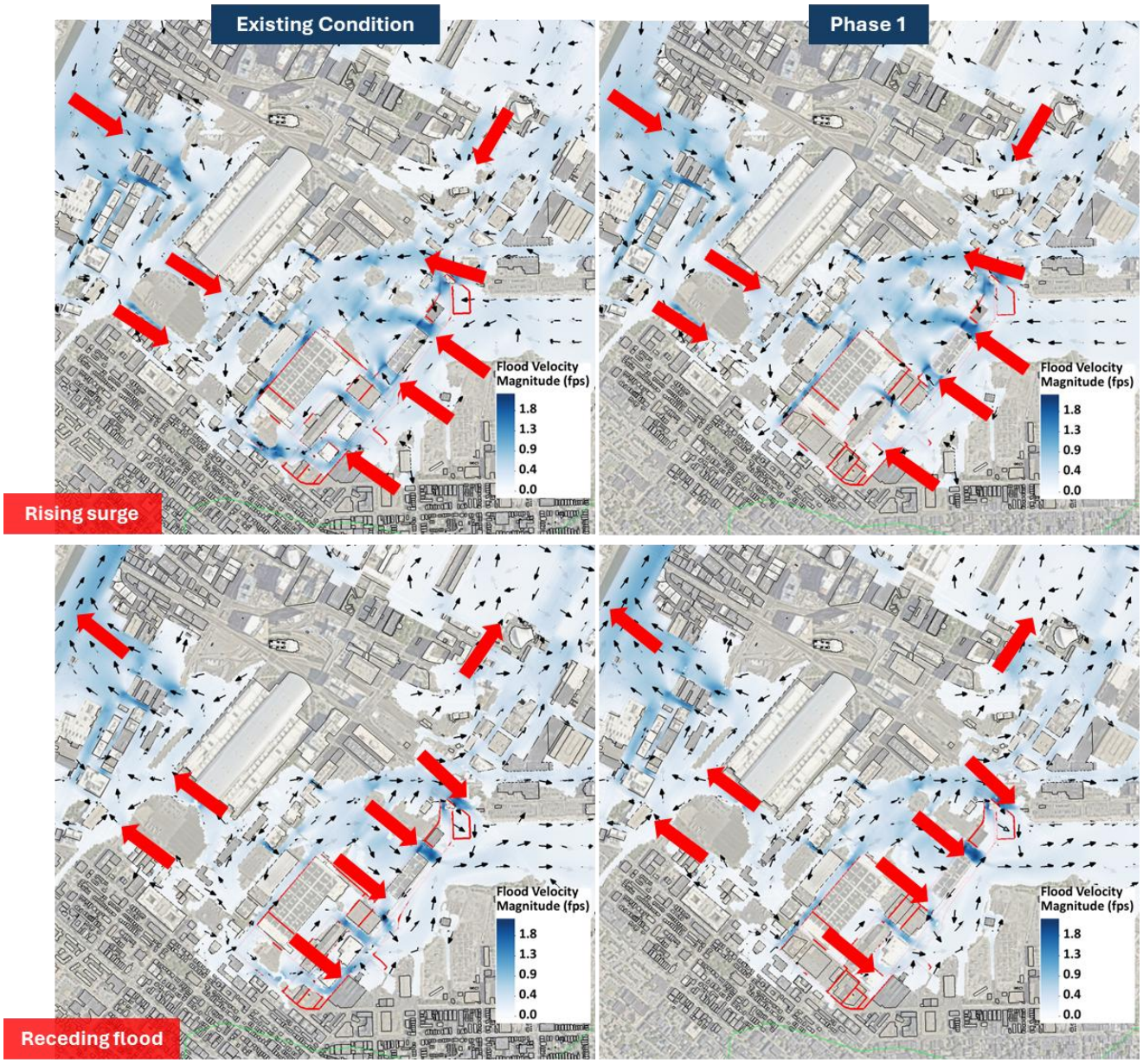


Figure 17 – Flow velocity magnitude and direction for 500-year 2050 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 1 (right panels) conditions.

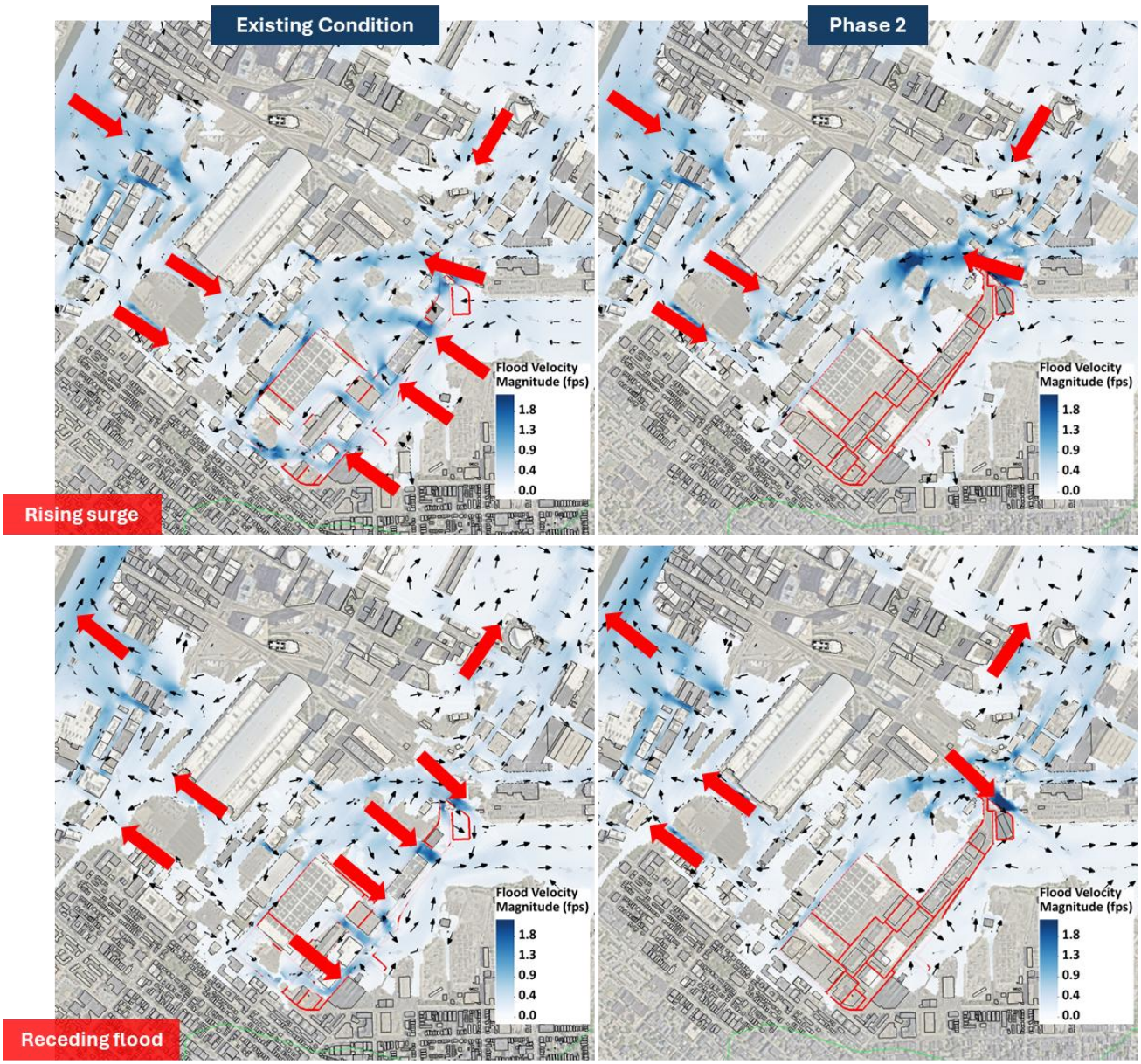


Figure 18 – Flow velocity magnitude and direction for 500-year 2050 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 2 (right panels) conditions.

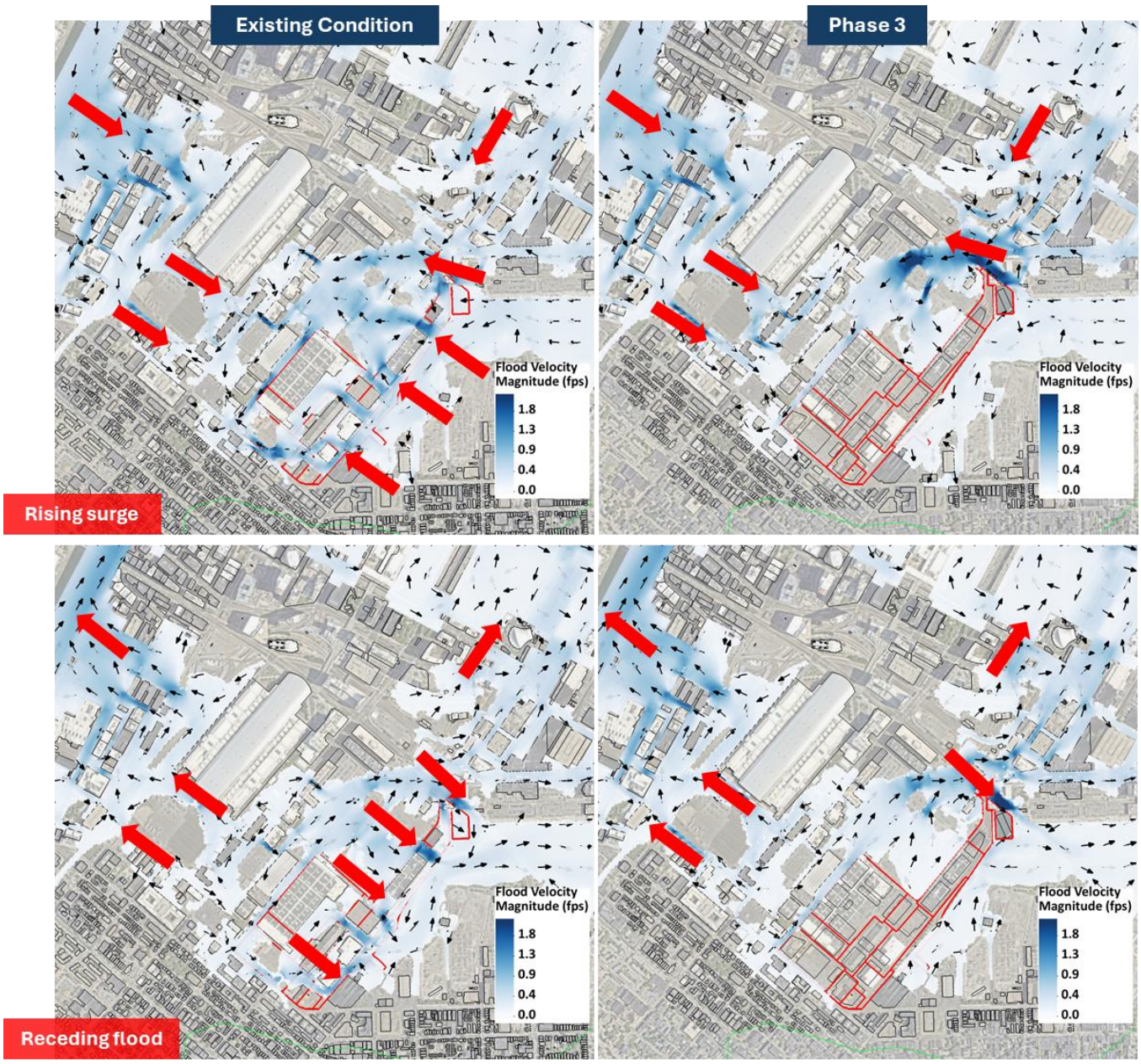


Figure 19 – Flow velocity magnitude and direction for 500-year 2050 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 3 (right panels) conditions.

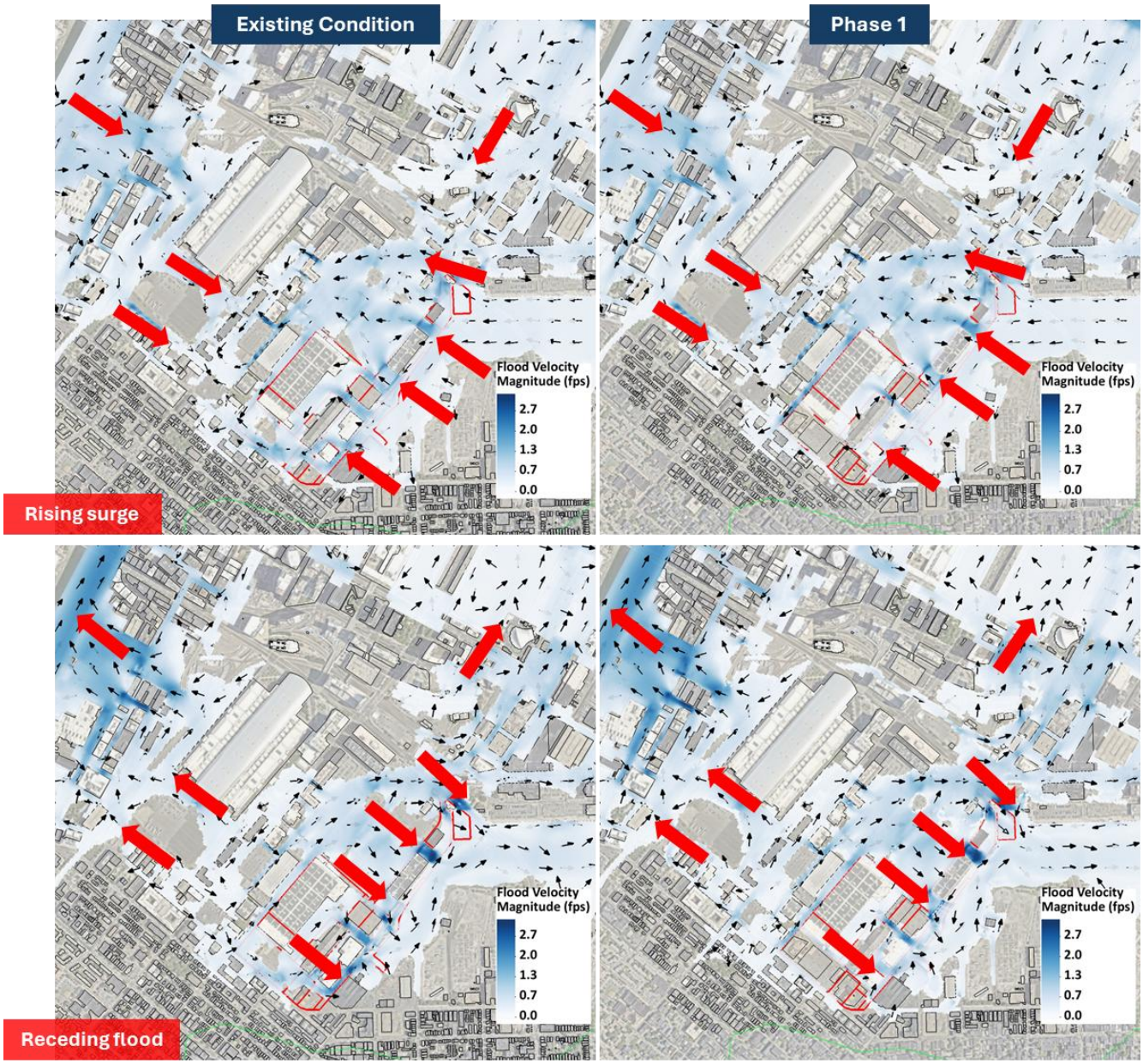


Figure 20 – Flow velocity magnitude and direction for 500-year 2070 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 1 (right panels) conditions.

