Notice of Project Change

SEAPORT SQUARE

Submitted to:
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201

Submitted by:
Seaport Square Development Company LLC
an affiliate of **W/S Development Associates LLC**
33 Boylston Street
Chestnut Hill, MA 02467

Prepared by:
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In Association with:
Goulston & Storrs
Haley & Aldrich
Howard Stein Hudson, Inc.
James Corner Field Operations
NADAAA
Nitsch Engineering
Sasaki Associates

February 7, 2017

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Chapter 1.0

Project Description

1.0 PROJECT DESCRIPTION

1.1 Project Site

After decades of promise, planning, and anticipation, South Boston's Seaport District ("Seaport") is now recognized as the next great neighborhood in the City of Boston. As new development is completed and new businesses, residents, and employers take root in this still emerging neighborhood, Seaport is developing its own unique identity as the center of gravity of Boston's innovation economy and as a major residential community within the city fabric. Physically, both the built environment and the public realm are taking shape on a block-by-block basis, and the potential to create a cohesive and extraordinary place of residence, business, and recreation is being realized. At the geographic center of this new neighborhood, the Seaport Square Project has a responsibility to provide the critical mass of residences, employers, retailers, entertainment venues, and civic amenities that form the heart and soul of a great 21st century Bostonian neighborhood. Seaport Square Development Company LLC and its affiliates (the "Proponent"), which are affiliates of W/S Development Associates LLC, acquired the remaining Seaport Square development parcels in October 2015 and propose an updated and enhanced vision for the District, detailed in this filing, which will foster the type of unique urban place making that will benefit all Bostonians and make Seaport a destination for visitors and employers from all neighborhoods of the city, from across the country, and from around the world.

The Project Site consists of approximately 23 acres of land, defined by an L-shaped series of development blocks and generally bounded by Northern Avenue and Seaport Boulevard (between Old Sleeper Street and Pier 4 Boulevard) and by Stillings Street, Boston Wharf Road, East Service Road and Pier 4 Boulevard and B Street (between Seaport Boulevard and Summer Street). The Seaport Square Project received approval for the construction of approximately 6,335,200 square feet of gross floor area from the Boston Redevelopment Authority ("BRA") (now doing business as the Boston Planning and Development Authority and referred to herein as the BRA and the BPDA as appropriate) under Article 80B of the City of Boston Zoning Code (the "Code"), and the BRA and the City of Boston Zoning Commission approved a Planned Development Area Development Plan (as amended, the "Original PDA Plan") in 2010. The project also received approval from the Secretary of Energy and Environmental Affairs under the Massachusetts Environmental Policy Act ("MEPA") in 2010, as well as other master plan-level approvals. The project approved in 2010 is referred to herein as the "2010 Project."

Approximately 3.4 million square feet of structures approved as part of the 2010 Project have either been completed or are currently under construction. The status of the Project Blocks is shown on Figure 1-1. Specifically, within the Project Site, construction of structures on five blocks has been completed: the Envoy Hotel on Block A; District Hall on Block F; the Chapel of Our Lady of Good Voyage and the Boston Global Investors office

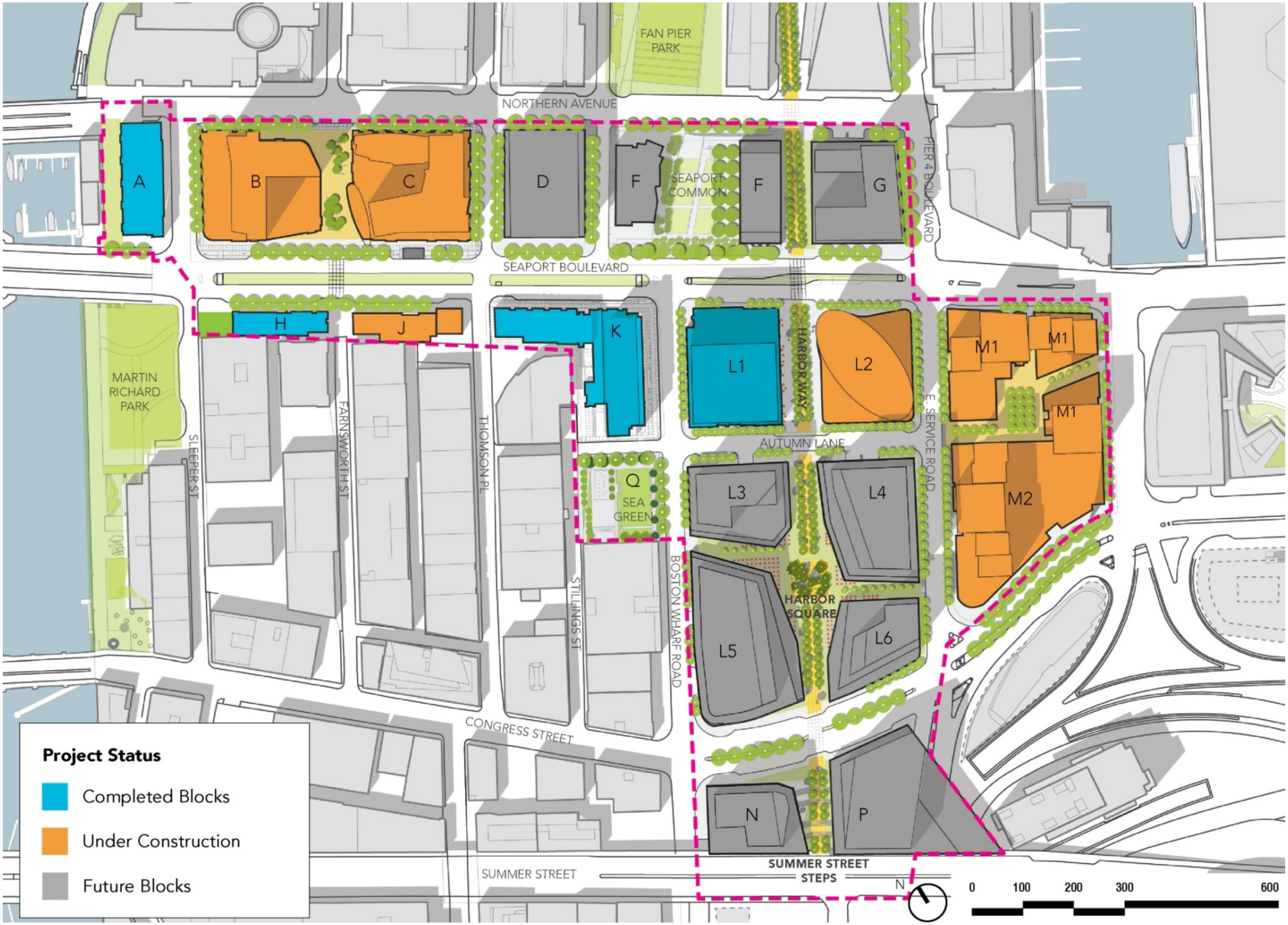

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Figure 1-1

Project Status

building on Block H; the Watermark Apartments on Block K; and the 101 Seaport Boulevard (Price Waterhouse Coopers) building on Block L1. Five additional structures are under construction pursuant to the 2010 Project approvals: the One Seaport Boulevard project, consisting of the Benjamin and Via buildings on Blocks B and C respectively; the Yotel hotel on Block J; the 121 Seaport building on Block L2; and the residential and retail project on Block M. The sites of the development projects described above – Blocks A, B, C, F (the portion on which open space and District Hall have been constructed), H, J, K, L1, L2, and M1/M2, are described herein as the "Developed Blocks."

In addition to these structures, three major public open spaces have been completed within the Project Area: Seaport Common (formerly known as Seaport Square Green) on Block F; Sea Green (formerly known as Q Park) on Block Q; and the Old Sleeper Street Harborwalk connection. Each of these, in its own way, has become a vibrant, active public realm amenity that benefits the entire Seaport District. In addition to these spaces, Courthouse Square, a major public open space, is under construction in connection with the One Seaport project on Blocks B and C of the Project, and the Block M Courtyard is being built as part of the construction of the mixed-use structures on Block M.

Throughout this document, the term "Project Site" shall refer to the entire approximately 23-acre Seaport Square Project area as described in the 2010 Project approvals, along with certain additional parcels of land described herein that the Proponent expects to acquire pursuant to agreements governing the assembly of the Project Site. As set forth in the approvals received in 2010, the Proponent has delineated twenty lettered "Blocks" within the Project Site. The subject of this Notice of Project Change ("NPC") is approximately 13 acres of land comprising approximately nine individual building sites currently owned by affiliates of the Proponent (the "NPC Project Site" and "NPC Project") which remain undeveloped and are occupied largely by surface parking lots, or, in the case of Blocks F and Q, are developed or partially developed but are the subject of certain changes as described herein. The NPC Project Blocks are comprised of Blocks D, F, G, L3-6, N, P, and Q. The term "Project" will be used herein to describe the totality of the structures and other improvements already completed or currently underway as part of the 2010 Project, in addition to those planned as part of the NPC Project.

The Proponent has participated as a member of the 2010 Project team since 2006 in the master planning of a larger 33.5 acre area (the "Project Area"), which includes the public ways within and bounding the Project Site, much of which will be improved in concert with the overall Project's development. The Project Area is shown on Figure 1-2. This NPC seeks to modify certain detailed design aspects of certain as yet unconstructed public realm improvements but does not seek to adjust the scope or extent of the Project Area. To date, approximately $40 million has been spent on public realm improvements by individual development projects within the Project Area, with many of the public realm improvements contemplated within the Project Area still to come.

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Figure 1-2

Project Area

To the north, south, east, and west of the Project Area, planning, permitting, and construction have moved forward in the past ten years to redevelop previously underutilized areas of South Boston, which has resulted in the transformation of many acres of other surface parking lots and major improvements to roadway infrastructure, particularly in the Seaport. Projects completed recently by others include five buildings within the Fan Pier development, 100 Pier 4, multiple historic rehabilitation projects within the Fort Point Channel Landmark District, 315 on A, Waterside Place, and many others. These nearby projects have added new uses and new attractions to the area, signaling renewed vitality for the Seaport.

1.2 Project Description & Current Status

The Project is rapidly transforming 23 acres of land formerly used as surface parking lots into a vibrant, 24/7 neighborhood, just steps from the waterfront and Boston's Financial District (see Figures 1-3 and 1-4 for the Project Context and District Map). Using thoughtful principles of urban planning and enhanced by a diverse and dense complement of retail, restaurant, and entertainment uses, this master planned development is weaving together a unique fabric of residences, offices, shops, restaurants, civic uses, hotels, and open spaces spanning 20 city blocks. Retail is a major component of the Project, occupying the ground floor, and the second and third floors in some cases, of most of the buildings within the Project Site. The retail and restaurant amenities throughout the Project are currently characterized by, and are planned to continue, as a blend of local and regional stores and boutiques mixed with larger national retailers to create a unique and vibrant retail mix that is already re-orienting the entire city's retail and restaurant landscape. Large retail tenants, such as a full-service neighborhood supermarket, will also be included. The entire development will be distinguished by its commitment to sustainable design; the Project is already a Pre-Certified LEED-ND Gold Plan.

The Project will continue to be served by the major public infrastructure improvements constructed in recent years, including the MBTA Silver Line and improved access to major local arteries and I-90 and I-93. The new growth contemplated by both the 2010 Project and the NPC Project has been guided by the BRA's Seaport Public Realm Plan and the South Boston Municipal Harbor Plan, as well as more recent initiatives such as Housing a Changing City: Boston 2030, ImagineBoston 2030, GoBoston 2030, the BostonCreates Cultural Plan, and the City of Boston's focus on growing the Innovation Economy sector by attracting new and innovative uses to the Seaport District.

While only partially completed, the Project has already created significant public realm benefits, including creating and activating a generous amount of publicly accessibly open space – green space, new pedestrian ways, and sidewalks. Approximately 8.8 acres or 37% of the privately-owned Project Site will be dedicated public open space including private streets. Approximately 7.0 acres or 30% of the Project Site will be devoted to pedestrian-only open space (e.g., Seaport Common, Courthouse Square, Sea Green, Harbor Way,

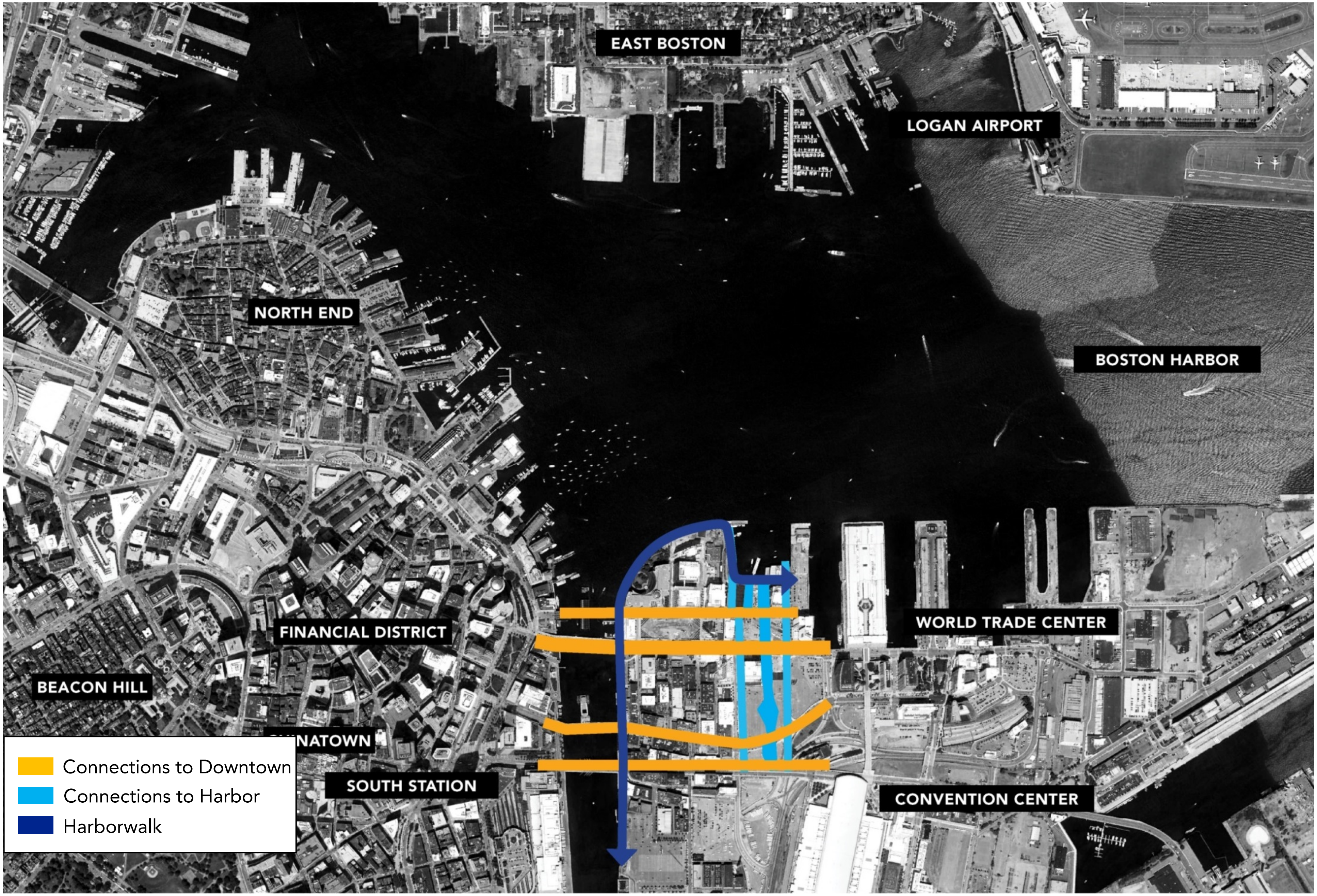

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Figure 1-3

Project Context and Linkages

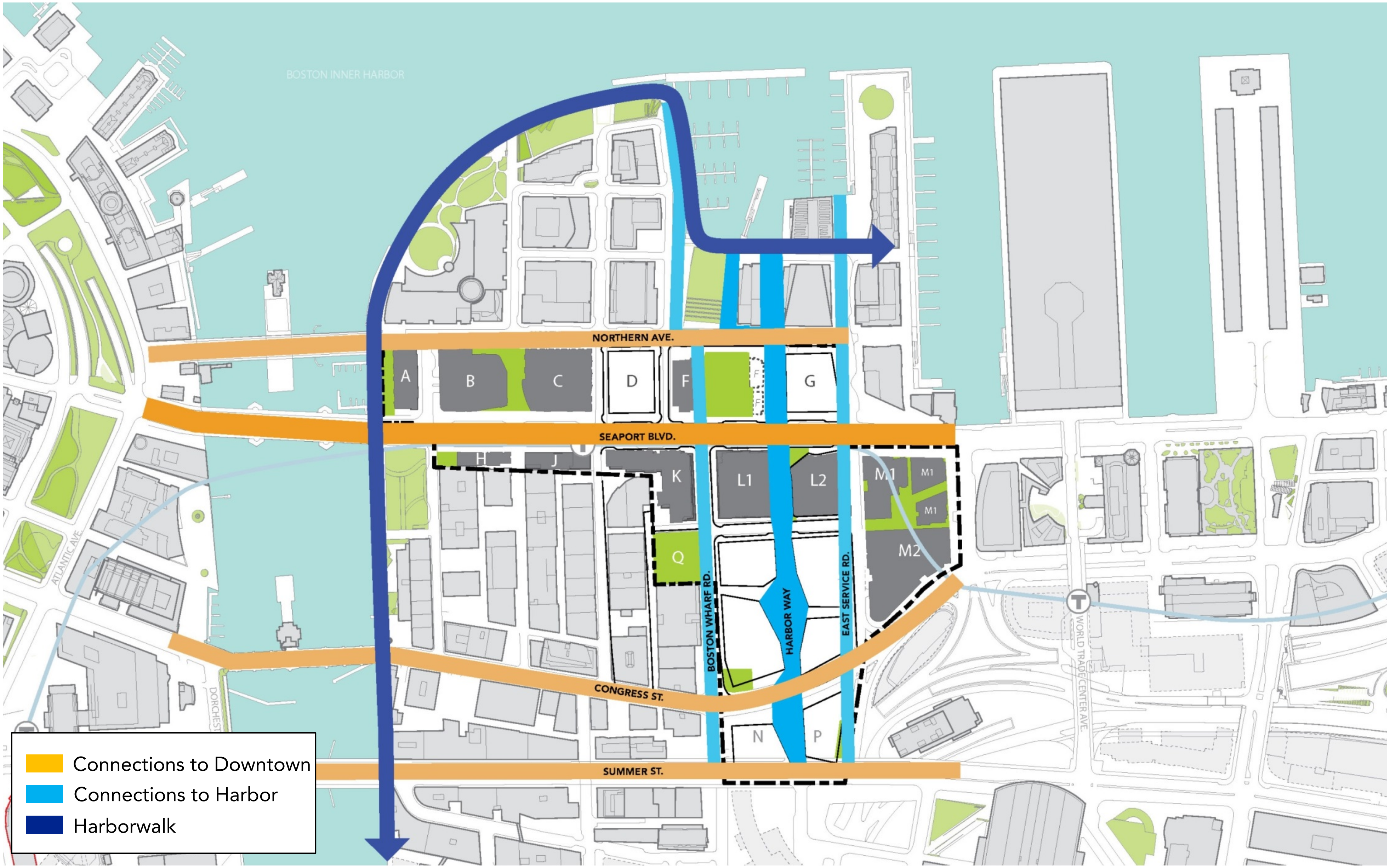

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Figure 1-4

District Map Highlighting Added Connectivity to Harborwalk and Financial District

Harbor Square, Block M Courtyard), and new pedestrian corridors and sidewalks. It is important to note that significant portions of the new pedestrian-oriented public open space to be built by the Proponent as part of the Project fall outside of the limits of the Project Site and therefore are not included in the calculations stated above (i.e. portions of public sidewalks and median improvements that fall within City-owned public ways, and public spaces built on land owned by others, such as the Farnsworth pedestrian link). These improvements provide an additional 3.4 acres of public open space, bringing the total pedestrian-oriented public space created or improved by the Project to over 10 acres.

In addition to the major new public green spaces already created by the Project's construction, the NPC Project will create a major new pedestrian and bicycle link between Summer Street and the edge of Boston Harbor that will redefine the public image of the Seaport District and open up new paths of travel for commuters, visitors, and residents alike that have never before been possible in the area. The NPC Project will also redefine the streetscape along Seaport Boulevard and create an improved pedestrian experience along Seaport Boulevard between the Moakley Bridge and Pier 4 Boulevard. The physical public realm will be dramatically improved over existing conditions, which will promote a dramatic increase in the retail and restaurant activation of the public realm. The Seaport Boulevard corridor will be re-prioritized into a 21st century place that promotes pedestrian and bicycle traffic over the motor vehicle – all without reducing the vehicular throughput capacity of the corridor, as it remains a critical corridor for vehicular travel as well, both by passenger vehicle and for commercial transport.

The Project has already begun to fill an existing urban void and link together separate clusters of diverse activity and urban fabric by establishing a series of connections between the Financial District, the waterfront area, the Fort Point Channel Landmark District and the Fan Pier and Pier 4 projects. These connections stitch together previously isolated entities such as the Institute of Contemporary Art, the Seaport World Trade Center, and the Boston Convention and Exhibition Center (BCEC). Building on the successes of the 2010 Project, the NPC Project seeks to apply the lessons learned over the intervening seven years, respond to the changing dynamics in the Seaport District and along the major streets in the Fort Point Channel Landmark District, and provide further public realm improvements that will help to organize and weave together the entire complement of buildings, streets, and public realm amenities, that together comprise the Seaport Project.