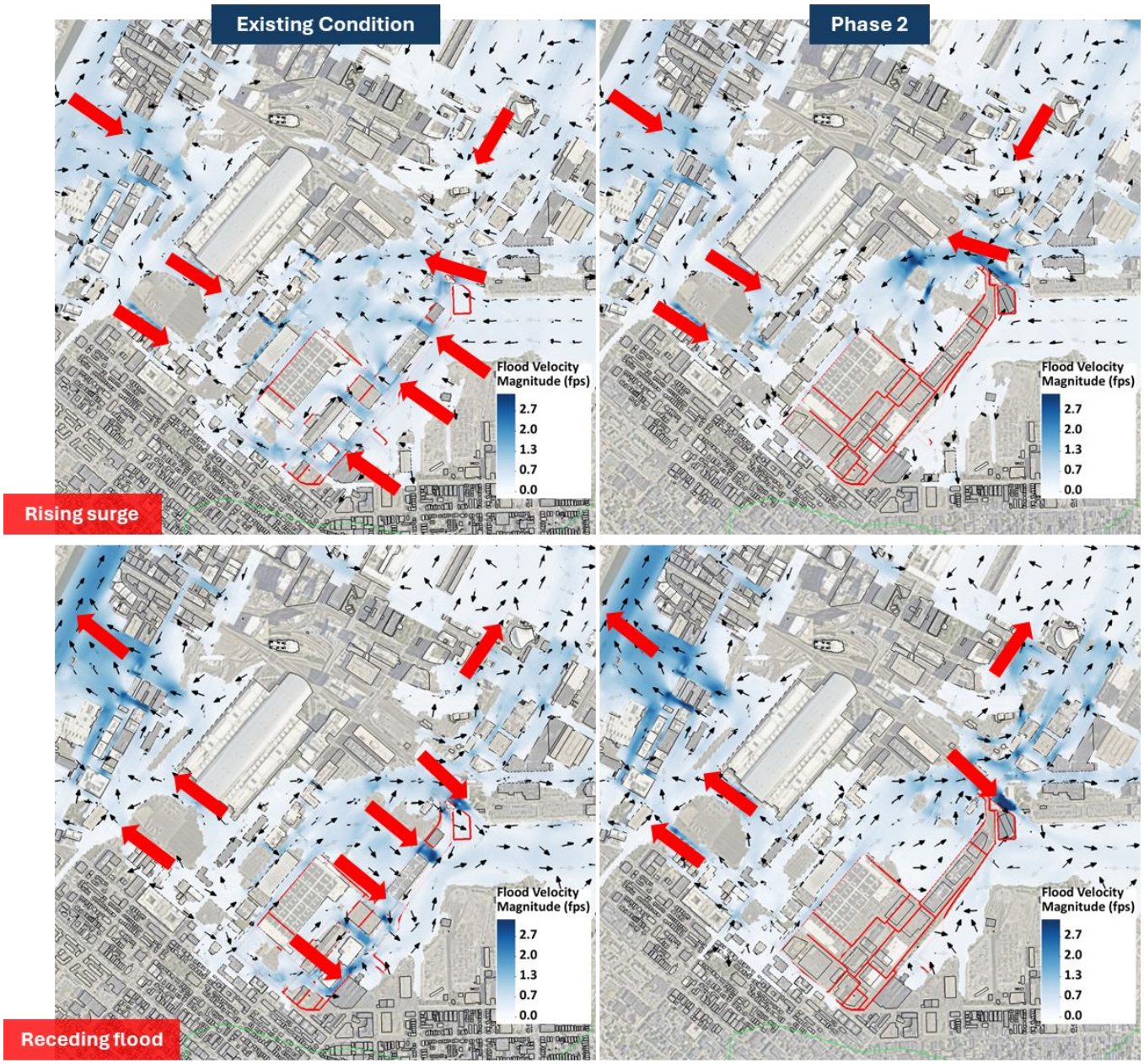


Figure 21 – Flow velocity magnitude and direction for 500-year 2070 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 2 (right panels) conditions.

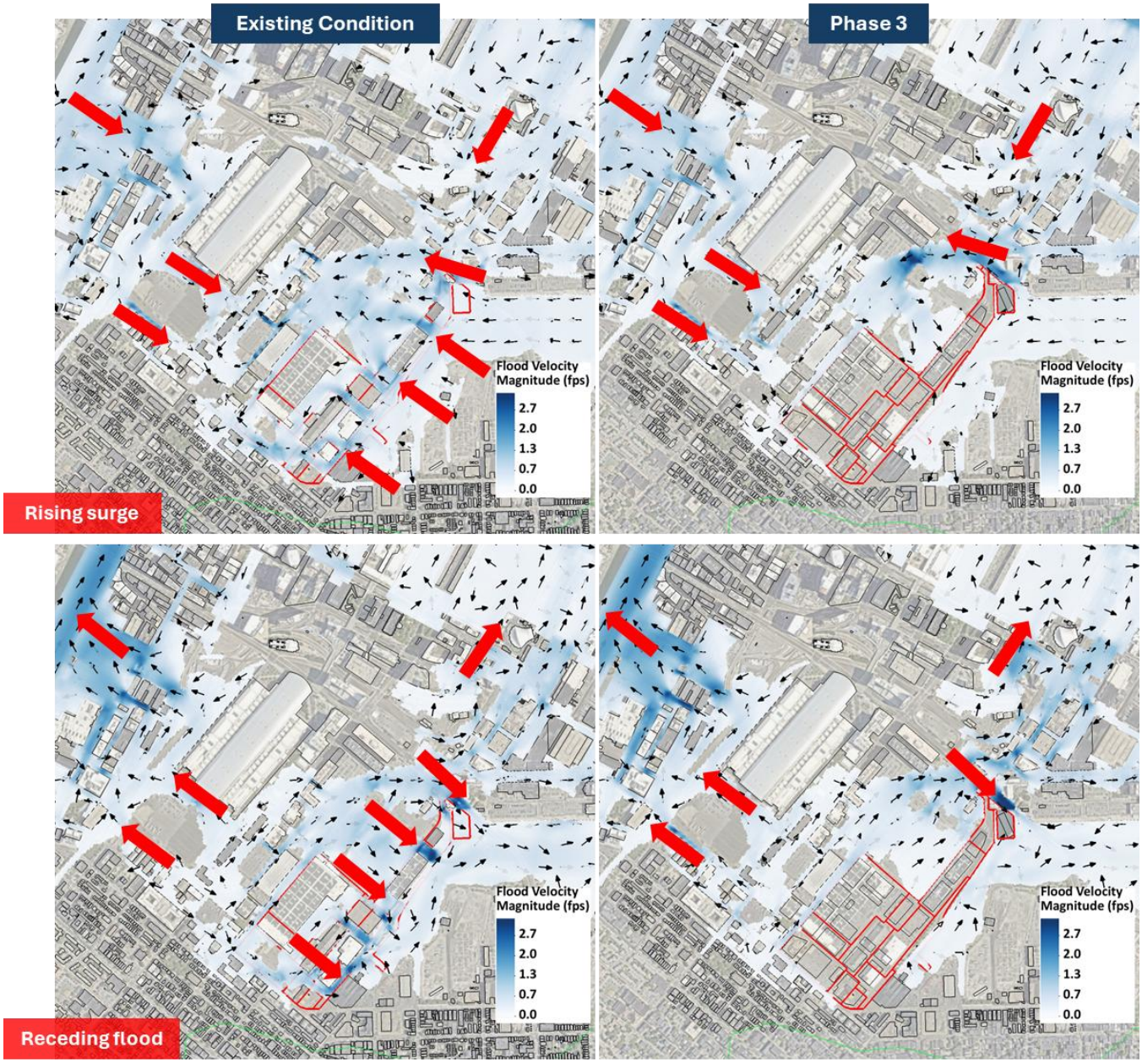


Figure 22 – Flow velocity magnitude and direction for 500-year 2070 storm during rising (top panels) and receding (bottom panels) time periods for existing (left panels) and Project Phase 3 (right panels) conditions.

While the general flow patterns and redirection of flood waters were visually presented in Figures 14 through 22, a key impact is potential changes in maximum flood velocity across the project site and surrounding areas between existing conditions and project phases. Maximum velocity represents the highest flow speed occurring at each location over the passage of the storm event and provides insight into areas where flow changes occur due to the project. Figure 23 shows the location of key points in the area where there are changes occurring between existing conditions and proposed project phases. These representative points were selected to capture key flow pathways, areas of flow concentration, and locations where changes in velocity may influence both on-site conditions and adjacent properties. The points were selected by evaluating the peak velocities for each simulation as shown in Figures 24 through 32. These figures show the peak velocity (at each spatial location throughout the whole modeling domain) occurring during the passage of the FEMA Present Day, 2050 500-year, and 2070 500-year storms. Results are presented for existing conditions (top left panels), for the various project phase conditions (top right panels), and for the difference between the existing conditions and project phase (bottom panel). Velocity differences were computed by subtracting the existing condition velocities from the project phase condition velocities to highlight areas where flow accelerations or decelerations occur due to each of the project phases. As such, blue color in the difference indicates that the velocities at a location are lower for project phase conditions than existing conditions, and red color in the difference indicates that the velocities increase due to the project phase conditions. The locations of representative points (as shown in Figure 23) and their significance are summarized in Table 2. These points are also labeled on the maximum velocity figures (Figures 24-32).

Table 2 – Representative Velocity Evaluation Points.

Point ID	Location Description	General Area	Reason for Selection
Point 1	Eastern tip of the site along Summer Street	Site perimeter (east)	Captures primary flow corridors along the waterfront edge where flow is confined and channelization occurs under project conditions
Point 2	Eastern portion of the site interior	Site interior (east)	Represents interior low-lying area that is inundated under existing conditions but becomes dry in later phases, showing velocity reduction to zero
Point 3	Adjacent to the 645 Summer building (east side)	Existing flow pathway	Captures a key existing flood pathway that is eliminated in Phases 2 and 3, illustrating transition from active flow to dry conditions
Point 4	Northeastern portion of the site near proposed Phase C2 building	Interior transition zone	Represents an area of grading change where flow behavior varies between phases (partial inundation vs. dry), highlighting sensitivity to design modifications
Point 5	Along E 1st Street; Southwestern edge of the site	Adjacent roadway	Captures off-site flow behavior where increased velocities may occur under larger storm scenarios (particularly 2070), indicating potential adjacent property effects
Point 6	E Street; northwest of the site	Adjacent roadway	Represents a major inland flow pathway connecting to the site, used to evaluate redistribution of flow and changes in velocity beyond the project boundary
Point 7	Intersection northwest of the site	Off-site intersection	Captures localized flow concentration at a nearby intersection where velocity increases may occur due to redirected flow paths
Point 8	~300 ft northwest of Point 1 along Summer Street (near Fargo Street)	Site perimeter/adjacent corridor	Represents a secondary flow corridor along the eastern edge where notable velocity increases occur due to channelization and flow confinement

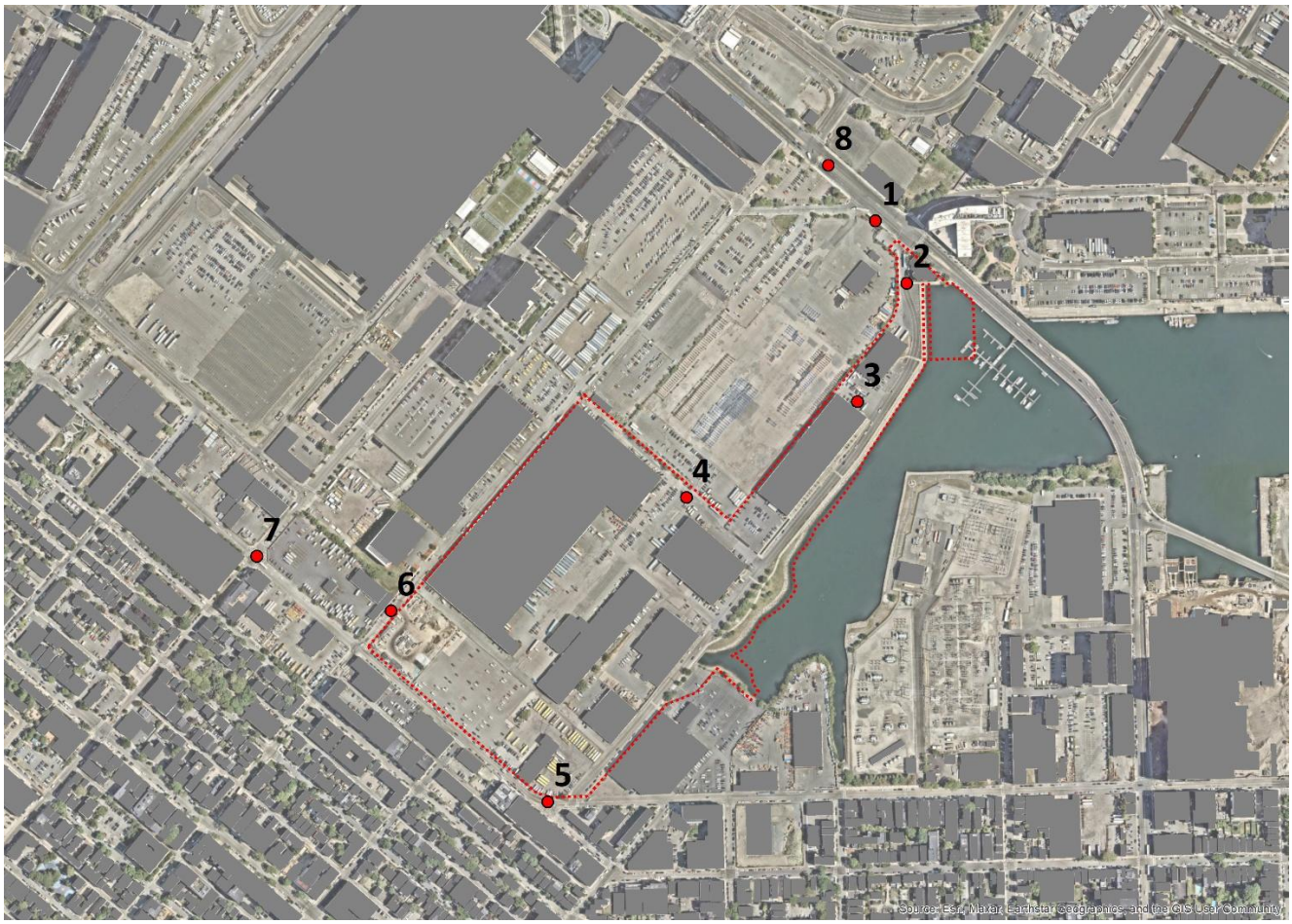


Figure 23 – Location of the velocity evaluation points.

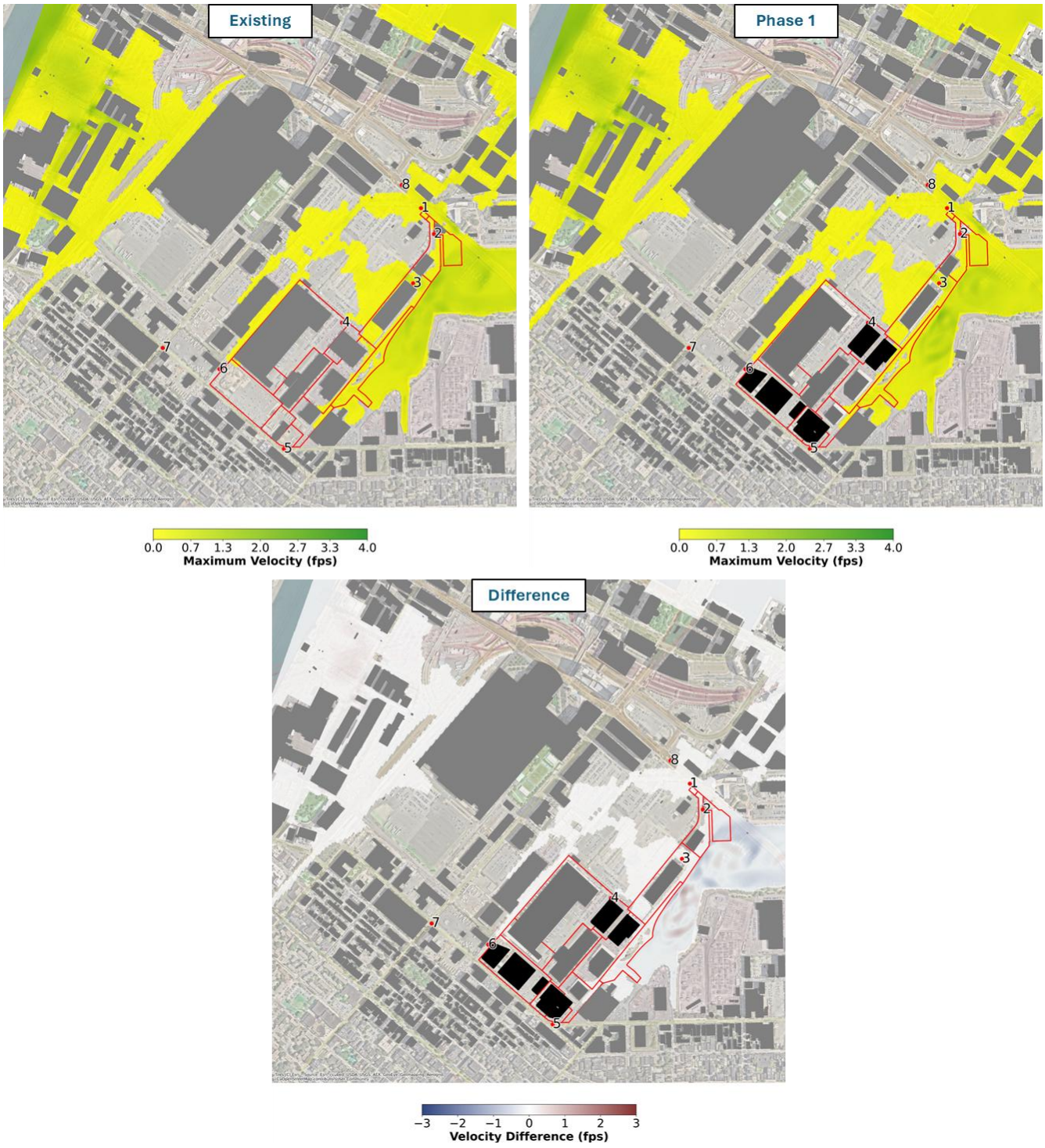


Figure 24 – Maximum flood velocity for FEMA Present-Day for existing (top left panel) and Project Phase 1 (top right panel) conditions, and difference (bottom panel).

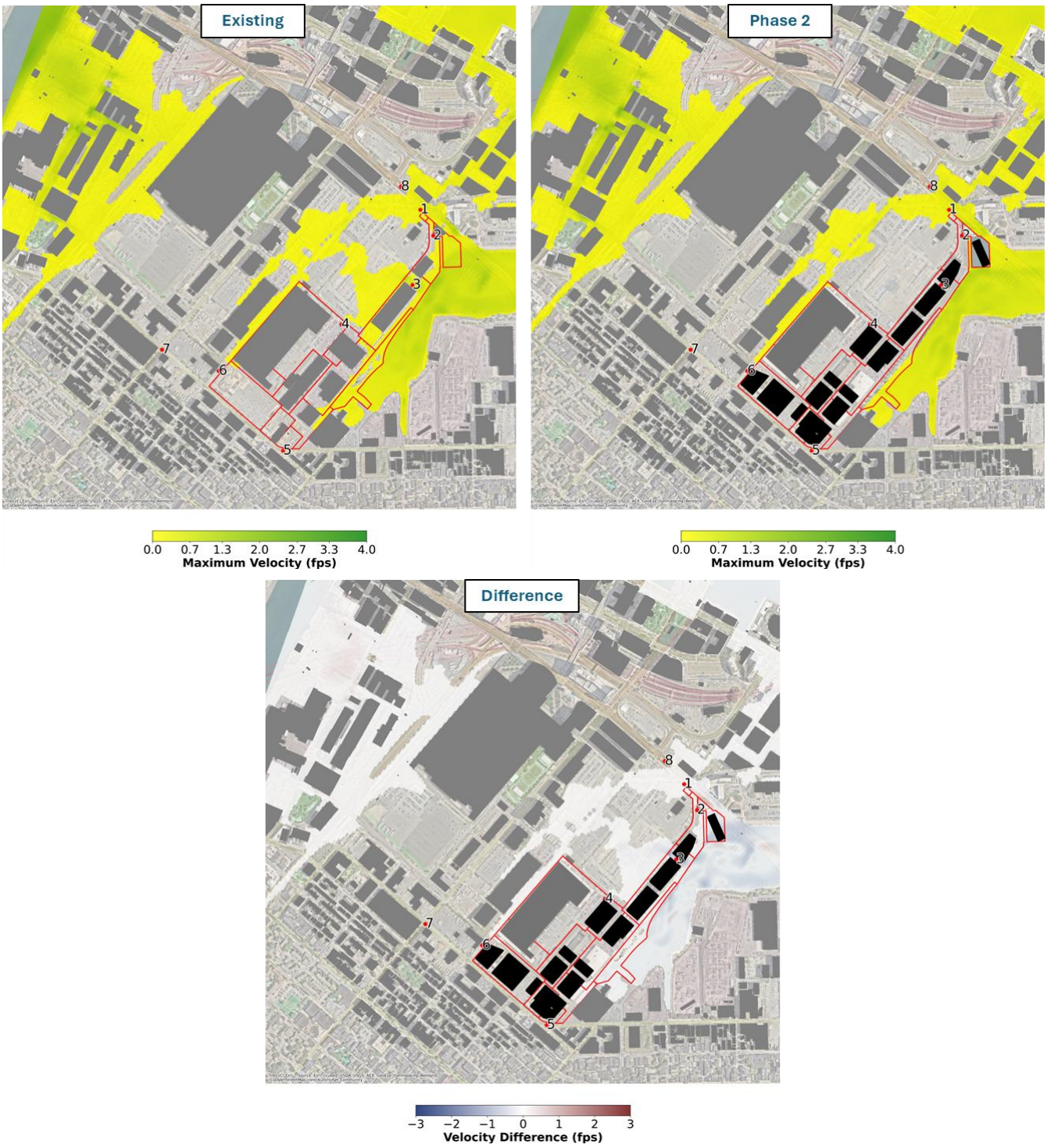


Figure 25 – Maximum flood velocity for FEMA Present-Day for existing (top left panel) and Project Phase 2 (top right panel) conditions, and difference (bottom panel).

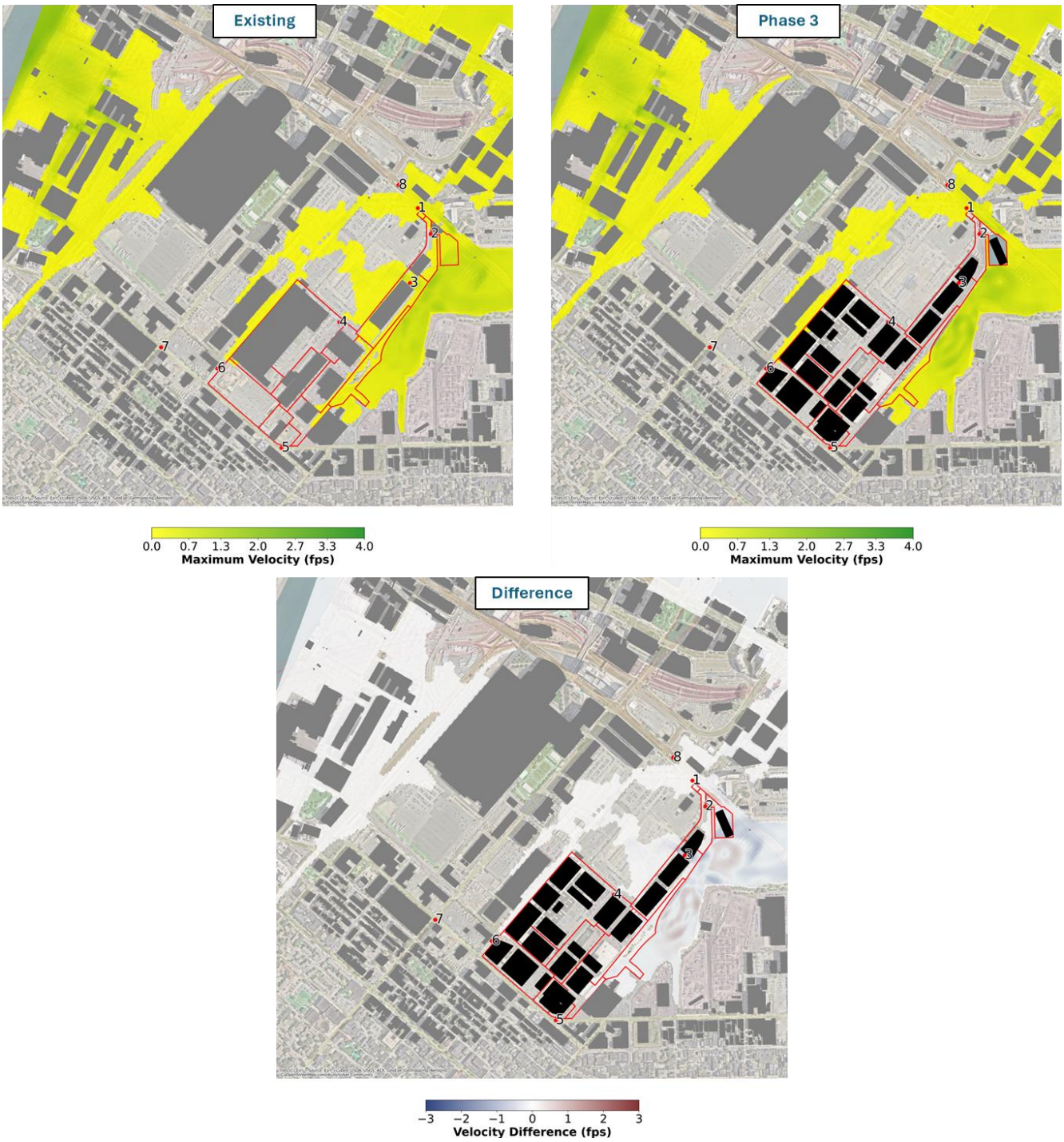


Figure 26 – Maximum flood velocity for FEMA Present-Day for existing (top left panel) and Project Phase 3 (top right panel) conditions, and difference (bottom panel).