1.2.1 Public Spaces

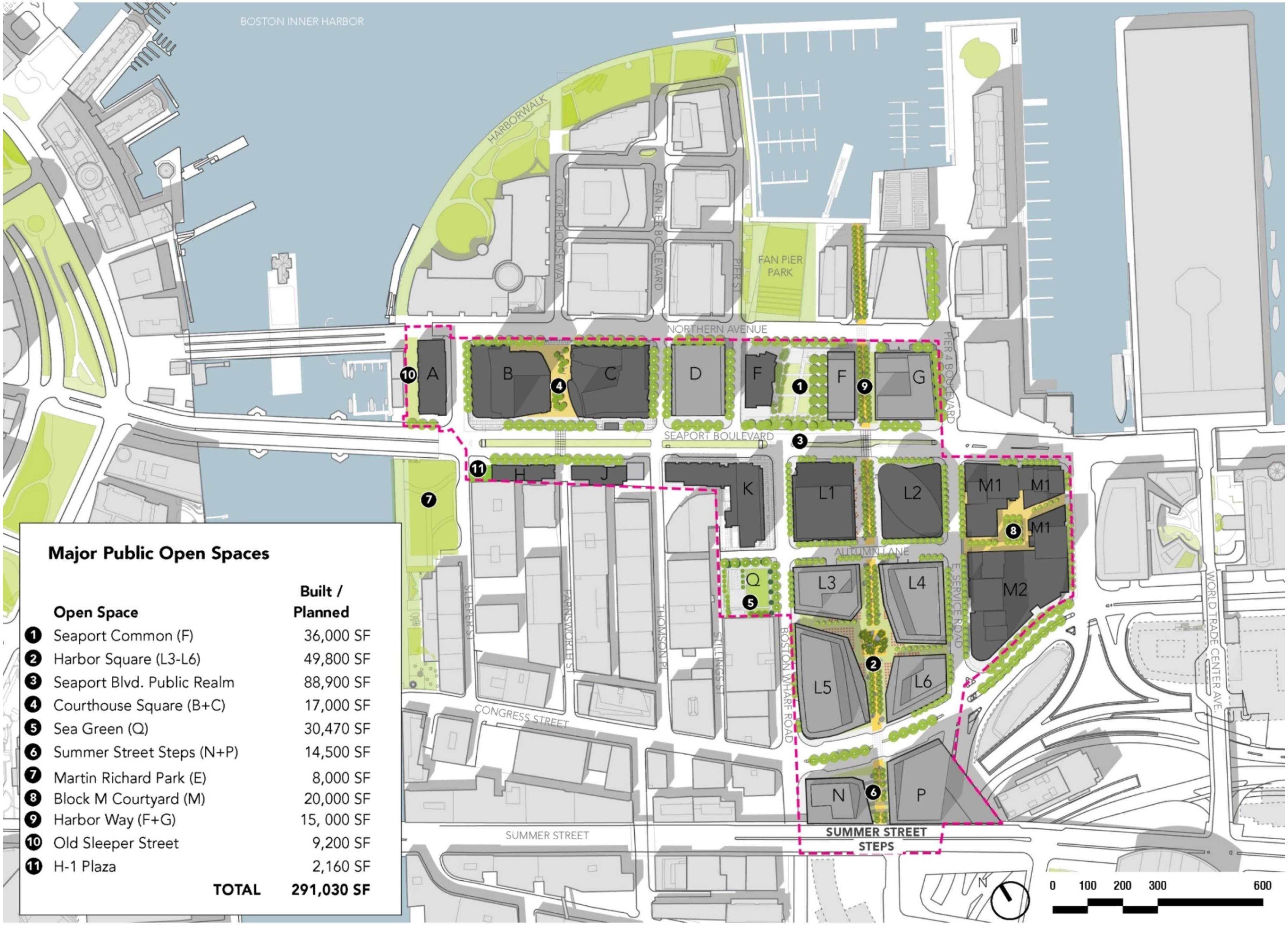
The Project as a whole will result in the construction of seven new distinct major public spaces, several of which have been completed or are under construction. These new spaces establish important pedestrian and visual connections and provide open space amenities serving the entire district and beyond; Seaport Common, the home of the Massachusetts Fallen Heroes Memorial, is already an important public green space that has become a destination for visitors from around the state and across the nation. The major public spaces that have been or will be created in connection with the Project's development include:

- ♦ Re-imagined Seaport Boulevard (NPC Project);
- ♦ Seaport Common (Block F) (2010 Project, as amended);
- ♦ Sea Green (f/k/a Block Q Park) (2010 Project);
- ♦ Harbor Way between Summer Street and the water's edge (NPC Project);
- ♦ Harbor Square within the Blocks L3-6 (f/k/a Seaport Hill) (NPC project);
- ♦ Block M Courtyard (2010 Project); and
- ♦ Courthouse Square on Blocks B & C (2010 Project).

This network of public open spaces is illustrated in Figure 1-5 and each individual element of this network is described in greater detail below. In total, the Project's open space network will represent the full spectrum of open space types, from larger green spaces intended mostly for passive and contemplative uses to well-appointed active recreational spaces for people of all ages and pets, to intensely activated, retail-lined hardscape spaces that contribute greatly to the vibrancy and energy of the entire district. The open spaces proposed specifically as part of the NPC Project are intended to further diversify the range of public spaces that populate the Seaport District and also to implement a vision for the unification and organization of previously constructed elements of the Seaport.

1.2.1.1 Seaport Boulevard

Seaport Boulevard is the main axis connecting Downtown Boston to the Seaport District and today has a physical scale and materials palette that is not conducive to a world-class pedestrian experience. Modest improvements along Blocks F, K, and L1 have already been made, but the NPC Project contemplates a corridor-wide series of improvements between Sleeper Street and Pier 4 Boulevard to complement recent improvements and those under construction or planned in connection with Blocks B, C, H, and J. Once improved as contemplated in the NPC Project, Seaport Boulevard will bring a new street experience to the City, as shown in Figure 1-6. Tree-lined and furnishing-rich sidewalks and a wide, landscaped median planted with mature trees and potential public art installations, will create a pleasant, visually interesting, tree-canopied stroll for pedestrians from the Financial District to Harbor Way and beyond to the World Trade Center complex. Small local shops and boutiques will be interspersed with national retailers and restaurants to create a vibrant streetscape consistent with the vision for a world-class 21st century Boston neighborhood. Already this transformation has begun, with modest improvements and the addition of new retail and restaurant amenities in Blocks K and L1, with many more such amenities under construction in Blocks B & C, which are expected to be completed in the fall of 2017. The



Major Public Open Spaces

Open Space	Built / Planned
1 Seaport Common (F)	36,000 SF
2 Harbor Square (L3-L6)	49,800 SF
3 Seaport Blvd. Public Realm	88,900 SF
4 Courthouse Square (B+C)	17,000 SF
5 Sea Green (Q)	30,470 SF
6 Summer Street Steps (N+P)	14,500 SF
7 Martin Richard Park (E)	8,000 SF
8 Block M Courtyard (M)	20,000 SF
9 Harbor Way (F+G)	15, 000 SF
10 Old Sleeper Street	9,200 SF
11 H-1 Plaza	2,160 SF
TOTAL	**291,030 SF**

Figure 1-5

Major Public Open Spaces

Figure 1-6

Seaport Boulevard Median Improvements

Seaport Boulevard pedestrian experience will also be enhanced dramatically by the addition of three levels of retail and entertainment amenities in Blocks B and C (One Seaport, the Benjamin and Via buildings). The theater, bowling, restaurant, and fitness amenities to be constructed in this complex will be major regional destinations for visitors to the Seaport District, adding significant street life and vitality at the gateway to the District.

The Project will also provide new restaurants, retailers, local services, and cafes for area employees and neighborhood residents to enjoy along Seaport Boulevard. The first new retail and restaurant amenities that have been opened along Seaport Boulevard have experienced great popularity among residents, office workers, and visitors to Seaport. For example, CVS Pharmacy has been opened in Block K along Seaport Boulevard, providing a long-sought major neighborhood amenity, alongside several other small restaurants, cafes, and local services.

Seaport Boulevard will continue to emerge as a retail promenade of regional prominence, not only enhancing the pedestrian experience but also providing safer and more efficient bicycle and motor vehicle circulation capacity. The NPC Project contemplates continuing and updating the improvements planned as part of the 2010 Approvals, some of which have been implemented on a block-by-block basis by individual projects. The NPC Project also enhances the already contemplated upgrades to Seaport Boulevard by increasing the density of planting and potentially adding public art installations within the median and sidewalk along Seaport Boulevard. The Landscape Architect of the High Line Park in New York City, James Corner Field Operations, is leading the design of the future improvements to Seaport Boulevard, which will synthesize with and complement the existing sidewalk improvements to ensure continuity of the materials palette throughout the Seaport Boulevard corridor.

A gracious sidewalk with a double row of trees is planned for (and in the case of Block F, has been constructed on) the north side of Seaport Boulevard to accommodate generous outdoor seating areas and sidewalk entertainment. A wide sidewalk with a single row of trees is planned for (and in the cases of Blocks K and L1, has been constructed on) the south side of the Boulevard.

The buildings that line Seaport Boulevard are designed to mediate two distinct urban fabrics: on the northern side of the Boulevard, a series of taller buildings matches the height of the Fan Pier buildings and provides a clear and activated urban edge to the waterfront area, while buildings along the southern side of the Boulevard along the length of the northern edge of the Fort Point Channel Landmark District extend the scale, massing, and height of the adjacent industrial brick warehouse fabric, creating an architecturally distinct edge to the Fort Point Channel Landmark District. The transition in scale and massing of these two different streetwall conditions along Seaport Boulevard has been further articulated by each building's planned architecture.

1.2.1.2 Seaport Common

As depicted on Figures 1-7, 1-8 and 1-9, Seaport Common is a multi-functional urban open space that is located alongside District Hall and directly across the street from Fan Pier Green. It stands at the intersection of the area's major urban axes and acts as a focal point of activity and public access for the Seaport District and adjacent developments. Defined by Seaport Boulevard on one side and Northern Avenue on the other, it connects to the Fan Pier Green, creating a continuous public space that reaches the waterfront and connects directly to the Harborwalk.

Construction of Seaport Common was completed in the spring of 2016 and already it has become a hub of neighborhood activity and a regional destination. In connection with the Proponent's ownership and stewardship of Seaport Common and commitment to creating a 21st century neighborhood for all Bostonians, the Proponent has engaged in a program of public events and activities on Seaport Common throughout the summer and fall of 2016. These activities have included regular fitness classes, a successful speaker series, a Boston Symphony Orchestra concert, a cooking demonstration, a neighborhood holiday festival (the first annual Seaport Holiday Tree lighting), and a series of other events all free and open to the public that are designed to create a sense of community centered on Seaport Common. The Massachusetts Fallen Heroes organization has also hosted a number of events in Seaport Common that have further activated the space since the dedication of the Massachusetts Fallen Heroes Memorial in May of 2016. Despite having been complete for less than one year, Seaport Common is already fulfilling its intended purpose as a major piece of common ground for the Seaport and beyond, and host to numerous public activities and events that add vitality and interest to the Seaport District for residents, workers, and visitors alike. The Proponent intends to expand its programming and public event series in Seaport Common in the summer of 2017 and in the years to come.