In the FEMA present-day 1% AEP storm scenario, maximum velocities across the project site are generally low. As a result, changes in velocity between existing and project conditions are minor and localized. Phase 1 shows no meaningful change in maximum flood velocity. Along the eastern edge of the site near Summer Street and

adjacent to the 645 Summer building, velocities remain nearly identical to existing conditions. These areas continue to act as the primary flood entry corridors, and the slight increases observed are negligible in magnitude and not expected to result in any measurable impact. Across the remainder of the site, no changes are observed due to the absence of flooding or minimal flow conditions. Phases 2 and 3 introduce more noticeable, though still limited, changes in maximum velocity patterns due to modifications in site grading and flow pathways. In the area adjacent to the 645 Summer building, velocities decrease to zero under Phases 2 and 3 as this portion of the site becomes dry due to raised elevations. The elimination of a previously active flow pathway results in a small increase in velocity magnitude (on the order of approximately 0.1 fps) along the eastern edge of the site near Summer Street. However, the velocity was slow under existing conditions and remains slow under proposed conditions.

Tables 3 through 5 present the velocities at the various points as shown in Figure 23, for the Phase 1 project, Phase 2 project, and Phase 3 project, respectively. These tables give the maximum velocity under existing conditions, under proposed project conditions, the difference between those two values the water surface elevation and water depth at each point. Overall, changes in maximum velocity under the FEMA 1% AEP present-day storm are minor and the largest change is simply the area onsite that is removed from flooding.

Table 3 – Hydrodynamic parameters at key locations for FEMA Present Day 1% AEP Event and Phase 1 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	0.23	0.23	0	No Change	10.2	10.2	1.5
2	0	0	0	No Change	0	0	0
3	0.42	0.42	0	No Change	10.2	10.2	1.0
4	0	0	0	No Change	0	0	0
5	0	0	0	No Change	0	0	0
6	0	0	0	No Change	0	0	0
7	0	0	0	No Change	0	0	0
8	0	0	0	No Change	0	0	0

Table 4 – Hydrodynamic parameters at key locations for FEMA Present Day 1% AEP Event and Phase 2 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	0.23	0.34	0.11	Increase	10.2	10.2	1.5
2	0	0	0	No Change	0	0	0
3	0.42	0	-0.42	Decrease	10.2	0	0
4	0	0	0	No Change	0	0	0
5	0	0	0	No Change	0	0	0
6	0	0	0	No Change	0	0	0
7	0	0	0	No Change	0	0	0
8	0	0	0	No Change	0	0	0

Table 5 – Hydrodynamic parameters at key locations for FEMA Present Day 1% AEP Event and Phase 3 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	0.23	0.34	0.11	Increase	10.2	10.2	1.5
2	0	0	0	No Change	0	0	0
3	0.42	0	-0.42	Decrease	10.2	0	0
4	0	0	0	No Change	0	0	0
5	0	0	0	No Change	0	0	0
6	0	0	0	No Change	0	0	0
7	0	0	0	No Change	0	0	0
8	0	0	0	No Change	0	0	0

For the 2050, 500-year storm scenario, maximum velocities increase across the project area compared to the FEMA present-day 100-year (1% AEP) condition, reflecting the greater extent and depth of flooding. Changes in velocity between existing and project phases conditions become more pronounced and highlight the redistribution of flow as site elevations are modified. Tables 6 through 8 present the velocity changes at key points in the model domain for the Phase 1, 2, and 3 project conditions under a 2050 0.2% AEP storm event, respectively.

The Phase 1 project results in modest and spatially variable changes in maximum velocity across the site. Along the eastern edge of the site near Summer Street and adjacent to the 645 Summer building, velocity increases are minor, with localized increases on the order of approximately 0.1 to 0.2 fps. These increases reflect minor adjustments in flow pathways due to nearby grading changes but remain low in magnitude and do not substantially change the potential risk of damage to roadways or infrastructure.

More noticeable increases occur along E Street (Point 6) and nearby intersections W First Street and D Street (Point 7), where velocities increase by up to approximately 0.5 to 0.8 fps. These changes indicate a degree of flow redistribution and early-stage channelization as floodwater begins to concentrate along available pathways. In contrast, a localized decrease in velocity is observed within the interior portion of the site, where grading changes reduce flow efficiency.

Phases 2 and 3 introduce more substantial changes in maximum velocity patterns due to comprehensive elevation increases across the project site. As the site transitions from fully inundated to largely dry, velocities within the interior of the site decrease to zero, reflecting the removal of active flow pathways. This is evident, for instance, in areas surrounding the 645 Summer building and within the eastern and central portions of the site, where velocities previously ranged from approximately 1.5 to 1.7 fps under existing conditions.

At the same time, flow is redirected and becomes more concentrated along the site perimeter. Along the eastern edge near Summer Street, maximum velocities increase significantly, reaching approximately 2.5 fps under Phases 2 and 3. Similar increases are observed along the northern boundary of the site (Point 6) and near the intersection at Point 7, where velocities increase by approximately 0.7 to 1.1 fps. Locations outside the primary flow corridors, including areas that remain unflooded or experience minimal flow, show no meaningful change in velocity.

Overall, the 2050 results demonstrate a clear shift in flow behavior under the with project conditions as velocities are substantially reduced within the project site due to elimination of flooding, while localized increases occur along the site perimeter as flow becomes more confined.

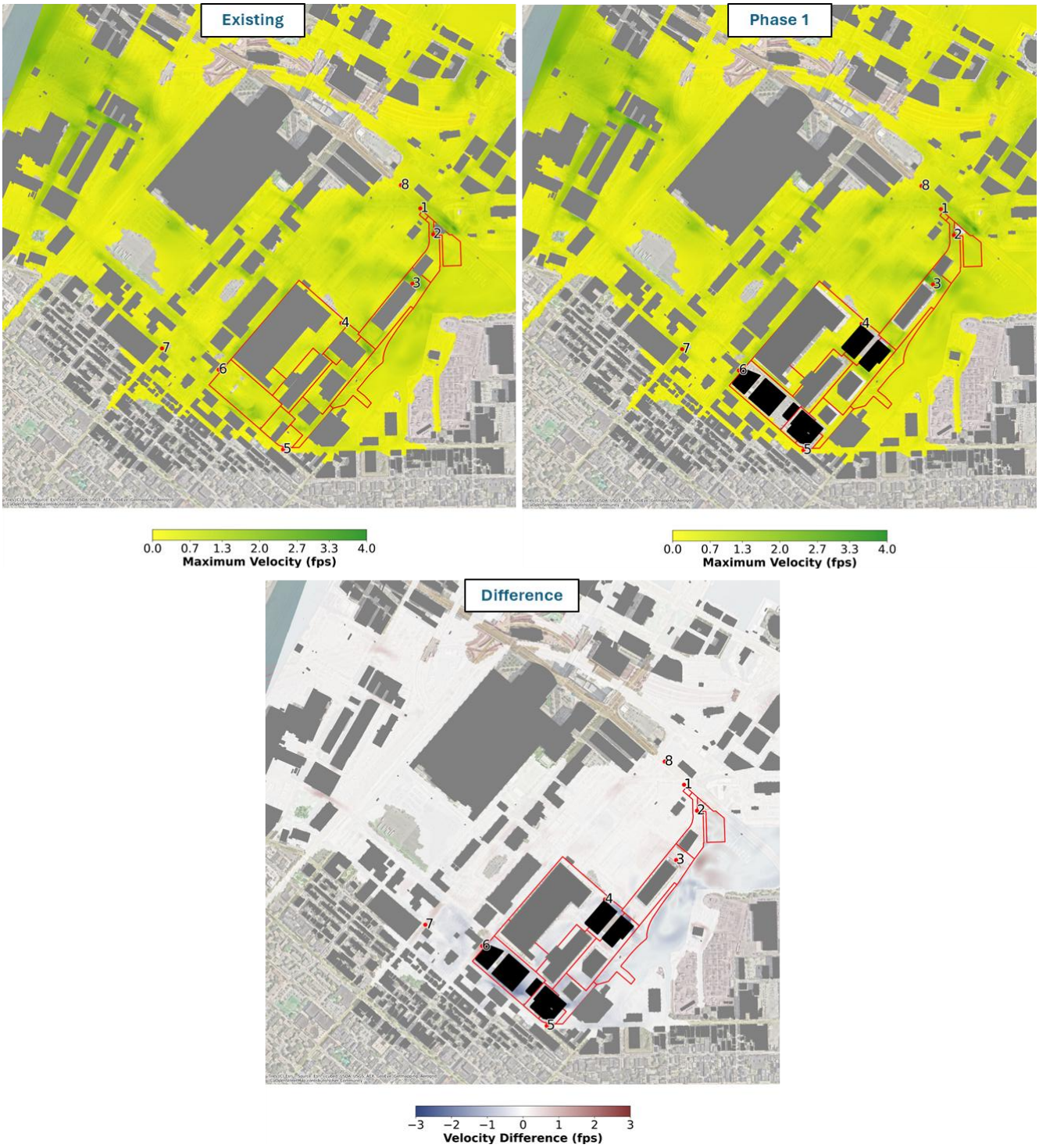


Figure 27 – Maximum flood velocity for 500-year 2050 storm for existing (top left panel) and Project Phase 1 (top right panelt) conditions, and difference (bottom panel).



Figure 28 – Maximum flood velocity for 500-year 2050 storm for existing (top left panel) and Project Phase 2 (top right panel) conditions, and difference (bottom panel).

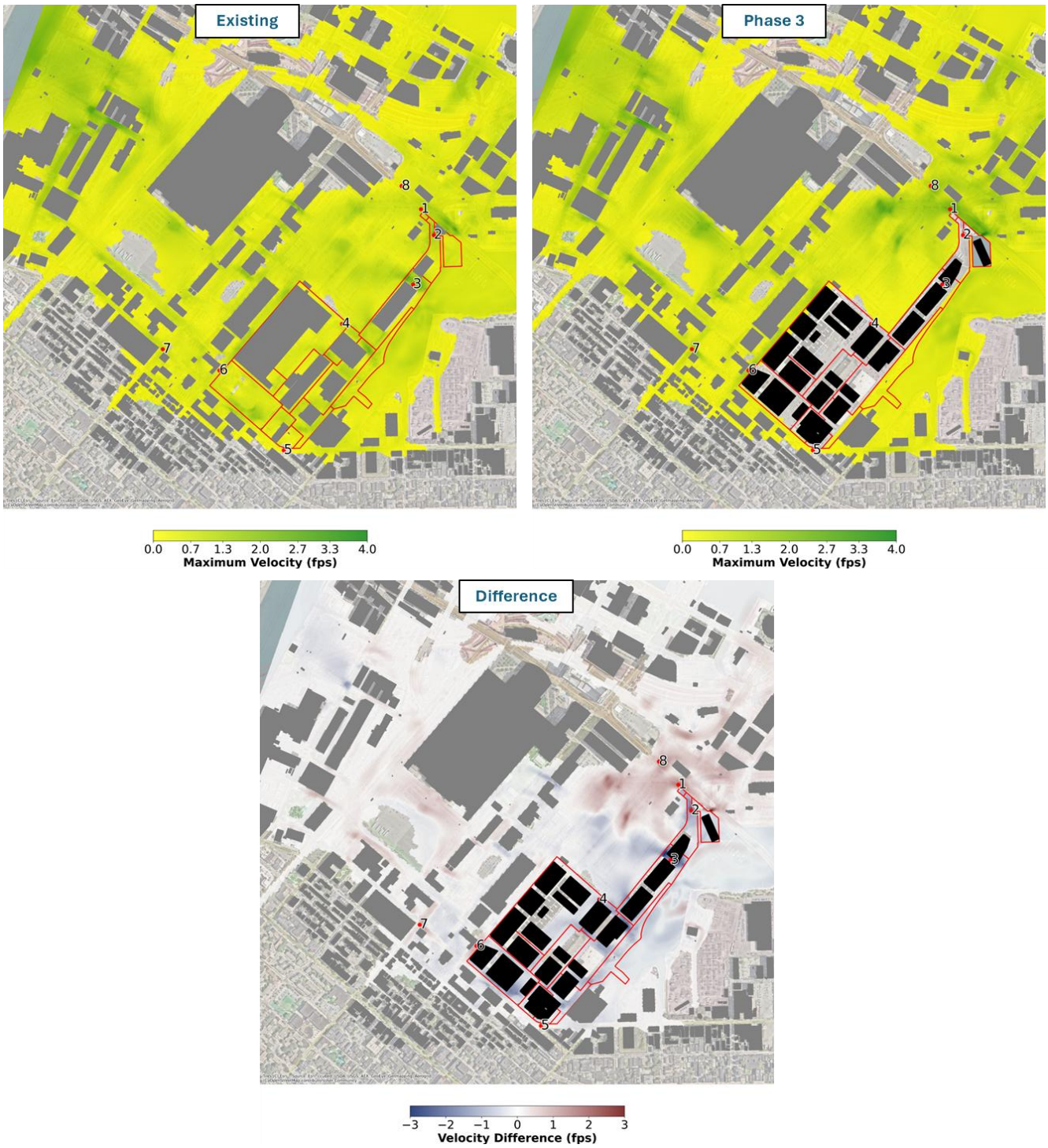


Figure 29 – Maximum flood velocity for 500-year 2050 storm for existing (top left panel) and Project Phase 3 (top right panel) conditions, and difference (bottom panel).

Table 6 – Hydrodynamic parameters at key locations for 500-year 2050 Phase 1 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1	1.01	0.02	Increase	13.2	13.2	4.5
2	1.67	1.71	0.03	Increase	13.2	13.2	3.2
3	1.69	1.84	0.15	Increase	13.2	13.2	4.0
4	0.64	0.31	-0.33	Decrease	13.2	13.2	2.4
5	0	0	0	No Change	0	0	0
6	0.54	1.33	0.79	Increase	13.2	13.2	3.8
7	0.67	1.11	0.44	Increase	13.2	13.2	2.3
8	0.39	0.38	-0.01	Decrease	13.2	13.2	1.6

Table 7 – Hydrodynamic parameters at key locations for 500-year 2050 Phase 2 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1	2.48	1.48	Increase	13.3	13.3	4.5
2	1.67	0	-1.67	Decrease	13.2	0	0
3	1.69	0	-1.69	Decrease	13.2	0	0
4	0.64	0.85	0.21	Increase	13.3	13.3	2.4
5	0	0	0	No Change	0	0	0
6	0.54	1.38	0.84	Increase	13.3	13.3	3.8
7	0.67	1.42	0.76	Increase	13.3	13.3	2.3
8	0.39	1.51	1.12	Increase	13.3	13.3	1.6

Table 8 – Hydrodynamic parameters at key locations for 500-year 2050 Phase 3 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1	2.48	1.48	Increase	13.3	13.3	4.5
2	1.67	0	-1.67	Decrease	13.2	0	0
3	1.69	0	-1.69	Decrease	13.2	0	0
4	0.64	0	-0.64	Decrease	13.3	0	0
5	0	0	0	Increase	0	0	0
6	0.54	1.43	0.88	Increase	13.3	13.3	3.8
7	0.67	1.39	0.72	Increase	13.3	13.3	2.3
8	0.39	1.49	1.1	Increase	13.3	13.3	1.6

In the 2070 0.2% AEP (500-year) storm scenario, maximum velocities increase substantially across the project area compared to both the FEMA 1% AEP present-day and 2050 0.2% AEP conditions, reflecting deeper and more continuous flooding. Changes in velocity between existing and project conditions are more pronounced and highlight the redistribution and confinement of flow around the elevated project site. Tables 9 through 11 present the velocity changes at key points in the model domain for the Phase 1, 2, and 3 project conditions under a 2070 0.2% AEP storm event, respectively.