As contemplated in the 2010 Project, the Proponent will construct a new MBTA head house/station entrance adjacent to Seaport Common to further enhance and promote public access to this important public amenity and connection to the waterfront open space now completed on Fan Pier. When the Silver Line Phase II infrastructure was built and opened in 2004, it was the hope of the public and the MBTA that future development in the Seaport District would embrace the new bus rapid transit (BRT) mode of public transportation. Today, the Silver Line is indeed a major mode of commuting for residents and employees of the Seaport. A prominent Silver Line head house at the Seaport Boulevard corner of Seaport Common, which will be constructed in connection with the development of Block D, is a natural nexus for activity and people that will both enhance the success of the public open space immediately adjacent and provide a more convenient point of access to the Silver Line for employees in the Fan Pier, Pier 4, and Block D, L1, L2, L4, and L5 office buildings than is offered by the current head house locations. The location of this head house, with

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Figure 1-7

Seaport Common (Block F) Aerial View

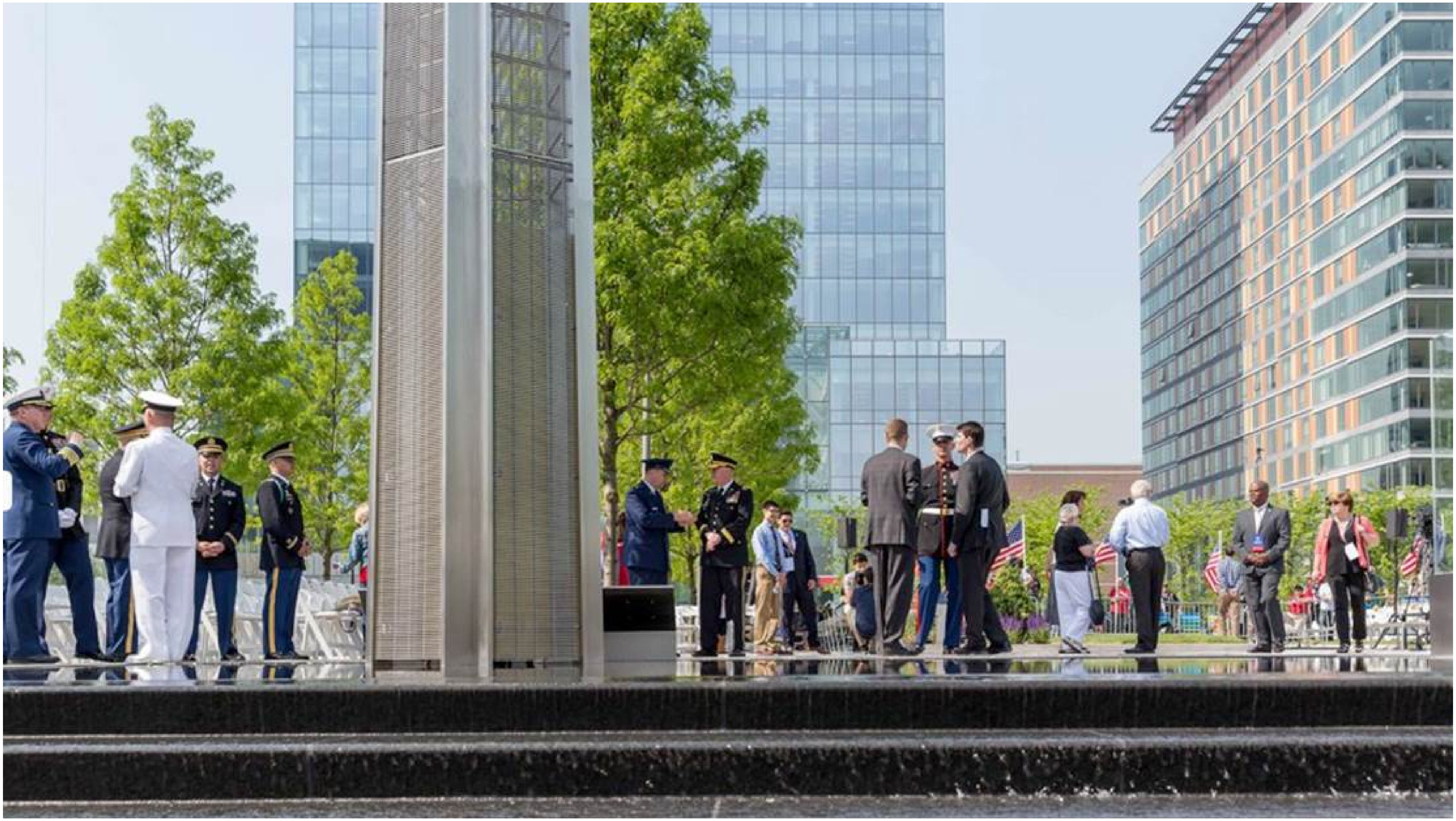

Figure 1-8

Seaport Common – Massachusetts Fallen Heroes Memorial Dedication

Figure 1-9

Seaport Common – Holiday Tree Lighting Event direct visual and pedestrian access to the water's edge, will promote public access to the waterfront through a network of permanent public open space, from Seaport Common and Fan Pier Green to the Harborwalk.

1.2.1.3 Courthouse Square

Courthouse Square is an outdoor public space located across from the Moakley Federal Courthouse. It connects Seaport Boulevard to Northern Avenue with a 17,000 square foot public piazza lined with retail, restaurants, and entries to upper-level restaurant and entertainment uses (see Figures 1-10). This broad public space, located on Blocks B and C, is being constructed to include electrical, digital, and other physical infrastructure and movable street furniture that will allow the space to be programmed with public activities that will make Courthouse Square an inviting and well-used public space. Complementing several more contemplative public spaces in the immediate vicinity, such as Seaport Common, Fan Pier Green, and the Fan Pier section of the Harborwalk, Courthouse Square is viewed as a lively, vibrant public place, situated among the almost 250,000 square feet of retail, restaurant, and entertainment uses, and between the two residential buildings that comprise the One Seaport Boulevard project.

1.2.1.4 Harbor Way

The NPC Project proposes to create a major new north-south multimodal connection between Summer Street and the Harbor's edge called Harbor Way, as shown on Figure 1-11. This new axis of travel will create a north-south pedestrian and bicycle thoroughfare through the heart of the Seaport District that will help to organize and unify the development blocks within the Project Area and serve as a major open space and transportation amenity to residents, commuters, and visitors. Harbor Way is emblematic of the Proponent's commitment to creating an extraordinary sense of place for people and bicycles throughout the Seaport, addressing many of the past concerns about the district's existing car-centric conditions. Harbor Way will also serve as a "Cultural Corridor" connecting the Institute of Contemporary Art (ICA) to the BCEC and multiple other cultural institutions and installations in the vicinity of the Project. The intent of the Cultural Corridor is to establish the area as a new cultural destination for the City, activating the South Boston waterfront and contributing to its economic success and neighborhood quality of life. Additional cultural and civic uses designed to reflect the diverse needs of the city cultural community will be infused into the Blocks along Harbor Way to help create a meaningful cultural destination in the Seaport. The nature of these cultural facilities will be consistent with the needs identified in conversations with local cultural organizations and with the BostonCreates Cultural Plan recently completed by the City of Boston. As described more fully in Section 1.4.3, additional cultural and civic uses designed to reflect the diverse needs of the city's cultural community will be infused into the blocks along Harbor Way to help create a meaningful cultural destination in the Seaport.

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Figure 1-10

Courthouse Square

Figure 1-11

Plan View of Harbor Way

The NPC Project differs from the originally approved 2010 Project in that Harbor Way is envisioned as an entirely pedestrian and bicycle-oriented amenity; it no longer includes a new vehicular bridge over Congress Street to Summer Street. Furthermore, Harbor Way will extend from Summer Street all the way past Seaport Boulevard and Northern Avenue to the edge of Boston Harbor (working in collaboration with the Fallon Company to complete the landscape development of the final block of Harbor Shore Drive in a manner that is consistent with the landscape and hardscape vocabulary of the rest of Harbor Way and the new water transportation terminal recently completed by the Fan Pier development. This important connection will also facilitate travel from within the Project Area by water transport, helping to alleviate vehicular congestion on area roadways and reduce the Project Area's carbon footprint.

Anchoring the waterfront end of this corridor is the ICA's visionary building, a globally recognized icon of contemporary culture, and a catalyst for the arts in Boston. The ICA, Harborwalk, and the new water transportation terminal completed as part of the Fan Pier development will form the northern terminus of the Harbor Way.

Harbor Way is envisioned as a richly landscaped and hardscaped pedestrian boulevard of exceptional urban design quality and visual interest. It is being designed by James Corner Field Operations, the landscape architect for the High Line in New York and many other well-known public spaces throughout the country. Harbor Way will be lined along its entire length with active public uses such as restaurants and cafes, retail shops, entertainment/recreational venues, and cultural/civic uses. Public art installations will create visual interest all along the approximately 1/3-mile length of Harbor Way, and pedestrian wayfinding and visual cues – in addition to the direct view corridor to the Harbor from the top of the Summer Street stairs - will help to promote connectivity to the water's edge all the way back to Summer Street. Figures 1-12 and 1-13 provide imagery depicting the quality and visual interest of Harbor Way as a major public space for the City of Boston.

In addition to serving an important district-wide role as a linear pedestrian promenade, Harbor Way will be anchored at the center of the L3-6 blocks by a major public open space. This space, Harbor Square, is in the location of open space planned as part of the 2010 Project, but its design and purpose has been re-envisioned in the NPC Project to add more public vitality and pedestrian connectivity to the district as a whole.

Harbor Way will also create a new connection between the major east-west axes of Summer and Congress Streets and the Harborwalk at the edge of Boston Harbor, completing an approximately 1.5-mile "Harbor Loop" that provides pedestrians and bicyclists with a diverse set of experiences. Starting from the ICA, the first mile of the loop curves along Fan Pier and south along the edge of Fort Point Channel, then turns east through the historic architecture of the Fort Point Channel Landmark District, before turning north to close the loop along Harbor Way, a contemporary and bustling linear public open

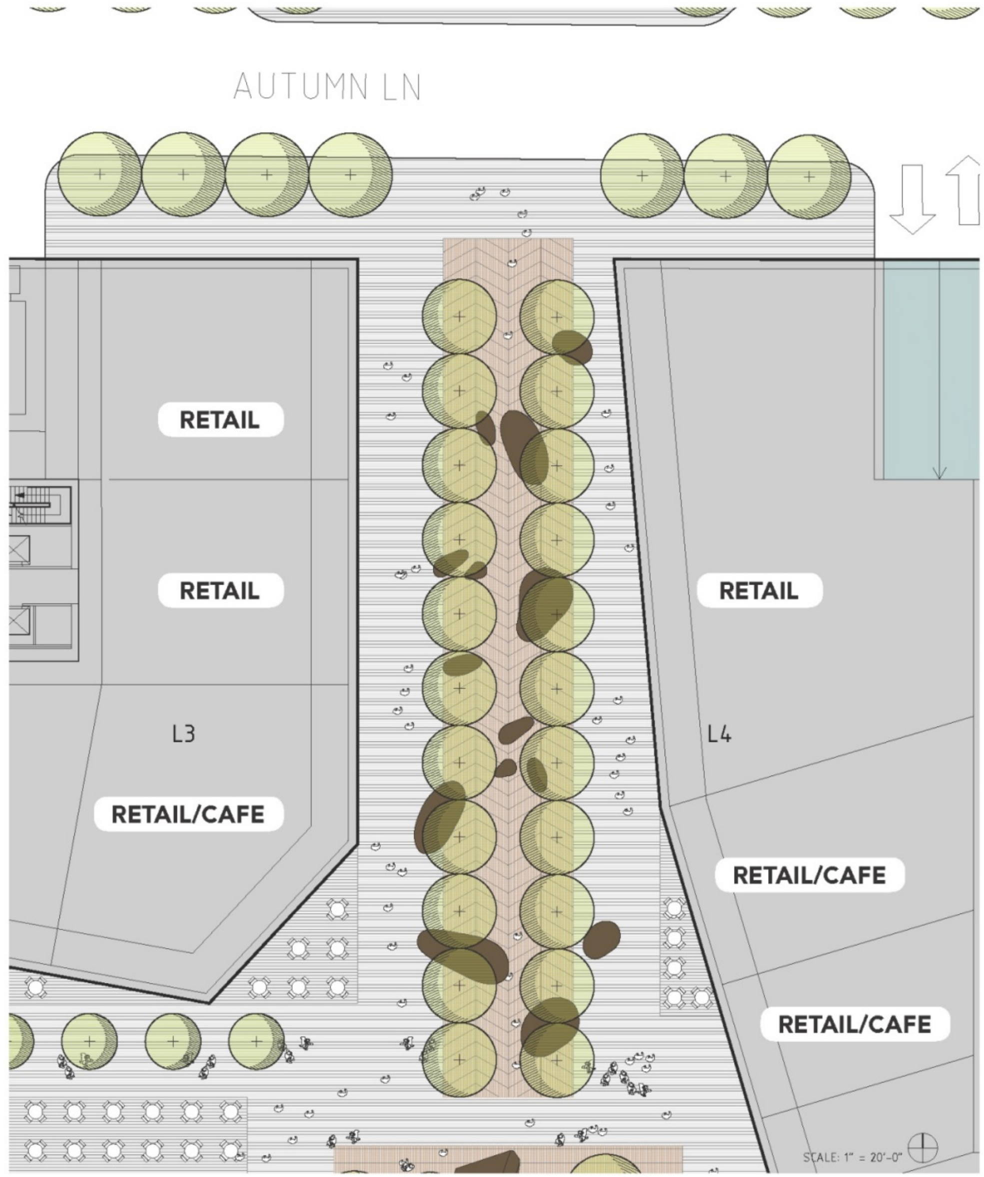

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Figure 1-12

Perspective and Plan Views of Harbor Way (Blocks L3-L4)