Phase 1 results in moderate increases in maximum velocity across the site. Along the eastern edge of the site near Summer Street and adjacent to the 645 Summer building, velocities increase slightly (on the order of approximately 0.1 to 0.2 fps), indicating minor adjustments in flow pathways. More notable increases occur across the northern portion of the site and surrounding roadways, where velocities increase by approximately 0.7 to approximately 1.3 fps. Additional increases are observed along E 1st Street and nearby areas, where velocities increase by up to approximately 0.7 fps. In contrast, a localized decrease in velocity is observed within portions of the site interior, where minor grading changes reduce flow efficiency. Overall, Phase 1 maintains similar flow pathways to existing conditions but with increased velocity magnitudes due to the more severe storm.

Phases 2 and 3 introduce significant changes in maximum velocity patterns as the project site becomes largely dry under these conditions. Velocities within the interior of the site decrease to zero, reflecting the elimination of previously active flow pathways. This is particularly evident in areas surrounding the 645 Summer building and within the eastern and central portions of the site, where existing-conditions velocities of approximately 2.0 to 3.0 fps are fully removed.

At the same time, flow is strongly redirected and becomes highly concentrated along the site perimeter. Along the eastern edge of the site near Summer Street, maximum velocities increase substantially, reaching up to approximately 3.5 fps under Phases 2 and 3. Similar increases are observed northwest of this corridor, near Fargo Street (Point 8), where velocities also exceed 3 fps. These areas represent the primary flow conveyance paths as water is forced around the elevated project footprint.

Additional increases occur along the northwestern portion of the site (Point 6) and at nearby intersection Point 7, where velocities increase by approximately 1.0 to 1.5 fps. Along E 1st Street and adjacent corridors, velocities also increase on the order of approximately 1.5 to 1.8 fps, reflecting further redistribution of flow into available pathways. Differences between Phase 2 and Phase 3 are observed in localized areas near the northeastern portion of the site, where additional elevation increases in Phase 3 further eliminate residual flow pathways, resulting in additional reductions in velocity in those areas. Overall, the 2070 results demonstrate an amplified version of the behavior observed in the 2050 scenario as velocities are eliminated within the project site due to drying, while increases occur along the site perimeter and adjacent roadways.



Figure 30 – Maximum flood velocity for 500-year 2070 storm for existing (top left panel) and Project Phase 1 (top right panel) conditions, and difference (bottom panel).

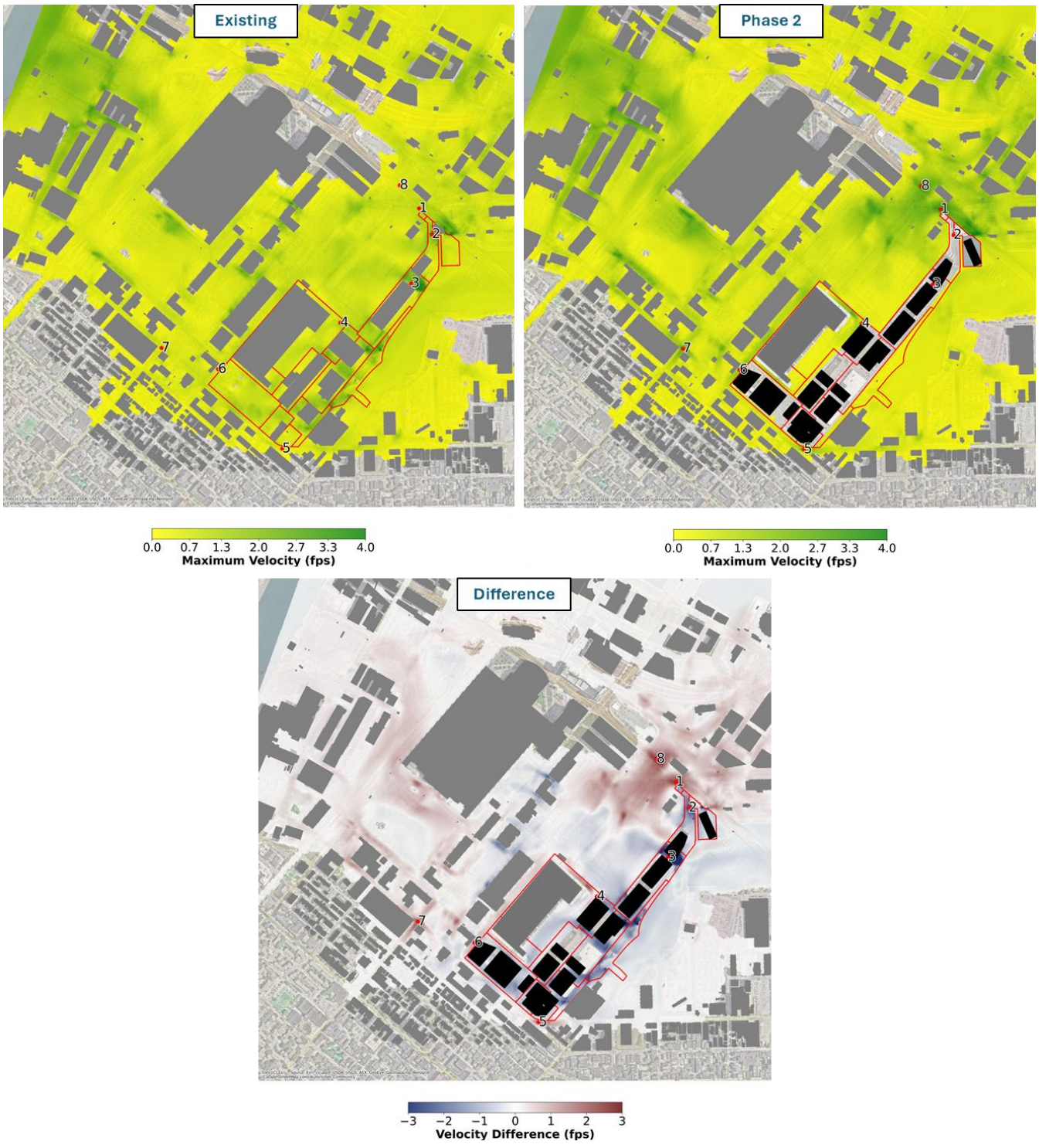


Figure 31 – Maximum flood velocity for 500-year 2070 storm for existing (top left panel) and Project Phase 2 (top right panel) conditions, and difference (bottom panel).

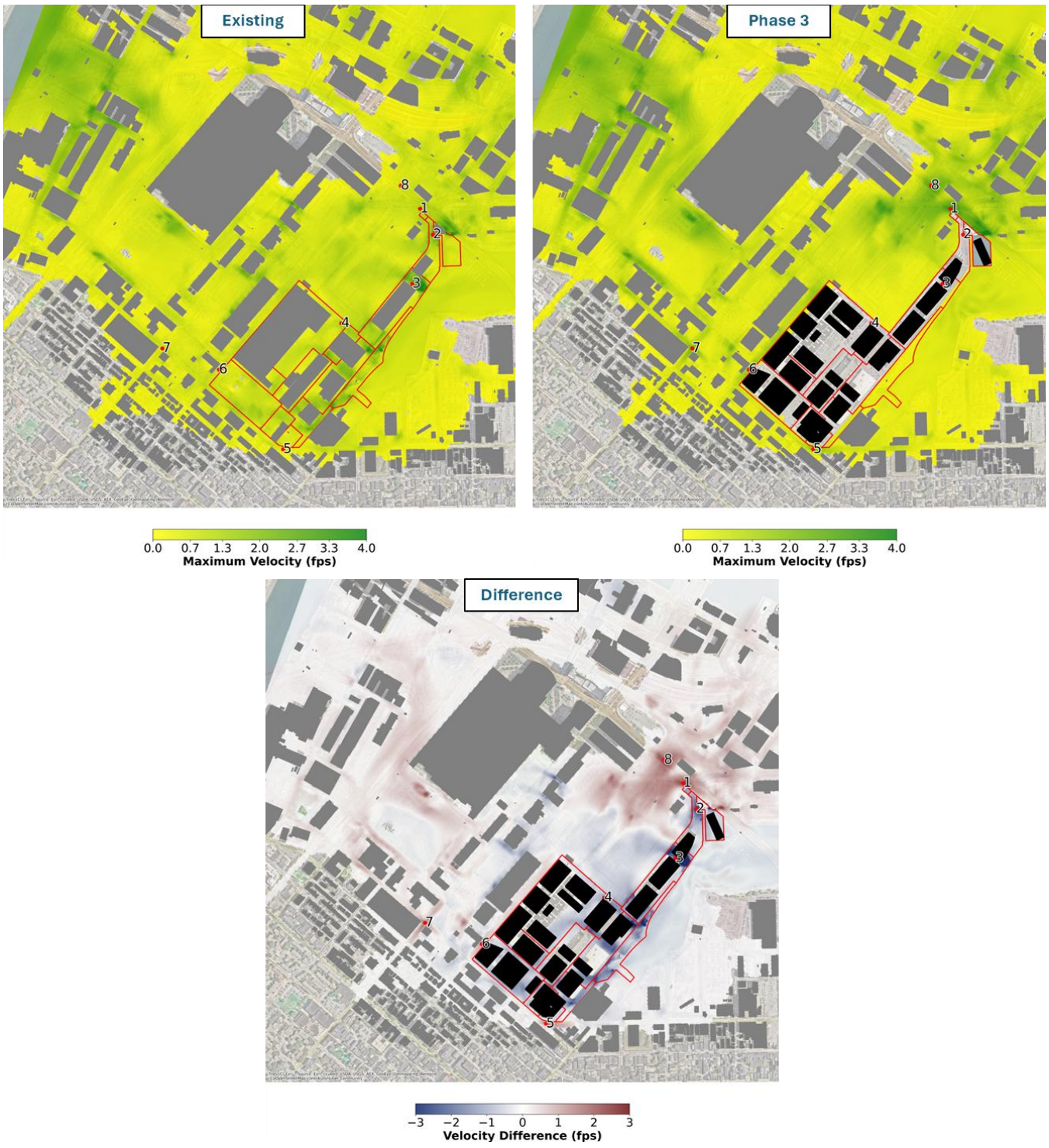


Figure 32 – Maximum flood velocity for 500-year 2070 storm for existing (top left panel) and Project Phase 3 (top right panel) conditions, and difference (bottom panel).

Table 9 – Hydrodynamic parameters at key locations for 500-year 2070 Phase 1 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1.08	1.17	0.1	Increase	15.2	15.2	6.4
2	2.88	3.07	0.18	Increase	15.2	15.2	5.2
3	1.94	2.16	0.22	Increase	15.2	15.2	5.9
4	1.03	0.79	-0.24	Decrease	15.2	15.2	4.4
5	0.61	1.36	0.75	Increase	15.2	15.2	2.7
6	0.57	1.89	1.32	Increase	15.2	15.2	5.8
7	0.76	1.47	0.71	Increase	15.2	15.2	4.2
8	0.54	0.59	0.06	Increase	15.2	15.2	3.5

Table 10 – Hydrodynamic parameters at key locations for 500-year 2070 Phase 2 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1.08	3.48	2.4	Increase	15.2	15.2	6.4
2	2.88	0	-2.88	Decrease	15.2	0	0
3	1.94	0	-1.94	Decrease	15.2	0	0
4	1.03	1.3	0.27	Increase	15.2	15.2	4.4
5	0.61	2.38	1.77	Increase	15.2	15.2	2.7
6	0.57	1.61	1.04	Increase	15.2	15.2	5.8
7	0.76	2.23	1.47	Increase	15.2	15.2	4.2
8	0.54	3.04	2.5	Increase	15.2	15.2	3.5

Table 11 – Hydrodynamic parameters at key locations for 500-year 2070 Phase 3 project.

Location	Velocity (fps)				WSE (ft)		Water Depth (ft)
	Existing	Project	Difference	Change	Existing	Project	
1	1.08	3.29	2.21	Increase	15.2	15.2	6.4
2	2.88	0	-2.88	Decrease	15.2	0	0
3	1.94	0	-1.94	Decrease	15.2	0	0
4	1.03	0	-1.03	Decrease	15.2	0	0
5	0.61	2.24	1.63	Increase	15.2	15.2	2.7
6	0.57	1.59	1.02	Increase	15.2	15.2	5.8
7	0.76	1.93	1.17	Increase	15.2	15.2	4.2
8	0.54	2.8	2.26	Increase	15.2	15.2	3.5

4.3 Potential Flood Damage

Under the larger 2050 and 2070 0.2% events, increases in flood velocity occur along several critical locations around the edges of the property. Potential infrastructure impacts in these areas depend on the combined effects of depth and velocity. Several studies have been conducted on the stability of buildings and potential damage to structures based on flood depth and velocity combinations (Pazourkova, Salaj, and Montoya, 2022; Smith et al., 2014; Gallegos et al., 2012, Kreibich et al, 2009). For example, Figure 33 presents a summary of building stability/damage curves from numerous studies (from Gallegos et al., 2012). Pazourkova et al. (2022) found that the WRL-Light Structure curve (solid line with diamond markers highlighted in orange) had the best predictive value for infrastructure damage. These data are presented in metric units (meters, converted from Table 9 through 11) and the points on Figure 33 represent the depth-velocity combination for the 2070 0.2% AEP storm event, which show the greatest potential damage impact. The figure compares existing conditions (red markers) to the various project phases (yellow = Phase 1; blue=Phase 2; green=Phase 3) for structural damage potential at Points 1 (circles), 6 (squares), and 8 (triangles) corresponding to the 2070 0.2% AEP storm. Point 1 (along Fargo Street) indicates that there would be potential for increased damage to structures in the 2070 0.2% AEP storm under the Phase 2 and Phase 3 design conditions. This is the only location that exceeds the WRL Light Structures damage curve.