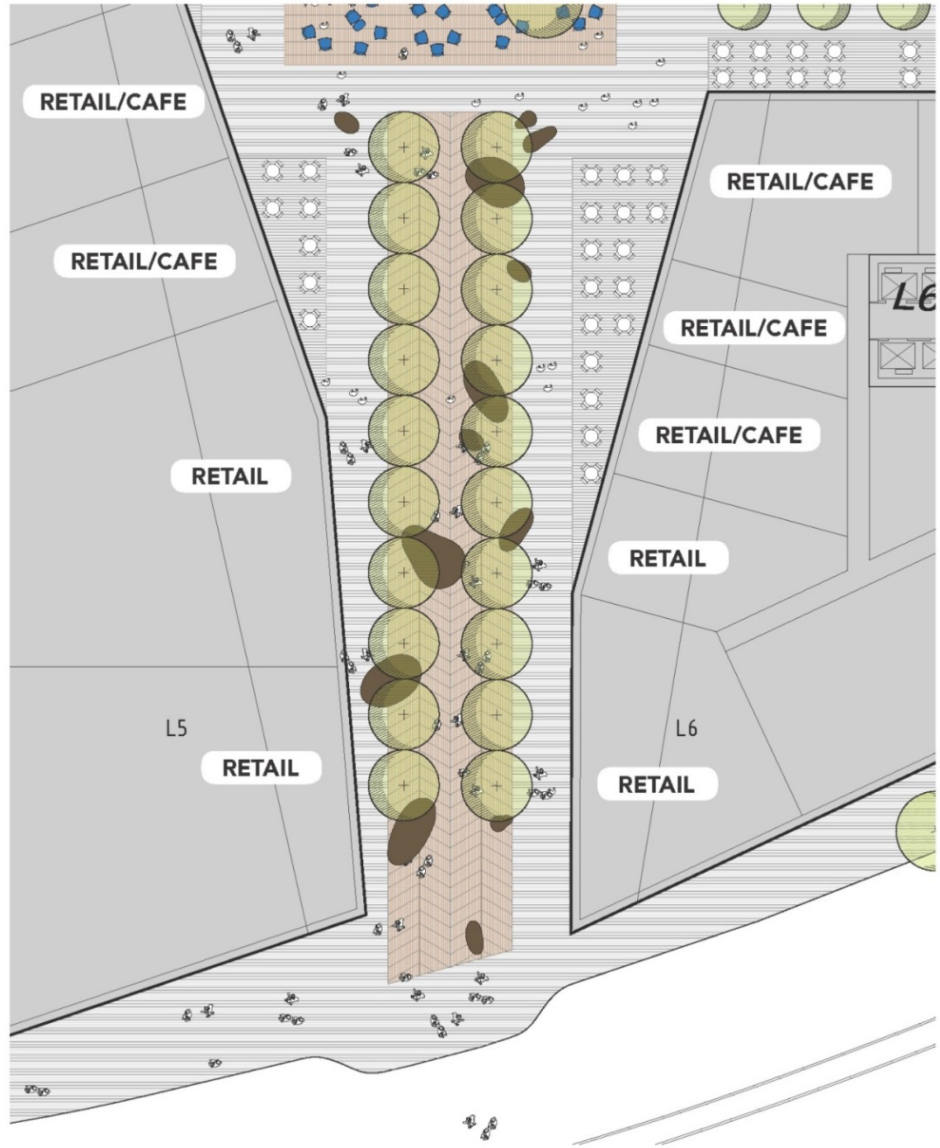

Figure 1-13

Perspective and Plan Views of Harbor Way (L5-L6) space lined with world-class retail, cafes, and cultural amenities. The Harbor Loop will take its place alongside other beloved and quintessentially Bostonian walking routes, such as the Commonwealth Avenue Mall, Charles River Esplanade, Jamaica Pond circuit, Castle Island, and Rose Kennedy Greenway.

From a broader area-wide planning perspective, Harbor Way will also create a major axis of travel that will help to knit together future development on the U.S. Postal Service land located south of Summer Street. As a major organizing feature of the central Seaport, Harbor Way creates a strong framework for long-range future growth south of Summer Street and provides a future connection to open space networks beyond the Seaport District, such as the South Bay Harbor Trail and its connection to the Emerald Necklace via Melnea Cass Boulevard.

1.2.1.5 Harbor Square

The Harbor Way linear public open space will be anchored by a café-, restaurant-, and retail-lined multi-use public space called Harbor Square at the center of Blocks L3-L6. Designed by world-renowned landscape architecture firm James Corner Field Operations, Harbor Square is envisioned as a hub of year-round activity in the Seaport District and an active public open space. Harbor Square is designed like a European piazza that takes its landscape cues from the New England coastline, ringed with multiple levels of retail, cafes, and restaurants with hundreds of outdoor seats surrounding a central active gathering place that will play host to numerous seasonal events and activities. The central space within Harbor Square will be richly landscaped and hardscaped, but also built with active uses in mind through the provision of a dense network of event-related infrastructure including power, digital, water supply and natural gas connections, sanitary facilities, and other services that would be needed to support major public events. The flexibility built into the piazza is essential to hosting the variety and frequency of public events envisioned for the space. A plan of Harbor Square, renderings, and illustrative imagery of event possibilities is included as Figures 1-14 through 1-20. With Harbor Square as their center of gravity, events such as farmers' markets, fashion shows, seasonal festivals, and craft fairs will be able to spill onto Harbor Way to extend public activity north and south throughout the Project Area. In addition to the major axial connections to the north and south along Harbor Way, Harbor Square will also feature smaller, more intimate and distinctly Bostonian angled pedestrian passageways leading east and west, which are aligned visually with points of interest, the Sea Green (Block Q) open space to the west across Boston Wharf Road and the prominent "bullnose" architectural element of the Block M project to the east, which will be a major retail hub and destination.

The approach to Harbor Square as an active and heavily programmed urban piazza complements the open greenspace areas that have already been developed throughout the Seaport District, both as part of the 2010 Project (i.e. Seaport Common and Sea Green) and as part of other nearby projects (Fan Pier Green, Fan Pier Harborwalk, Eastport Park, 100

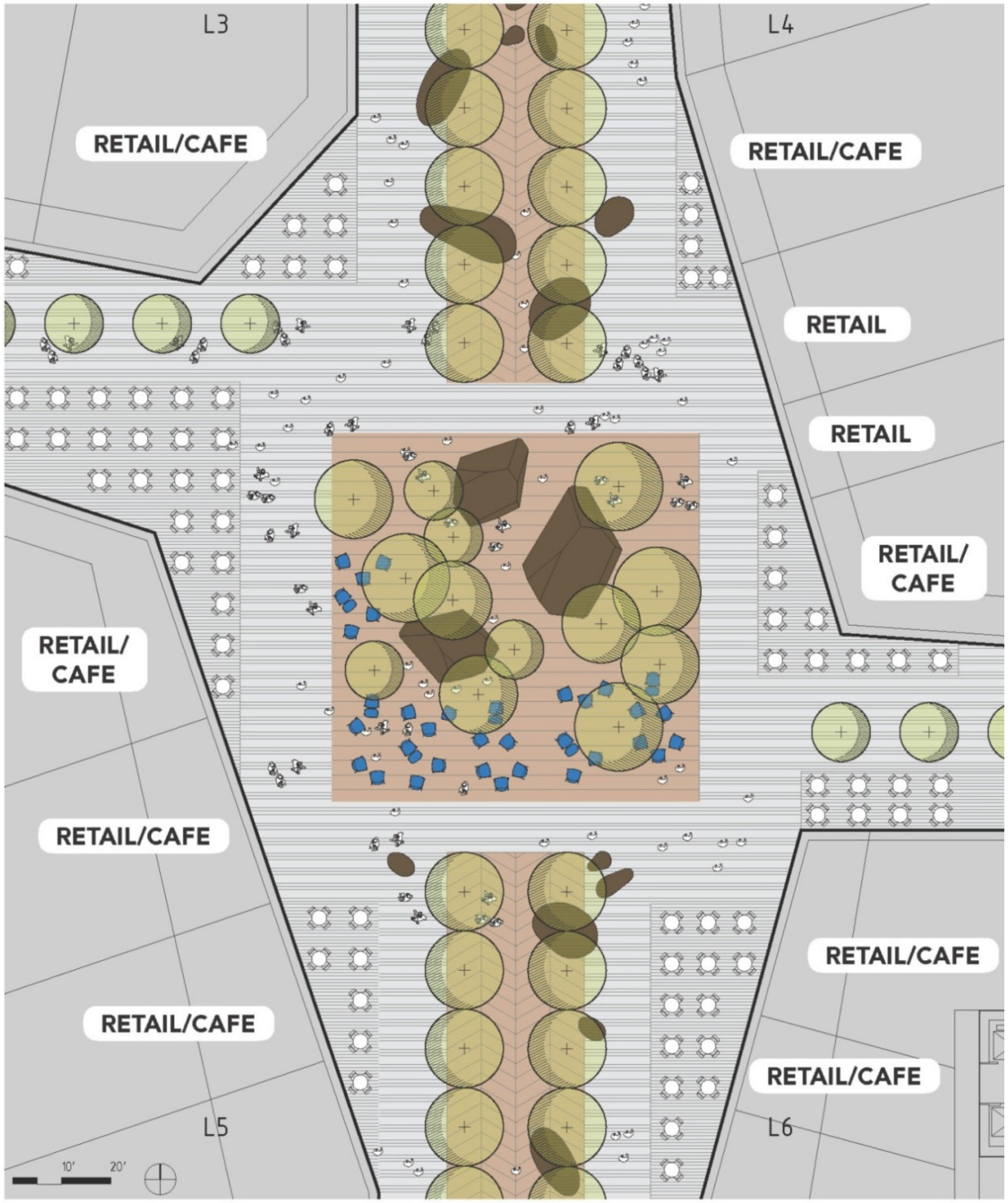

Figure 1-14

Plan View of Harbor Square

Figure 1-15

Eye-Level View of Harbor Square

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Figure 1-16

Bird's-Eye View of Harbor Square

Figure 1-17

Harbor Square Concept

Figure 1-18

Harbor Square Ice Skating Rink Concept

Figure 1-19

Harbor Square Market Concept

Figure 1-20

Harbor Way Square Fashion Runway Concept

Acres Master Plan, Iron Street Park, and others). The Proponent has observed that a vibrant 21st century neighborhood needs both passive and active open spaces and Harbor Square will provide numerous opportunities for public activations and cultural events that will be regional draws in addition to providing neighborhood amenities to support the growing residential population and cultural identity of the Seaport District.

1.2.1.6 Sea Green (f/k/a Q Park)

The first major public realm amenity within the Seaport Square Project to be completed was a 3/4-acre active recreational use space located on Block Q of the Project. This public open space was initially known as Q Park but has been re-named Sea Green in reference to its large lawn area. In addition to a large green space, Sea Green features a popular neighborhood dog run and active use amenities such as a half-court basketball court and a well-appointed children's play area that includes a variety of active play equipment. In the two years since Sea Green's completion, it has become a focal point of neighborhood use by residents and employees, and a primary destination for dog owners in the area. To further enhance the community focus of Sea Green, the Proponent has sponsored and arranged a number of free public activities on Sea Green in 2016, including fitness classes, a popular and interactive public art installation, and a Boston Ballet performance. Sea Green is an important complement to the spectrum of public open spaces in the Seaport District because it includes both open green areas suited to passive use and spaces and installations dedicated to active recreational use by all ages.

1.2.1.7 Block M Courtyard

Anchoring the center of the 3.4-acre Block M development site will be an intimate and bustling public space modeled on the café-lined town squares found in small European towns and quieter pockets of large European cities. Dominated by a rich materials palette and diverse array of building architecture surrounding the central public space, the Block M Courtyard will be a place of respite from the surrounding city fabric, offering a range of café, dining, and boutique shopping experiences. The central courtyard is connected to surrounding streets on three sides of the project Block by intimately scaled, boutique-lined pedestrian ways that connect to Harbor Square across East Service Road to the west and the water's edge across Seaport Boulevard to the north and northeast. The Block M Courtyard, with a total public realm area of 14,050 square feet (1/3 acre), provides yet another type of urban room within the Seaport project that will contribute to the diversity of public experiences available within the Project Area and further enhance the public's enjoyment of the Seaport District.

1.3 Development Program / Summary of Project Changes

The 2010 Seaport Square Project included 23 buildings of varying sizes on 20 Blocks with a total of approximately 6.3 million square feet (sf) of gross floor area of total development. The NPC Project will include approximately 7.7 million square feet of gross floor area of development, representing a significant increase in the number of housing units and density of innovation office space spread across the Project Area. As shown in Figure 1-21, the NPC Project contemplates:

- Increasing the total gross floor area of residential uses for the Project from 2.8 million sf to up to 3.2 million sf (from approximately 2,500 residential units to up to approximately 3,200 residential units) to support the continued emergence of a thriving residential neighborhood in the Seaport District;

- Increasing the total gross floor area of office/innovation uses from approximately 1.2 million sf to up to 2.9 million sf to support the continued growth of the city's innovation economy;

- Maintaining approximately 1.1 million sf of retail, restaurant, services, and entertainment uses within the Project to create a vibrant retail and dining hub serving the city's residential, business, and visitor communities alike;

- Introducing a diverse array of cultural and civic uses across the NPC Project blocks that is reflective of the carried needs and interests of Boston's arts and cultural community;

- Building a total of up to 500,000 sf of hotel uses within the Project to support the visitor economy in Boston;

- Creating Harbor Way - the pedestrian focused and amenity rich path through the L Blocks, across Seaport Boulevard and to the water's edge;

- Building the Summer Street Steps and a complementary accessible route to provide access from the elevated Summer Street corridor to Congress Street and the rest of the Seaport District,

- Reimagining the Seaport Boulevard Median design to bring a pedestrian sense of scale to the entrance of and main thoroughfare through the Seaport District; and

- Reducing the overall number of parking spaces to be constructed in order to moderate the number of vehicular trips into and out of the district on a daily basis.

Seaport Square Boston, Massachusetts

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Figure 1-21

Bird's-Eye View of Seaport

The focus of the proposed increase in development density includes the provision of additional housing opportunities in the Project Area consistent with the City of Boston's policy objective of creating 53,000 additional housing units by 2030, and in support of the Seaport's continued emergence as a unique and vibrant residential neighborhood. The NPC Project will also provide additional spaces to accommodate the growth of the Seaport's innovation economy, since the 2010 Project's original formulation pre-dated the emergence of a robust innovation ecosystem in the Seaport District and the arrival of employers such as Vertex Pharmaceuticals, GE, LogMeIn, and many others. Today, the NPC Project Site represents one of the last opportunities to attract major innovation economy companies to the Seaport due to the lack of other available development sites located in close proximity to transit, residential density, and the diverse array of community and cultural amenities that these types of employers seek out nationally.

The 2010 Project included approximately 6,500 parking spaces to be constructed in subsurface garages. In light of the importance of mitigating transportation impacts in the Seaport District and the rapidly changing dynamics surrounding personal vehicle usage in newly developed areas like the Seaport, the NPC Project is proposing to reduce significantly the number of parking spaces constructed within the Project Site to approximately 5,500 spaces – a 15% reduction in total parking count and an even further reduction in parking ratios. Empirical evidence described in Section 3.0 of this filing demonstrates that the actual vehicle utilization rates for both office and residential uses within the Project Area, based on projects completed to date, is well below projections made in 2009-2010, which preceded the advent of the shared MCCA shuttle service, ridesharing services such as Uber, Bridj, and Lyft, and the growth of the City of Boston's Hubway bicycle sharing system.

Every building within the Project Area, with the exception of the relocated Chapel on Block H, will include retail, restaurant, and/or service uses at ground level to provide an inviting and animated pedestrian experience throughout the district. Based on the lessons learned since the 2010 Project's approval and the emergence of a robust residential community in the area demanding local services, the Proponent is proposing to continue its practice of blending smaller, local boutiques, cafés, and restaurants with larger national retailers, restaurants, and entertainment venues to create a vibrant, authentic, and regionally attractive retail environment that provides a diverse array of local neighborhood amenities for local residents and employees as well as regional draws that will add street life and vitality to the district on an 18-hour basis.

The following three tables summarize the NPC Project. Table 1-1 shows the square footage of uses by Block.

Table 1-1 Project Program (including NPC Project changes) – Uses by Block

Block	Total (GFA)	Retail / Entertainment (GFA)	Residential (GFA)	Office / Research (GFA)	Hotel (GFA)	Educational/ Cultural (GFA)
Block A*	85,800	-	-	-	85,800	-
Block B* Block C*	980,000	230,000	750,000	-	-	-
Block D	499,400	69,400	-	425,000	-	5,000
Block F	121,000	58,000	-	63,000	-	-
Block G	671,800	85,800	581,000	-	-	5,000
Block H*	22,400	-	-	16,200	-	6,200
Block J*	99,000	-	-	-	99,000	-
Block K*	298,732	23,732	275,000	-	-	-
Block L1*	455,300	20,925	-	434,375	-	-
Block L2*	432,038	59,638	-	372,400	-	-
Block L3	422,000	56,000	366,000	-	-	TBD
Block L4	523,540	81,000	-	442,540	-	TBD
Block L5	722,000	112,000	-	610,000	-	TBD
Block L6	343,000	51,000	-	-	292,000	TBD
Block M1* Block M2*	1,012,000	125,000	887,000	-	-	-
Block N	422,000	72,000	350,000	-	-	TBD
Block P	566,000	75,000	-	491,000	-	TBD
Block Q	4,000	4,000	-	-	-	-
Total	**7,680,010**	**1,123,495**	**3,209,000**	**2,854,515**	**476,800**	**16,200 (minimum)**

Developed Blocks noted with *

This use table summarizes the distribution of land uses across the Project Site but is not intended to be a definitive determination of which uses will be located on which development sites within the NPC Project Site. For example, depending on multiple factors, hotel or residential uses may ultimately be located on any of the development blocks within the NPC Project Site, or commercial or retail uses may be redistributed within the NPC Project Site to accommodate specific user requirements.

Cultural uses are proposed to be interspersed throughout the NPC Project Site, rather than aggregated on a single block as previously contemplated, and Cultural Uses will be proposed to be interchangeable with any other use type on any block within the NPC Project Site in order to promote flexibility to respond to the diverse needs and interests of the City of Boston's cultural community.

Specific use and density changes proposed in this NPC include the following:

On Block D, the NPC Project, like the 2010 Project, proposes a new office/research building. The building will have at least one level of retail on the ground floor. The increased density on this Block will help accommodate the growing innovation economy in the Seaport District and make possible the extraordinary architectural quality and creativity that is envisioned for this building.

On Block F, the NPC Project proposes a new retail and innovation office building located east of Seaport Common with three levels of retail/restaurant uses over a parking garage that will connect to the garage for Block G. The scale of this building will provide a scalar transition between Seaport Common and the high-rise building located on Block G. The ground level of the building will be porous, both physically and visually, and will allow multiple paths of travel through the building with an emphasis on physical and visual connectivity through the building and the site between Harbor Way and Seaport Common. A major retail presence is envisioned along Seaport Boulevard and a public space related to the Massachusetts Fallen Heroes Memorial is planned for the Northern Avenue end of the building. The building is envisioned as one of extraordinary architectural quality and creativity and will play an important role in activating Seaport Common with retail, café, and other public uses, and will also provide an exciting workplace environment for innovation economy firms on the upper floors.

On Block G, the NPC Project proposes a new residential building (which could potentially include a hotel) with multiple levels of retail/commercial space on the lower floors to create a major node of activity and energy at this important central location. The change from office to residential use on Block G will provide additional housing opportunities adjacent to other residences recently constructed at the Fan Pier and Pier 4 developments in addition to Blocks B, C, K and M. Block G will also have retail use on all four sides of the ground floor.

The most significant change to the 2010 Project proposed in this NPC is located on Blocks L3, L4, L5, and L6, at the heart of the NPC Project Site. The 2010 Project envisioned an elevated and mostly enclosed passive lawn area surrounded by an access roadway and residential buildings. While commercial uses were allowed in the 2010 Project on Blocks L3-6, the NPC Project envisions a more diverse mix of uses on the L3-6 block and a much more public and accessible pedestrian and retail environment, which will play a central role in the open space network of the entire Seaport District by connecting Summer and Congress Streets directly to the water's edge at grade. The proposed upper level uses on Blocks L3, L4, L5 and L6 are residential, office/research/innovation, and hotel. The ground floor of all four blocks will be enlivened with retail, cafes, cultural and entertainment uses along Harbor Way, Autumn Lane, East Service Road, Congress Street and Boston Wharf Road, ensuring that the retail and public activity on these blocks benefits all of the surrounding streetscapes in addition to the major pedestrian spine of Harbor Way that runs through the middle of the block. There will be one parking garage under these blocks (which may be constructed in phases) with two entrances/exits. The Proponent is adding density on these four blocks of both additional residential and additional office/R&D uses to support the city's innovation economy and the "live-work-play" dynamic of a great neighborhood. These blocks represent some of the last remaining opportunities to attract major innovation economy employers to the Seaport, especially so close to the kind of dense residential and retail environment that has proven compelling to new economy employers and employees alike. The diverse mix of residential, commercial, and retail uses envisioned on the nearly five acre L3-6 block will ensure an active, pedestrian-oriented 18-hour environment that will be unlike anything else in Boston.