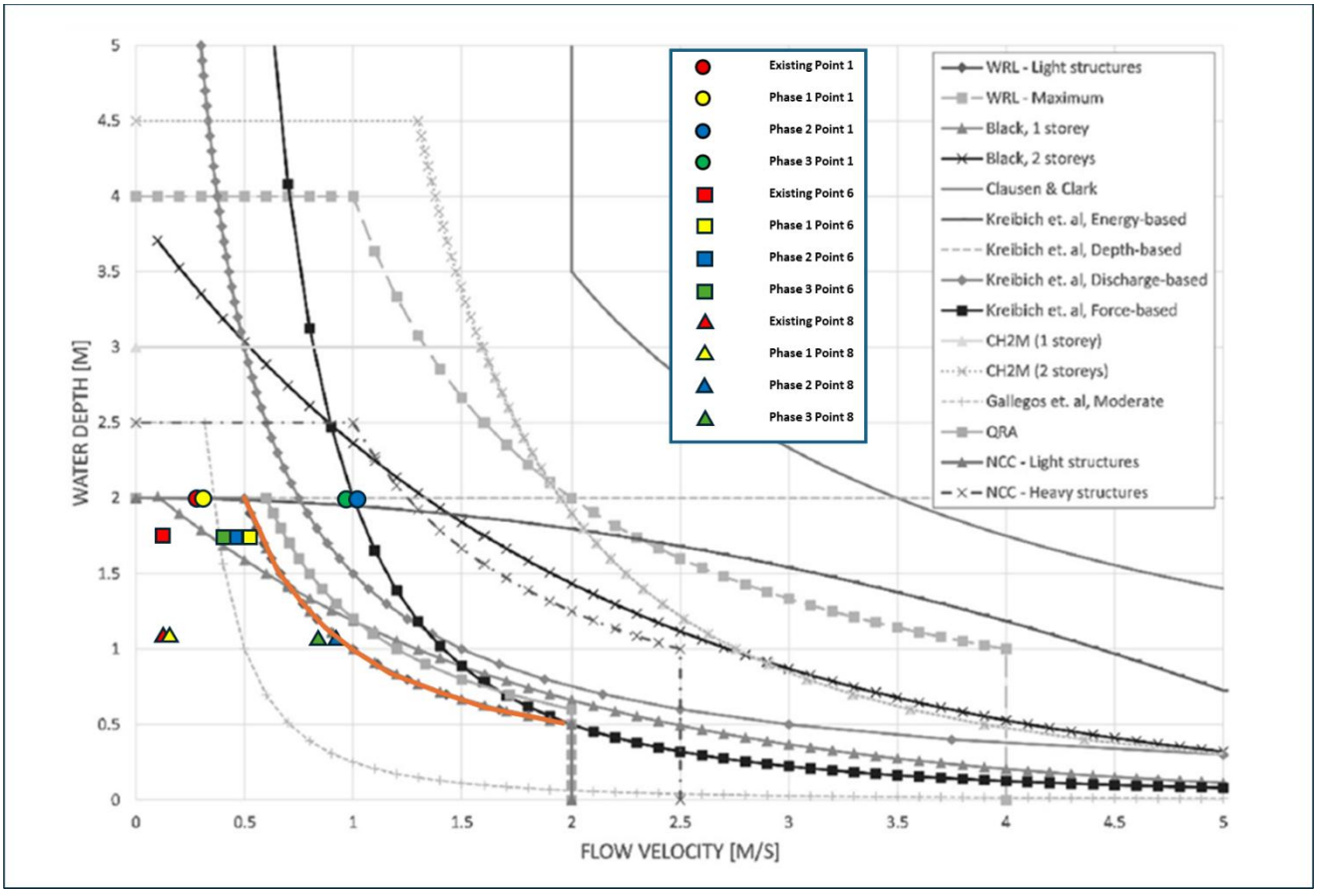


Figure 33 – Comparison of existing (red markers) and project phases (yellow = Phase 1; blue=Phase 2; green=Phase 3) for structural damage potential at Points 1 (circles), 6 (squares), and 8 (triangles) corresponding to the 2070 0.2% AEP storm.

However, at most of the locations where there are increased velocities caused by the proposed development project, there are not buildings, but rather the velocity increases are occurring on streets and roads. To assess potential damage increases on these infrastructure elements (road networks), the depth-velocity combinations were used to evaluate increased damage probability based on van Ginkel et al. (2021). This study quantified increasing damage to roads based on velocity and depth of flooding combinations. Table 12 summarizes this potential change in road damage at Points that showed an increase in velocity under proposed project conditions.

Table 12 – Increase in road damage at key location for 500-year 2070 Phase 3 project.

Point	Street	Increase in Damage Percentage
1	Fargo Street	12%
5	E. First Street	5%
6	E Street	4%
7	W. First Street	9%
8	Summer Street	9%

5.0 Key Findings

The flood redirection modeling demonstrated that the overall proposed project design is effective in reducing flood risk within the project site and can be integrated into a regional flood protection plan for the area. Across all evaluated storm scenarios, including the FEMA 1% AEP present-day event and future 500-year storms (2050 and 2070), the limits flood intrusion, removes key low-elevation entry points, and improves overall site resilience.

As the project advances from Phase 1 to Phases 2 and 3, the site transitions from partially or fully inundated conditions to largely dry conditions during major storm events. These improvements are achieved without increasing flood extent or depth on adjacent properties. However, the elevation of the site and removal of internal flood pathways results in a redistribution of flow, with some concentration of floodwater along the site perimeter and adjacent roadways.

This redistribution leads to localized increases in flow velocity, particularly along certain perimeter roadways, where velocities increase under future storm scenarios. These increases are a direct and expected consequence of redirecting flow around an elevated site.

Flood Extent and Water Surface Elevation (WSE)

- **No Increase in Flood Extent Under Any Scenario -** The project does not result in any increase in flood extent relative to existing conditions for any storm event.

- **Significant Reduction in Flooding Within the Project Site (Phases 2 and 3) -** Under future 500-year storms, the site transitions from fully inundated (existing) to largely dry conditions in Phases 2 and 3.

- **Substantial Decrease in Water Surface Elevation Within the Site –** The proposed design phases reduce flooding from the site interior without increased flooding to adjacent areas.

Flood Velocity and Flow Behavior Findings

- **No Increase in Regional Flood Hazard, but Localized Velocity Increases -** The project does not increase flood extent or regional flood hazard; however, localized increases in velocity occur along site boundaries due to flow redirection under future climate storms. There is no significant increase under present day storm conditions.

- **Flow Redistribution Leads to Channelization Along Site Edges -** Floodwater is redirected around the elevated site, becoming more concentrated along corridors such as Summer Street and toward E Street and Fargo Street.

- **Velocity Changes slightly increase road damage percentage –** The increased velocity and depth combinations do slightly increase the road damage percentages along some of the perimeter of the site under rare, extreme future climate condition storm events.

- **Structural Damage** – Structural damage could occur at one location (Point 1 – Fargo St.) due to the proposed development, but this only occurs under an extreme storm (500-year) in the future (2050 to 2070 or later) with Phase 2 or 3 constructed.

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Appendix G

Greenhouse Gas

ARUP

Memorandum

To	Epsilon Associates
Date	March 30, 2026
Copies	Oxford Properties, SOM
Reference number	281766-00
From	Arup
File reference	
Subject	DOER Comment Resolution with Energy-Cost-Space Data for DEIR Process for RCD Master Plan | Final for GHG Chapter

1. Summary

This memo provides an update to the DOER comment resolution as part of the DEIR Process, specifically the Development Team's commitment to or deviation from recommendations requested by DOER. As of the time of this memo, the Development Team is able to commit to all of the DOER requests **except adoption of air source heat pump water heating** within the **retail/amenity typology** and the **residential typology**. This memo provides the detailed study undertaken by the Development Team to support this position, which is summarized based on the following findings:

- **Retail/amenity Typology without Incentives**
    1. As compared to an electric resistance water heating system, an air source heat pump system would reduce typology annual energy use <1%.
    2. An air source heat pump water heating system represents a ~31% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $0.26M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not offset by the energy savings.
- **Retail/amenity Typology with Incentives**
    1. As compared to an electric resistance water heating system, an air source heat pump system would reduce typology annual energy use <1%.
    2. An air source heat pump water heating system represents a ~23% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $0.19M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not offset by the energy savings and Mass Save incentives.
- **Residential Typology without Incentives**
    1. As compared to an electric resistance water heating system, a central air source heat pump system would reduce typology annual energy use 2%.

2. A central air source heat pump water heating system represents a ~75% greater capital cost than an electric resistance water heating system.
3. On a cumulative cost basis, the ASHP system represents approximately $6M more than the Electric Resistance alternative.
4. The upfront implementation costs of the ASHP system are not offset by the energy savings.

- **Residential Typology with Incentives**
  1. As compared to an electric resistance water heating system, a central air source heat pump system would reduce typology annual energy use 2%.
  2. A central air source heat pump water heating system represents a ~19% greater capital cost than an electric resistance water heating system.
  3. On a cumulative cost basis, the ASHP system represents approximately $0.05M more than the Electric Resistance alternative.
  4. The upfront implementation costs of the ASHP system are not completely offset by the energy savings and Mass Save incentives.

2. Details in Response to Water Heating Technology Recommendation

The following section provides additional detail regarding the air source heat pump (ASHP) water heating analysis for the typologies where the Development Team proposes deviation from the principal DOER request. The Development Team does, however, note that ASHP water heating ***will remain a consideration for additional feasibility study at future phases of project development (e.g.: Schematic Design)***, when additional details pertaining to the project design are available to provide additional system option evaluations.

2.1 Energy Modeling Methodology

This analysis utilized the typology summaries for the project, including square footage, unit count, height, and programmatic typology assumptions, to derive the output energy and cost models. The Development Team developed typological energy models based on these parameters, employed to test the energy use impacts of the two water heating technologies reviewed for project consideration:

- Electric resistance water heating
- Air source heat pump (ASHP) water heating (specific technology dependent on programmatic typology)

These technologies were reviewed for each the retail/amenity typology and the residential typology. The electric resistance option is considered the “Design Case as Agreed” (i.e.: basis of design), while the ASHP option is considered as a possible project energy conservation measure (ECM).

The energy modeling exercise allowed the design team to compare the energy use impact of each technology for the programmatic typologies studied. Additionally, the team used the energy modeling exercise to derive peak hot water demands and anticipated utility costs, which served as inputs to the cost modeling exercise.

2.2 Energy Modeling General Assumptions

The following detail the general assumptions used within the modeling process:

- Total GSF: 5,998,000 (of which 1,559,000 is allocated to Phase I)
- Residential typology characteristics:
  - Total GSF: 1,496,000 (of which 908,000 is allocated to Phase I)
  - Number of buildings: 10 (of which 6 are allocated to Phase I)
  - Typical number of floors: 6-19 stories
  - Range of building heights: 72-183 ft
  - Number of units: 1,578 (of which 935 are allocated to Phase I)
  - Mean peak DHW demand:[1] 18.12 kBtu/h
- Retail/amenity typology characteristics:
  - Total GSF: 218,000 (of which 84,000 is allocated to Phase I)
  - Number of buildings: occurs in all buildings (except F1, F2)
  - Mean peak DHW demand:[2] 2.41 kBtu/h

Additionally, the below characteristics were used to generate the "Base Case" energy model, against which the Design Case as Agreed and the Design Case with the addition of ASHP water heaters were compared:

[1] The mean value is representative of this trait across all buildings within the residential typology

[2] The mean value is representative of this trait for the typology across the entire development.

Table 1: Retail/amenity Typology Modeling Inputs

Modeling Parameter	Base Case	Design Case as Agreed ("Design Case")	Design Case as Agreed + ASHP DHW
Envelope			
Roof Insulation	U- 0.027 (R-37) *per MA Stretch Code C406.2	U-0.020 (R-50)	Same as Design Case
Opaque Wall Assembly	U- 0.042 (R-24) *per MA Stretch Code C406.2	U- 0.028 (R-36)	Same as Design Case
Slab Insulation	Same as design case	F-0.434 (Unheated slab) *per MA Stretch Code C406.2	Same as Design Case
Vertical Glazing	U-Factor U- 0.255 *per MA Stretch Code C406.2	U-0.22	Same as Design Case
Vertical Glazing SHGC	0.35	0.25	Same as Design Case
Overall % Window to Wall Ratio	Whole building: 33%	Whole building: 40%	Same as Design Case
Air Infiltration Rate	Same as design case	0.20 cfm/sq ft façade at 0.3 WC (75 Pa) *per MA Stretch Code C406.9	Same as Design Case
HVAC			
Primary HVAC System	Same as Design Case	DOAS with ERV	Same as Design Case
Primary Heating	Electric resistance (100% efficiency)	ASHP with terminal units, CoP: 2.13	Same as Design Case
Primary Cooling	Same as Design Case	High-efficiency air-cooled centrifugal chillers	Same as Design Case
Exhaust Air Energy Recovery	Same as Design Case	60% effective energy recovery system (run around coil, no pipes)	Same as Design Case
Service Hot Water Type	Gas storage water heater	Electric resistance storage water heater	ASHP water heater
Internal Gains			
Lighting Power Density (LPD)	Same as Design Case	Office: 0.55 W/sf per MA Stretch Code C406.3	Same as Design Case
Electric Equipment	Same as Design Case	0.62 W/sf	Same as Design Case

Table 2: Residential Typology Modeling Inputs

Modeling Parameter	Base Case	Design Case as Agreed ("Design Case")	Design Case as Agreed + ASHP DHW
Envelope			
Roof Insulation	U- 0.027 (R-37) *per MA Stretch Code C406.2	U-0.020 (R-50)	Same as Design Case
Opaque Wall Assembly	U- 0.042 (R-24) *per MA Stretch Code C406.2	U- 0.028 (R-36)	Same as Design Case
Slab Insulation	Same as design case	F-0.434 (Unheated slab) *per MA Stretch Code C406.2	Same as Design Case
Vertical Glazing	U-Factor U- 0.255 *per MA Stretch Code C406.2	U-0.15	Same as Design Case
Vertical Glazing SHGC	0.35	0.25	Same as Design Case
Overall % Window to Wall Ratio	Whole building: 33%	Whole building: 40%	Same as Design Case
Air Infiltration Rate	Same as design case	0.110 cfm/sq ft façade at 0.3 WC (75 Pa) *per Phius 2024 for bldgs. ≥ 5 stories	Same as Design Case
HVAC			
Primary HVAC System	Same as design case	DOAS with ERV	Same as Design Case
Primary Heating	Electric resistance (100% efficiency)	ASHP with terminal units, CoP: 2.13	Same as Design Case
Primary Cooling	Same as design case	High-efficiency air-cooled centrifugal chillers	Same as Design Case
Exhaust Air Energy Recovery	Same as design case	60% effective energy recovery system (run around coil, no pipes)	Same as Design Case
Service Hot Water Type	Gas storage water heater	Electric resistance storage water heater	ASHP water heater
Internal Gains			
Lighting Power Density (LPD)	Same as design case	Multifamily: 0.39 W/sf per MA Stretch Code C406.3	Same as Design Case
Electric Equipment	Same as design case	0.62 W/sf	Same as Design Case

All energy modeling was conducted using EnergyPlus, based on building massing geometries provided by the architect. Capital cost estimates were developed for each technology type across both retail/amenity and residential building typologies (see *2.3 Cost Analysis*).