On Blocks N and P, the NPC Project proposes a flexible mix of residential, possibly hotel, and office/research use above two to three levels of retail on the lower levels of each building facing both Congress and Summer streets, adjacent to the Summer Street Steps. This use mix, which is consistent with the mixed-use approach proposed for Blocks L3-6, is intended to support a vibrant, 18-hour retail district starting with a dramatically improved streetscape along Summer Street. The uses proposed for these Blocks generally are consistent with the 2010 Project, although given the infeasibility of constructing and operating a single cultural facility, as contemplated in the 2010 Project, the Proponent will instead seek to promote a diverse array of different types and sizes of cultural spaces throughout the Project, with the goal of making the Seaport a thriving cultural destination. The Proponent will incorporate a variety of cultural uses in multiple locations within the NPC Project Site as the NPC Project is built out (e.g., performance space, gallery space, studio/maker space, public art installation, rehearsal space), and will be allowed to substitute Cultural Uses for any other use category within the NPC Project Site to promote the organic growth of a series of cultural amenities in the district as the NPC Project is built out.

Educational uses will remain allowed in Blocks N and P, consistent with the 2010 Project. Modest increases in density are proposed for Blocks N and P, with the Block P site area expanding to include an additional air rights parcel over the I-90 ramp, which the Proponent is in the process of acquiring from MassDOT. This inclusion will allow for a continuous retail streetwall to be constructed almost as far east as the I-90 ventilation structure, providing a major public realm benefit for pedestrians on the currently barren stretch of Summer Street across from the BCEC.

In general, the NPC Project includes greater density of residential and innovation office space while maintaining the intense cluster of retail, restaurant, and entertainment uses originally envisioned for the District. The Proponent's vision of creating a dense, vibrant mix of land uses on one of the largest urban development sites remaining in the Boston area is intended to promote the continued emergence of a thriving residential neighborhood as well as promote continued growth of the city's and the region's innovation economy and cultural ecosystem in a uniquely pedestrian-oriented and amenity-rich urban environment.

Table 1-2 compares the block-by-block square footages for the 2010 Project and the NPC Project.

Table 1-2 Seaport Square Program – Total Comparison by Block

Block	2010 Project Total (GFA)	Project Total (including NPC Project changes) (GFA)
Block A*	85,800	85,800
Block B*	440,600	980,000
Block C*	620,000	
Block D	465,200	499,400
Block F Park Pavilion	9,200	121,000
Block G	537,800	671,800
Block H*	24,300	22,400
Block J*	98,800	99,000
Block K*	288,400	298,732
Block L1*	494,500	455,300
Block L2*	415,500	432,038
Block L3	230,300	422,000
Block L4	274,200	523,540
Block L5	363,200	722,000
Block L6	248,100	343,000
Block M1*	543,800	1,012,000
Block M2*	439,200	
Block N	347,700	422,000
Block P + Air Rights	410,800	566,000
Block Q	0	4,000
Total	**6,337,400**	**7,680,010**

Developed Blocks noted with *

Table 1-3 compares the square footage for each type of use for the 2010 Project and the NPC Project.

Table 1-3 Seaport Square Program - Use Comparison

Development Program	2010 Project Total (GFA)	NPC Project Total (GFA)	Difference
Retail/Entertainment	1,237,100	1,123,495	(113,605)
Residential	2,840,800	3,209,000	368,200
Office/Research/Innovation	1,157,300	2,854,515	1,697,215
Hotel	859,200	476,800	(382,400)
Cultural/Civic*	243,000	16,200 (minimum)	(226,800)
TOTAL	**6,337,400**	**7,680,010**	**1,342,610**

*N.B.: In addition to the specific requirements noted above, Cultural Uses are intended to be interspersed throughout the NPC Project area and will be substitutable for any other Use type on any Block within the NPC Project Site. The ultimate GFA of Cultural Uses will be determined in accordance with the process described in Section 1.4.3.

1.3.1 Distribution of Land Uses

The Project has been planned (and partially constructed) with a coordinated mix of synergistic uses, which together have created a high quality of life for Seaport residents, workers, and visitors. The NPC Project will continue this successful model of mixing different uses across the NPC Project Site both in plan and in section to create a world-recognized exemplar of a 21st century "live-work-play" neighborhood in one of the world's great cities. This section presents a series of diagrams illustrating the horizontal and vertical distribution of these uses throughout the Project Site and especially within the NPC Project Site, where this blending of multiple uses will create great urban spaces unlike anything else in Boston.

Central to the Proponent's objective of creating multiple great urban spaces and a major regional retail, restaurant, and entertainment destination is the unique application of multi-level retail uses in all of the development blocks within the NPC Project Site. The strategy of enhancing public streets and open spaces with multi-level retail, restaurant, and entertainment uses creates a very high volume of pedestrian traffic and catalyzes the creation of places that people love to be and will return to for a variety of reasons. These most successful urban places, like Newbury Street in Boston or Fifth Avenue in Midtown Manhattan, become character-defining features of great cities. Based on the success of the modest amount of retail already opened by the Proponent in the Seaport District, and the Proponent's strong belief that great places "Start with the Street," the Proponent expects that the Seaport Project will become an important mixed-use regional destination in Boston that nonetheless also serves the everyday needs of local residents in a way that most retail and entertainment destinations around the country do not.

There is a small overall reduction in the total amount of retail proposed in the NPC Project when compared to the 2010 Project. The Developed Blocks did not include as much retail as estimated in the 2010 Project (specifically the Skanska developments on Blocks K, L1, and L2, of which the Proponent purchased and tenanted the retail condominiums upon each building's completion by Skanska Commercial Development), though every block in the NPC project is projected to meet or exceed the retail programming from 2010 to further develop the neighborhood feeling of the Seaport District and increase the diversity of retail amenities available to residents of the area as the NPC Project is developed.

Figures 1-22 and 1-23 provide elevations showing proposed building uses.

1.3.1.1 Ground Floor

The Ground Floor Plan shows continuity of active retail uses between the elevated Summer Street and the grade-level balance of the NPC Project Site, and also show the active and inviting nature of the pedestrian environment Project-wide.

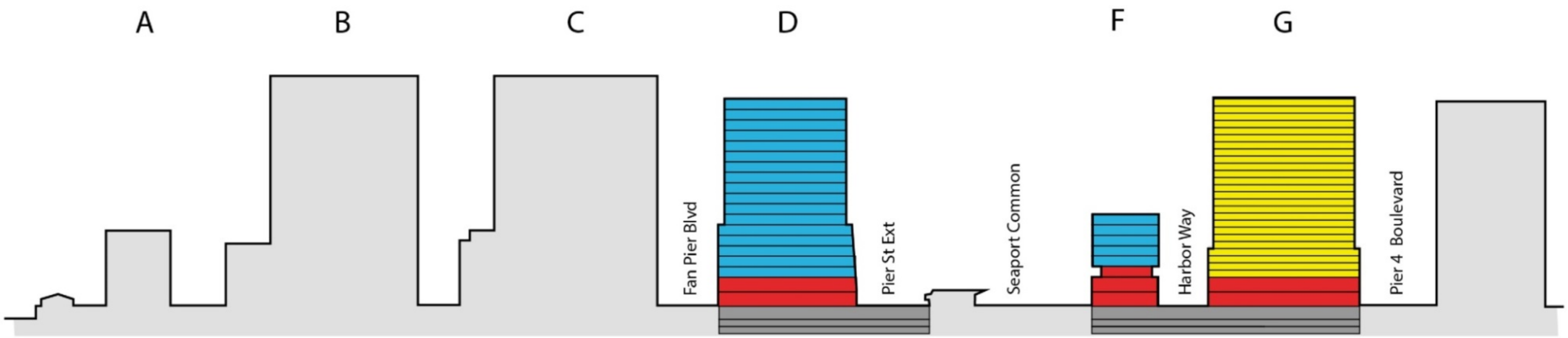
Throughout the NPC Project Site, retail uses, which will enliven the pedestrian experience with active entrances and seating areas outside, are proposed not only on the ground floor but also on multiple levels of building podia to raise the level of activity and visual interest. Ground-level uses are shown in Figure 1-24. This figure also indicates where parking and service/loading entrances are located (indicated with a "P" or an "S," respectively).

1.3.1.2 Grade Transition to Summer Street

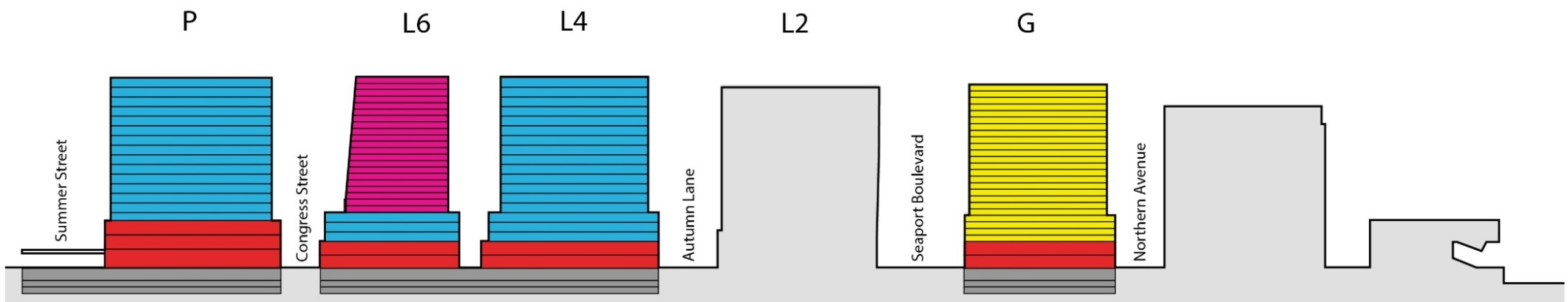
The Proponent proposes to provide direct pedestrian, bicycle, and accessible connections between the elevated Summer Street viaduct and Congress Street by way of a set of richly landscaped and hardscaped stairs (the "Summer Street Steps"), a dedicated elevator, and a cycle ramp to provide a grand civic gesture that also solves a century-old urban design and access issue.

Rather than negatively impact the Congress Street streetscape by constructing a new bridge over the street just east of the Fort Point Channel Landmark District, the Proponent proposes to create a mid-block pedestrian crossing between Boston Wharf Road and East Service Road with pedestrian signals that are coordinated with and controlled by the existing traffic signals on either end of the block. Further discussion of this synchronization and the sufficiency of the walk time provided by this arrangement is discussed in Section 3.0 of this NPC, Transportation.