2.3 Cost Analysis

The cost analysis is inclusive of two (2) components:

1. Capital cost estimates for the Electric Resistance and Air Source Heat Pump systems across both the residential and retail/amenity asset typologies, integrating all buildings.

2. Life cycle cost analyses (LCCA) comparing upfront capital costs against energy costs over time.

Both analyses are classified as Class 5 cost estimates in accordance with the Association for the Advancement of Cost Engineering International (AACE), with an associated accuracy range of -30% to +50%. The base date of the estimates is Q1 2026, with prices shown in USD$. The following subsections outline the methodology and assumptions for each.

2.3.1 Capital Cost Estimates Methodology & Assumptions

Unit rates were derived from parametric models, industry benchmarks, and historical data. Capital expenses include material, labor, general requirements, contractor's overhead and profit, and construction contingency.

The scope of the estimates includes the following for both the residential and retail/amenity building typologies:

- Site Preparation including site preparation allowance
- Electric Resistance (both retail/amenity and residential typologies)
    - Unitary electric resistance
    - Distribution system - internal pipe system
    - Electric infrastructure allowance
    - Finishes allowance
    - Balance of plant of system's integration
- Air Source Heat Pump (ASHP)
    - Retail/amenity typology
        - Unitary heat pump
        - Distribution system - internal pipe system
        - Storage tank
        - Floor, sink, and drain for condensate
        - Additional acoustic buffering
        - Electric infrastructure allowance
        - Structural allowance
        - Balance of plant of system's integration
    - Residential typology
        - Central air source heat pump
        - Distribution system - plant room to units
        - Flow meters
        - Storage tank
        - Floor, sink, and drain for condensate
        - Electric infrastructure allowance
        - Structural allowance
        - Balance of plant of system's integration
- Testing, Start up, and Commissioning Support

Within the retail/amenity typology, the Development team has estimated a blend of tenant types (e.g.: anchor tenants, small shops).

Two iterations of the capital cost estimates have been developed; one with Mass Save incentives, and one without Mass Save incentives. Mass Save incentives are only applicable to the Air Source Heat Pumps. The results of both iterations are presented within this report.

2.3.2 LCCA Methodology & Assumptions

LCCAs were developed for both the Electric Resistance and Air Source Heat Pump systems across the residential and retail/amenity building typologies, in accordance with AACE best practices. A consistent set of assumptions was applied across both systems to ensure comparability.

Each LCCA is based on the capital cost estimates described in *Section 2.3.1* and estimated annual energy costs for each system and building typology. Cost components are limited to capital costs and annual energy costs. Costs are presented in millions of U.S. dollars (2026$).

The study horizon is 25 years. Three output metrics are presented for each scenario: a cumulative LCC representing the undiscounted sum of all costs over the study period, a Net Present Value (NPV) representing the discounted equivalent, and a Benefit-Cost-Ratio, representing ratio of total benefits to total expenditures. Annual costs are discounted at a rate of 10% to account for both the time value of money and energy cost escalation over the study period.

2.4 Energy Analysis of Air Source Heat Pump (ASHP) Water Heating for Retail/amenity

The Development Team compared the two (2) water heating technologies for the Retail/amenity typology. The figure below presents the main *Design Case*, as well as the *Design Case as Agreed + ASHP DHW*, as compared to each other and the *Base Case*.

As shown in the below figure, DHW is not the principal driver of energy use in this typology, accounting for ~1% of total energy use within the *Design Case*. As a result, **the use of the ASHP water heating ECM improves energy efficiency of the *Design Case* by only an additional <1%,** as compared to the *Base Case*. The EUI of the *Design Case* is 22.9 kBtu/ft^2/yr, whereas the EUI of the *Design Case + ASHP DHW* is 22.7 kBtu/ft^2/yr. Load reduction strategies and an optimized heating and cooling system, to which the Development Team has committed, offer more impactful pathways to energy use reductions.

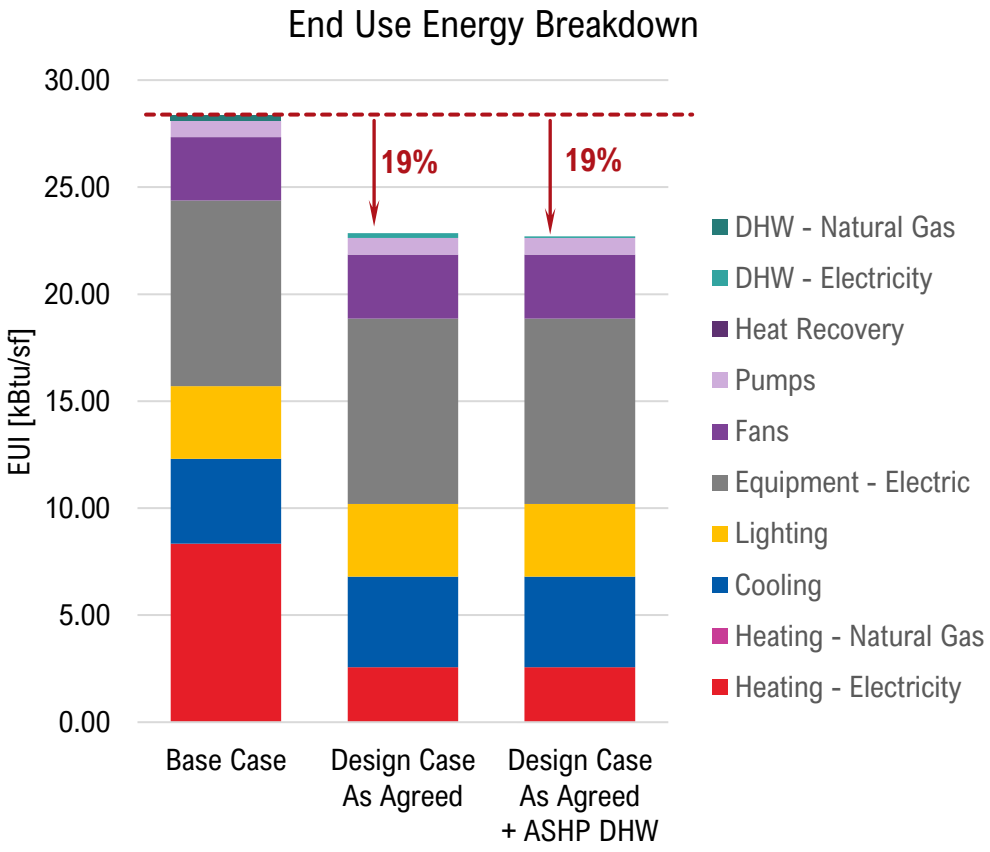


Figure 1: EUI energy use break-down of the *Design Case as Agreed* and *Design Case as Agreed + ASHP DHW* as compared to the *Base Case* for the Retail/amenity typology

2.4.1 Retail/amenity - Capital Cost Estimates and LCCA Results without Incentives

The capital cost estimate for the Retail/amenity Electric Resistance system for all assets is summarized in the table below.

Table 3. Capital Cost Estimate Summary – Retail/amenity - Electric Resistance

Cost Estimate Summary	Estimated values
Site Preparation	$17,000
Electric Resistance System	$567,000
Testing, Startup, and Commissioning Support	$28,000
Total Direct Cost	**$612,000**
Indirect Costs	$153,000
Contractor's Costs	$192,000
Total Construction Cost (Low Range)	*$670,000*
Total Construction Cost (Most Likely)	**$957,000**
Total Construction Cost (High Range)	*$1,436,000*

The capital cost estimate for the Retail/amenity Air Source Heat Pump system for all assets without Mass Save incentives is summarized in the table below.

Table 4. Capital Cost Estimate Summary without Incentives – Retail/amenity - Air Source Heat Pump

Cost Estimate Summary	Estimated values
Site Preparation	$29,000
Air Source Heat Pump System	$733,000
Testing, Startup, and Commissioning Support	$37,000
Total Direct Cost	**$799,000**
Indirect Costs	$200,000
Contractor's Costs	$250,000
Total Construction Cost (Low Range)	*$874,000*
Total Construction Cost (Most Likely)	**$1,249,000**
Total Construction Cost (High Range)	*$1,874,000*

Lastly, the LCCA results are summarized in the table below. The values in the table below represent the net difference between costs associated with the ASHP vs. Electric Resistance.

Table 5. LCCA Results without Incentives – Retail/amenity - Electric Resistance vs. Air Source Heat Pump

LCCA Results	Cumulative LCC (M USD)	NPV (M USD)
Capital Costs	$0.29	$0.27
Energy Savings	-$0.03	-$0.01
Totals	**$0.26**	**$0.26**
Benefit-Cost-Ratio	0.11	0.04

**Note: Cumulative LCC and NPV are shown of the "most likely" total construction cost scenario summarized in Table 3 - Table 4 above.*

Over the 25-year study period, the capital investment required for the ASHP system is not recovered through energy savings alone. On a cumulative basis, the ASHP system represents approximately $0.26M more than the Electric Resistance alternative, with an NPV of approximately $0.26M. This is further reflected in a Benefit-Cost Ratio (BCR) of 0.11, meaning that for every dollar invested in the ASHP system over Electric Resistance, only $0.11 in energy savings is returned.

Additional benefits including reduced maintenance expenditures, equipment replacement savings, other utility considerations (gas and water where applicable), tax incentives, Mass Save incentives, and carbon emission reductions are excluded from this scope.

2.4.2 Summary of Retail/amenity Energy and Cost Analysis (without Incentives)

The findings from the energy and cost modeling for this typology (without incentives) are summarized as follows:

1. Adoption of an ASHP water heating system would improve typology energy performance by <1% annually.
2. An ASHP water heating system represents a ~31% greater Capital Cost than an electric resistance water heating system.
3. On a cumulative cost basis, the ASHP system represents approximately $0.26M more than the Electric Resistance alternative.

4. The upfront implementation costs of the ASHP system are not offset by the energy savings.

As a result of these performance characteristics, **the Development Team proposes that electric resistance water heating remains the basis of design for the Retail/amenity typology** (and therefore the Development Team does not commit to ASHP water heating).

2.4.3 Retail/amenity - Capital Cost Estimates and LCCA Results with Incentives

The capital cost estimate for the Retail/amenity Electric Resistance system for all assets is summarized in the table below.

Table 6. Capital Cost Estimate Summary – Retail/amenity - Electric Resistance

Cost Estimate Summary	Estimated values
Site Preparation	$17,000
Electric Resistance System	$567,000
Testing, Startup, and Commissioning Support	$28,000
Total Direct Cost	**$612,000**
Indirect Costs	$153,000
Contractor's Costs	$192,000
Total Construction Cost (Low Range)	*$670,000*
Total Construction Cost (Most Likely)	**$957,000**
Total Construction Cost (High Range)	*$1,436,000*

The capital cost estimate for the Retail/amenity Air Source Heat Pump system for all assets with Mass Save incentives is summarized in the table below.

Table 7. Capital Cost Estimate Summary with Incentives– Retail/amenity - Air Source Heat Pump

Cost Estimate Summary	Estimated values
Site Preparation	$29,000
Air Source Heat Pump System	$733,000
Testing, Startup, and Commissioning Support	$37,000
Total Direct Cost	**$799,000**
Indirect Costs	$200,000
Contractor's Costs	$250,000
Total Construction Cost (Low Range)	*$874,000*
Total Construction Cost (Most Likely)	**$1,249,000**
Total Construction Cost (High Range)	*$1,874,000*
Estimated Incentives	$70,400
Total Construction Cost w/ Incentives (Low Range)	*$825,000*
Total Construction Cost w/ Incentives (Most Likely)	**$1,178,600**
Total Construction Cost w/ Incentives (High Range)	*$1,768,000*

Mass Save incentives were estimated based on publicly available guidance from Mass Save, noting a potential incentive of $2,200 per unit.

Lastly, the LCCA results are summarized in the table below. The values in the table below represent the net difference between costs associated with the ASHP vs. Electric Resistance.

Table 8. LCCA Results with Incentives – Retail/amenity - Electric Resistance vs. Air Source Heat Pump

LCCA Results	Cumulative LCC (M USD)	NPV (M USD)
Capital Costs	$0.22	$0.20
Energy Savings	-$0.03	-$0.01
Totals	**$0.19**	**$0.19**
Benefit-Cost-Ratio	0.15	0.05

**Note: Cumulative LCC and NPV are shown of the "most likely" total construction cost scenario summarized in Table 6 - Table 7 above.*

Over the 25-year study period, the capital investment required for the ASHP system is not recovered through energy savings and estimated Mass Save incentives. On a cumulative basis, the ASHP system represents approximately $0.19M more than the Electric Resistance alternative, with an NPV of approximately $0.19M. This is further reflected in a Benefit-Cost Ratio (BCR) of 0.15, meaning that for every dollar invested in the ASHP system over Electric Resistance, only $0.15 in energy savings is returned.

Additional benefits including reduced maintenance expenditures, equipment replacement savings, other utility considerations (gas and water where applicable), tax incentives, and carbon emission reductions are excluded from this scope.

2.4.4 Summary of Retail/amenity Energy and Cost Analysis (with Incentives)

The findings from the energy and cost modeling for this typology are summarized as follows:

5. Adoption of an ASHP water heating system would improve typology energy performance by <1% annually.
6. An ASHP water heating system represents a ~23% greater Capital Cost than an electric resistance water heating system.
7. On a cumulative cost basis, the ASHP system represents approximately $0.19M more than the Electric Resistance alternative.
8. The upfront implementation costs of the ASHP system are not offset by the energy savings and Mass Save incentives.

As a result of these performance characteristics, **the Development Team proposes that electric resistance water heating remains the basis of design for the Retail/amenity typology** (and therefore the Development Team does not commit to ASHP water heating).

2.5 Analysis of [Centralized] Air Source Heat Pump (ASHP) Water Heating for Residential

The Development Team compared the two (2) water heating technologies for the Residential typology. The figure below presents the main *Design Case*, as well as the *Design Case as Agreed + ASHP DHW*, as compared to each other and the *Base Case*.

As shown in the below figure, DHW is not the principal driver of energy use in this typology, accounting for ~4% of total energy use within the *Design Case*. As a result, **the use of the ASHP water heating ECM improves energy efficiency of the *Design Case* by only an additional 2%**, as compared to the *Base Case*. The EUI of the *Design Case* is 22.7 kBtu/ft^2/yr, whereas the EUI of the *Design Case + ASHP DHW* is 22.2 kBtu/ft^2/yr. Load reduction strategies and an optimized heating and cooling system, to which the Development Team has committed, offer more impactful pathways to energy use reductions.

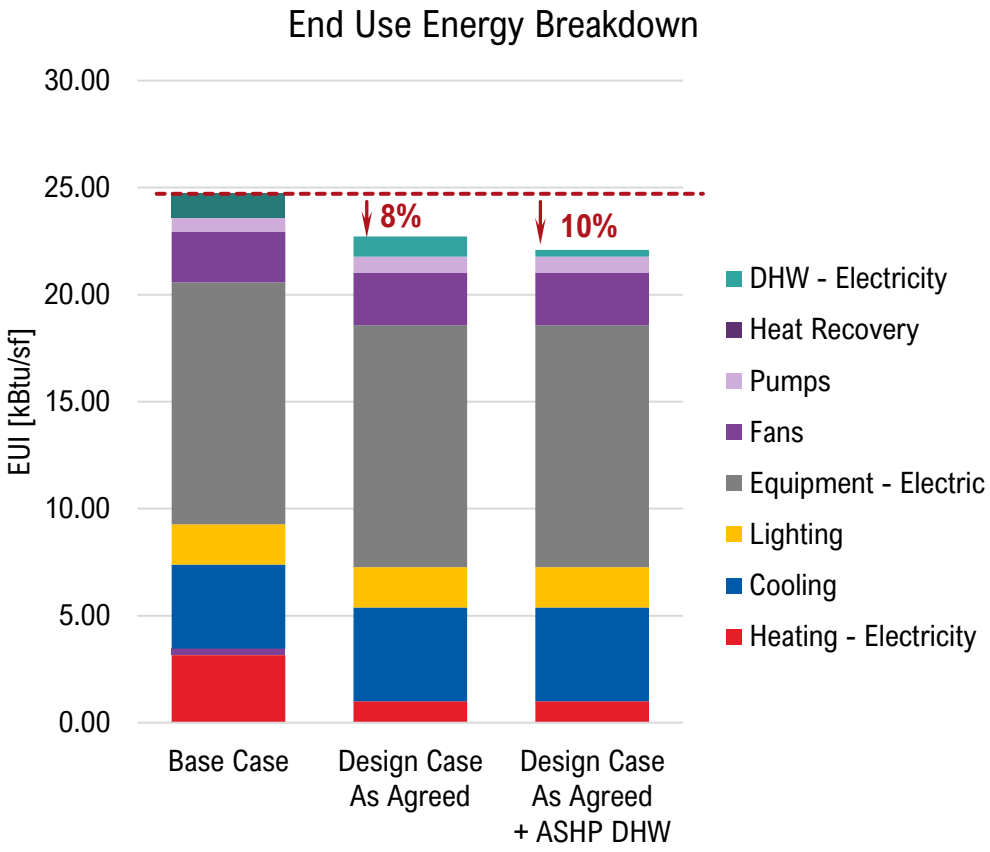


Figure 2: EUI energy use break-down of the *Design Case as Agreed* and *Design Case as Agreed + ASHP DHW* as compared to the *Base Case* for the Residential typology

2.5.1 Residential – Capital Cost Estimates and LCCA Results without Incentives

The capital cost estimate for the residential Electric Resistance system for all assets is summarized in the tables below.

Table 9. Capital Cost Estimate Summary - Residential - Electric Resistance

Cost Estimate Summary	Estimated values
Site Preparation	$132,000
Electric Resistance System	$6,586,000
Testing, Startup, and Commissioning Support	$329,000
Total Direct Cost	**$7,047,000**
Indirect Costs	$1,409,000
Contractor's Costs	$2,114,000
Total Construction Cost (Low Range)	*$7,399,000*
Total Construction Cost (Most Likely)	**$10,570,000**
Total Construction Cost (High Range)	*$15,855,000*

The capital cost estimate for the residential Air Source Heat Pump system for all assets without Mass Save incentives is summarized in the tables below.

Table 10. Capital Cost Estimate Summary without Incentives - Residential - Air Source Heat Pump

Cost Estimate Summary	Estimated values
Site Preparation	$343,000
Air Source Heat Pump System	$11,437,000
Testing, Startup, and Commissioning Support	$572,000
Total Direct Cost	**$12,352,000**
Indirect Costs	$2,470,000
Contractor's Costs	$3,705,000
Total Construction Cost (Low Range)	*$12,969,000*
Total Construction Cost (Most Likely)	**$18,527,000**
Total Construction Cost (High Range)	*$27,791,000*

Lastly, the LCCA results are summarized in the table below. The values in the table below represent the net difference between costs associated with the ASHP vs. Electric Resistance.

Table 11. LCCA Results without Incentives – Residential - Electric Resistance vs. Air Source Heat Pump

LCCA Results	Cumulative LCC (M USD)	NPV (M USD)
Capital Costs	$8.0	$7.2
Energy Savings	-$2.0	-$0.7
Totals	**$6.0**	**$6.5**
Benefit-Cost-Ratio	0.25	0.10

**Note: Cumulative LCC and NPV are shown of the "most likely" total construction cost scenario summarized in Table 9 - Table 10 above.*

Over the 25-year study period, the capital investment required for the ASHP system is not recovered through energy savings alone. On a cumulative basis, the ASHP system represents approximately $6M more than the Electric Resistance alternative, with an NPV of approximately $6.5M. This is further reflected in a Benefit-Cost Ratio (BCR) of 0.25, meaning that for every dollar invested in the ASHP system over Electric Resistance, $0.25 in energy savings is returned.

Additional benefits including reduced maintenance expenditures, equipment replacement savings, other utility considerations (gas and water where applicable), Mass Save incentives, tax incentives, and carbon emission reductions are excluded from this scope.

2.5.2 Summary of Residential Energy and Costs Analysis (without Incentives)

The findings from the energy and cost modeling for this typology are summarized as follows:

1. Adoption of a central ASHP water heating system would improve typology energy performance by ~2% annually.
2. A central ASHP water heating system represents a ~75% greater Capital Cost than an electric resistance water heating system.
3. On a cumulative cost basis, the ASHP system represents approximately $6M more than the Electric Resistance alternative.
4. The upfront implementation costs of the ASHP system are not offset by the energy savings.

As a result of these performance characteristics, **the Development Team proposes that electric resistance water heating remains the basis of design for the Residential typology** (and therefore the Development Team does not commit to ASHP water heating).

2.5.3 Residential – Capital Cost Estimates and LCCA Results with Incentives

The capital cost estimate for the residential Electric Resistance system for all assets is summarized in the tables below.

Table 12. Capital Cost Estimate Summary - Residential - Electric Resistance

Cost Estimate Summary	Estimated values
Site Preparation	$132,000
Electric Resistance System	$6,586,000
Testing, Startup, and Commissioning Support	$329,000
Total Direct Cost	**$7,047,000**
Indirect Costs	$1,409,000
Contractor's Costs	$2,114,000
Total Construction Cost (Low Range)	*$7,399,000*
Total Construction Cost (Most Likely)	**$10,570,000**
Total Construction Cost (High Range)	*$15,855,000*

The capital cost estimate for the residential Air Source Heat Pump system for all assets with Mass Save incentives is summarized in the tables below.

Table 13. Capital Cost Estimate Summary with Incentives - Residential - Air Source Heat Pump

Cost Estimate Summary	Estimated values
Site Preparation	$343,000
Air Source Heat Pump System	$11,437,000
Testing, Startup, and Commissioning Support	$572,000
Total Direct Cost	**$12,352,000**
Indirect Costs	$2,470,000
Contractor's Costs	$3,705,000
Total Construction Cost (Low Range)	*$12,969,000*
Total Construction Cost (Most Likely)	**$18,527,000**
Total Construction Cost (High Range)	*$27,791,000*
Estimated Incentives	$5,917,500
Total Construction Cost w/ Incentives (Low Range)	*$8,827,000*
Total Construction Cost w/ Incentives (Most Likely)	**$12,609,500**
Total Construction Cost w/ Incentives (High Range)	*$18,914,000*

Mass Save incentives were estimated based on publicly available guidance from Mass Save, noting a potential incentive of $3,750 per unit.

Lastly, the LCCA results are summarized in the table below. The values in the table below represent the net difference between costs associated with the ASHP vs. Electric Resistance.

Table 14. LCCA Results with Incentives – Residential - Electric Resistance vs. Air Source Heat Pump

LCCA Results	Cumulative LCC (M USD)	NPV (M USD)
Capital Costs	$2.04	$1.85
Energy Savings	-$1.99	-$0.72
Totals	**$0.05**	**$1.13**
Benefit-Cost-Ratio	0.98	0.39

**Note: Cumulative LCC and NPV are shown of the "most likely" total construction cost scenario summarized in Table 12 - Table 13 above.*

Over the 25-year study period, the capital investment (including the Mass Save incentives) required for the ASHP system is recovered through energy savings. On a cumulative basis, the ASHP system represents approximately $0.05M more than the Electric Resistance alternative, with an NPV of approximately $1.13M. This recovery is reflected in a Benefit-Cost Ratio (BCR) of 0.98, meaning that for every dollar invested in the ASHP system over Electric Resistance, $0.98 in energy savings is returned.

Additional benefits including reduced maintenance expenditures, equipment replacement savings, other utility considerations (gas and water where applicable), tax incentives, and carbon emission reductions are excluded from this scope.

2.5.4 Summary of Residential Energy and Cost Analysis (with Incentives)

The findings from the energy and cost modeling for this typology are summarized as follows:

5. Adoption of a central ASHP water heating system would improve typology energy performance by ~2% annually.
6. A central ASHP water heating system represents a ~19% greater Capital Cost than an electric resistance water heating system.
7. On a cumulative cost basis, the ASHP system represents approximately $0.05M more than the Electric Resistance alternative.
8. The upfront implementation costs of the ASHP system are not completely offset by the energy savings and Mass Save incentives.

As a result of these performance characteristics, **the Development Team proposes that electric resistance water heating remains the basis of design for the Residential typology** (and therefore the Development Team does not commit to ASHP water heating).

3. Conclusion

The Development Team proposes that, for the retail/amenity typology and the residential typology, **electric resistance water heating remain the basis of design water heating system**, as compared to an air source heat pump system, based on the findings of this study:

- **Retail/amenity Typology without Incentives**
    1. As compared to an electric resistance water heating system, an air source heat pump system would reduce typology annual energy use <1%.
    2. An air source heat pump water heating system represents a ~31% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $0.26M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not offset by the energy savings.
- **Retail/amenity Typology with Incentives**
    1. As compared to an electric resistance water heating system, an air source heat pump system would reduce typology annual energy use <1%.
    2. An air source heat pump water heating system represents a ~23% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $0.19M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not offset by the energy savings and Mass Save incentives.
- **Residential Typology without Incentives**
    1. As compared to an electric resistance water heating system, a central air source heat pump system would reduce typology annual energy use 2%.
    2. A central air source heat pump water heating system represents a ~75% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $6M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not offset by the energy savings.
- **Residential Typology with Incentives**
    1. As compared to an electric resistance water heating system, a central air source heat pump system would reduce typology annual energy use 2%.
    2. A central air source heat pump water heating system represents a ~19% greater capital cost than an electric resistance water heating system.
    3. On a cumulative cost basis, the ASHP system represents approximately $0.05M more than the Electric Resistance alternative.
    4. The upfront implementation costs of the ASHP system are not completely offset by the energy savings and Mass Save incentives.

The Development Team will continue to study opportunities to enhance project design and performance as the project progresses and the details of the project are further refined. Additional time-dependent features of this analysis (e.g.: available thresholds of incentive funding) will also be re-assessed at future stages of project development.

Appendix H

Circulation List and EJ Distribution List

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Project-Specific EJ Reference List

Please populate all items in the grey boxes. Your Project-Specific EJ Reference List will auto-populate in the table below.
Add any supplemental contacts identified through additional research to the right table titled "Supplemental Community Contacts".

Project Name: Reserved Channel Development

Project Address: Pappas Way

Date Generated: 5/26/2026

Filing Type: ☐ ENF/EENF ☐ Single EIR ☑ DEIR ☐ FEIR ☐ Other

MA Municipalities in Project's DGA:						
Boston - Any N	*Blank*	*Blank*	*Blank*	*Blank*	*Blank*

Note: if there are more than six municipalities in the project DGA, unhide row 14 above. If the DGA contains more than 12 municipalities, contact MEPA-EJ@mass.gov for further instructions.

☆ If DGA contains any of the following Boston

Project-Specific EJ Reference List *(auto-populates)*

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Project-Specific EJ Reference List *(auto-populates)*						
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Unhide rows below to show additional contacts