Congress Street has dramatically improved over the past 10 years as a destination for restaurants, cultural, and hotel attractions, as well as the city's innovation economy, leading the Proponent to seek a new approach to continuing the vibrant and active streetscape environment that has recently emerged along Congress Street in the Fort Point Channel Landmark District. To this end, no elevated structure will be constructed over Congress



Elevation 1 : Seaport Boulevard



Elevation 2 : East Service Road

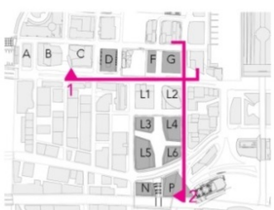
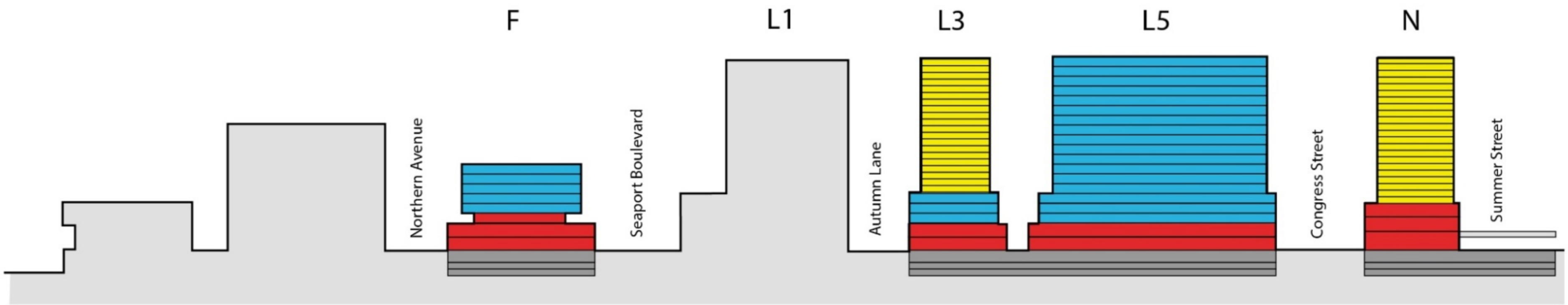
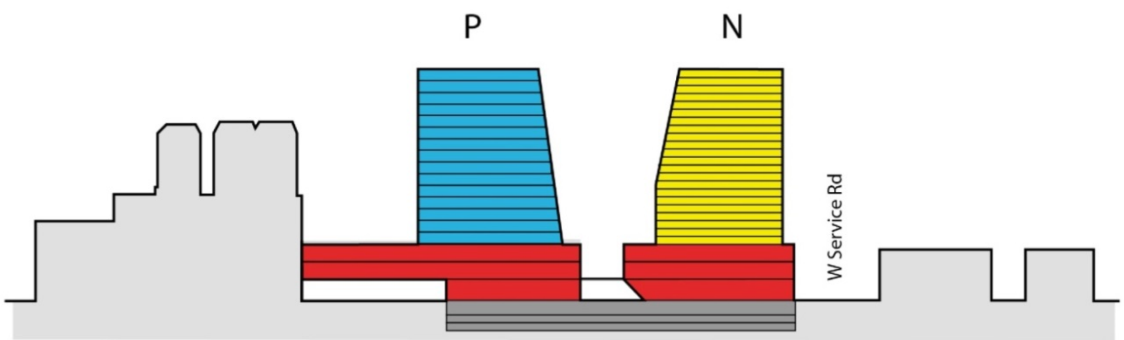


Figure 1-22

Seaport Boulevard and Pier 4 Boulevard/East Service Road Elevations



Elevation 3 : Boston Wharf Road



Elevation 4 : Congress Street

Figure 1-23

Boston Wharf Road and Congress Street Elevations

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Figure 1-24

Ground Floor Plan

Street within the Project Area and the public realm will be characterized by active retail and restaurant uses, anchored by the grade-level Harbor Way pedestrian and bicycle linear public open space. The 2010 Project proposed a truck loading dock facing Congress Street at the location of the NPC Project's proposed Harbor Way open space connection; this truck dock has been eliminated in the NPC Project.

The Summer Street Steps connecting between Summer and Congress streets will be lined on multiple levels with active retail, entertainment, and restaurant spaces on the lower two or three floors of Blocks N and P. The opportunity for a modestly scaled performance space or other civic amenity will also be explored in either Block N or P to further contribute to the cultural life of the Seaport District and create a critical mass of destination uses at the southern end of Harbor Way. A highly visible public accessible route will also be constructed alongside the Summer Street Steps for public use. The experience and design quality of this route will be similar to that of the Summer Street Steps and it is intended that the public would not need to enter into traditionally privatized space such as a residential or office building lobby in order to access this critical accessibility pathway.

Figures 1-25 and 1-26 show a plan view of the Summer Street Steps and illustrate the multi-modal transition between Congress Street and Summer Street.

1.3.1.3 Typical Upper Floor Plan

The typical upper floor plan diagram, as shown on Figure 1-27, identifies the mix of residential, commercial/office, and hotel uses located above the retail podiums of the NPC Project blocks. Beginning north of Seaport Boulevard are the residential buildings at Blocks B and C (the One Seaport project), then the proposed office/research building on Block D. Block F is envisioned as a small innovation office building, while Block G is shown with residential and potentially hotel uses. The intention of this mix of upper-story use types is to create a variety of complementary uses along Seaport Boulevard to anchor the northern edge of the Project Site. On the south side of Seaport Boulevard, Block J is the Yotel hotel and Block K is the residential Watermark Apartments. Additional office buildings are located at Blocks L1 and L2. Blocks L3-L6 surround the Harbor Square public space and are comprised of a mix of residential, potential hotel, and office uses. Blocks M1 and M2 are residential towers above multi-level retail podia surrounding an intimate public space. Hospitality is shown on Block L6, and research uses are shown on Block P, rounding out the diverse array of uses that together comprise the mixed-use Seaport neighborhood. It should also be noted that the NPC Project explicitly attempts to "mix and match" upper-floor uses among neighboring buildings to avoid uniformity of building mass along a particular street wall and curate the most vibrant blend of building architecture possible. It is also envisioned that the use mix within the NPC Project Site will be flexible, to allow the remaining Blocks of the Seaport District to evolve organically over time as they are phased in, just as the city as a whole has evolved since its inception.

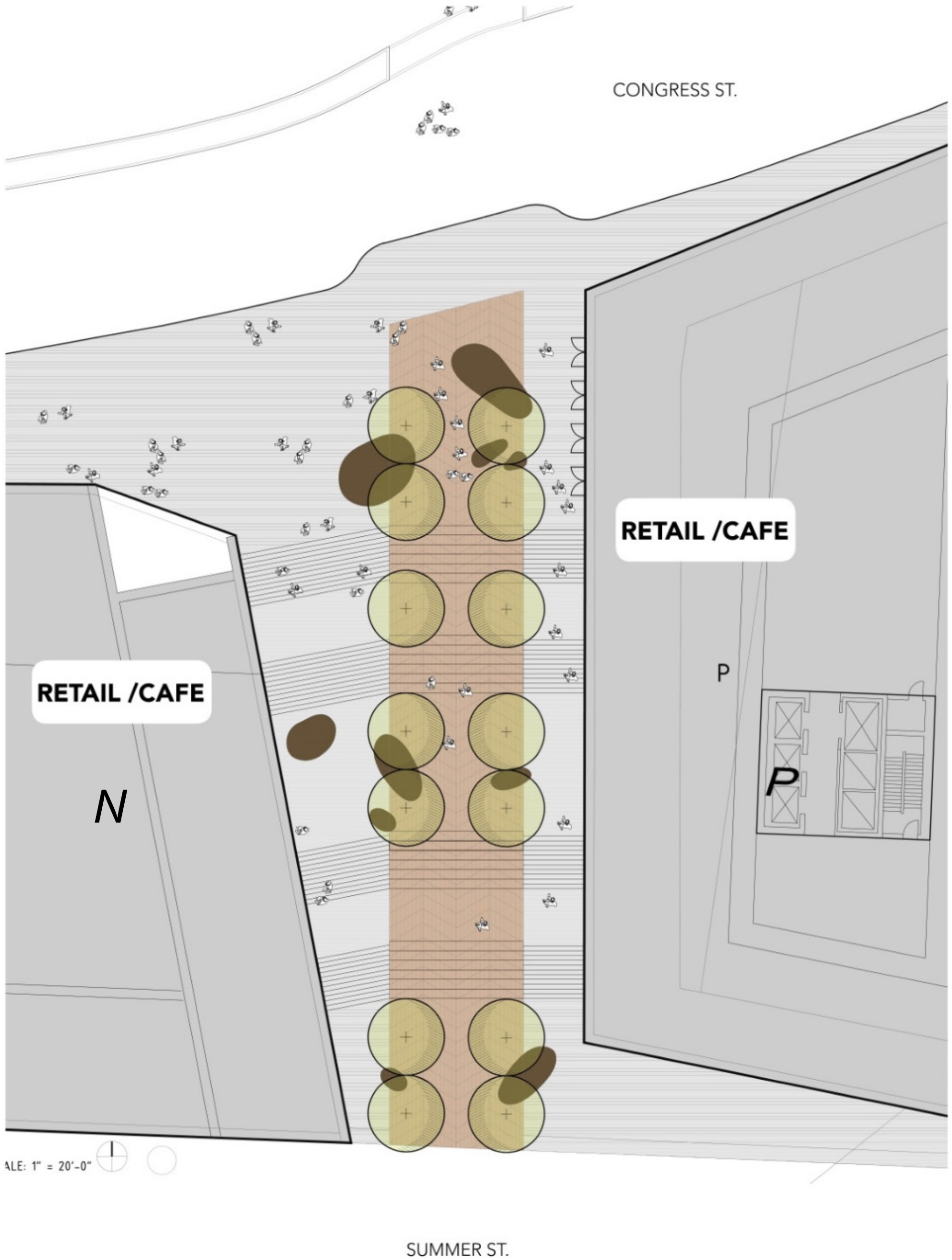

Figure 1-25

Plan View of Summer Street Steps

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Figure 1-26

View of Summer Street Steps from Congress Street

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Figure 1-27

Typical Upper Floor Plan

1.3.1.4 Roof Plan

Green/planted roofs or reflective white/light gray roofs are planned for all buildings. Wherever there is not mechanical equipment on the rooftops, and space allows, the intent is to commit to planting where possible, or high-albedo roof coatings to reduce building energy use. This sustainable strategy will lead to a reduction in the "heat island effect" commonly found in large urban areas. Other aspects of the Project's sustainable strategy related to rooftops can be found in Section 5.0. Already, Blocks A, B, C, J, K, and L1, have dedicated large portions of their rooftops to active uses that provide a further distinguishing dimension to the Seaport District. For example, the public rooftop of Block A has become a regional destination, affording visitors with a unique vantage point from which to enjoy the Harbor's edge and the city skyline beyond. Refer to Figure 1-28 for the Roof Plan and zoning heights on the NPC Blocks.

1.3.1.5 Parking Plan

There are five underground parking garages built or underway at Blocks B and C, K, L1, L2, and M1/M2. The total number of underground parking spaces permitted in the 2010 Project is approximately 6,500, with approximately 320 legal metered or two-hour on-street parking spaces.

The NPC Project contemplates four additional underground garages at Block D (which would connect to B and C), Blocks F and G, Blocks L3-L6, and Blocks N and P. The Proponent is committing to reducing the total parking count for the Project to approximately 5,500 underground parking spaces and approximately 240 legal metered or two-hour on-street parking spaces to help promote more sustainable commuting patterns.

In addition to these parking facilities (which would include both public parking spaces and private/accessory spaces dedicated to serving the uses of the buildings above), the Proponent is planning a more robust car-sharing program than previously contemplated in the 2010 Project and more curb space dedicated for use by taxis, private ridesharing services, and private shuttle services, which have become an important mode of transport for commuters to the Seaport, significantly reducing private vehicle usage for commuting. This more public and shared approach to parking and vehicular service infrastructure, coupled with an expanded bicycle sharing infrastructure, is intended to further reduce the volume of private auto-based commuting into the Seaport and promote the use of shared transportation options, both vehicular and bicycle.

A plan of parking garage ramps and underground parking spaces is shown in Figure 1-29.

Note:
Parcels L3, L4, L5, L6, N, and P to have a maximum of 260' building height measured from grade.

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Figure 1-28

Roof Plan

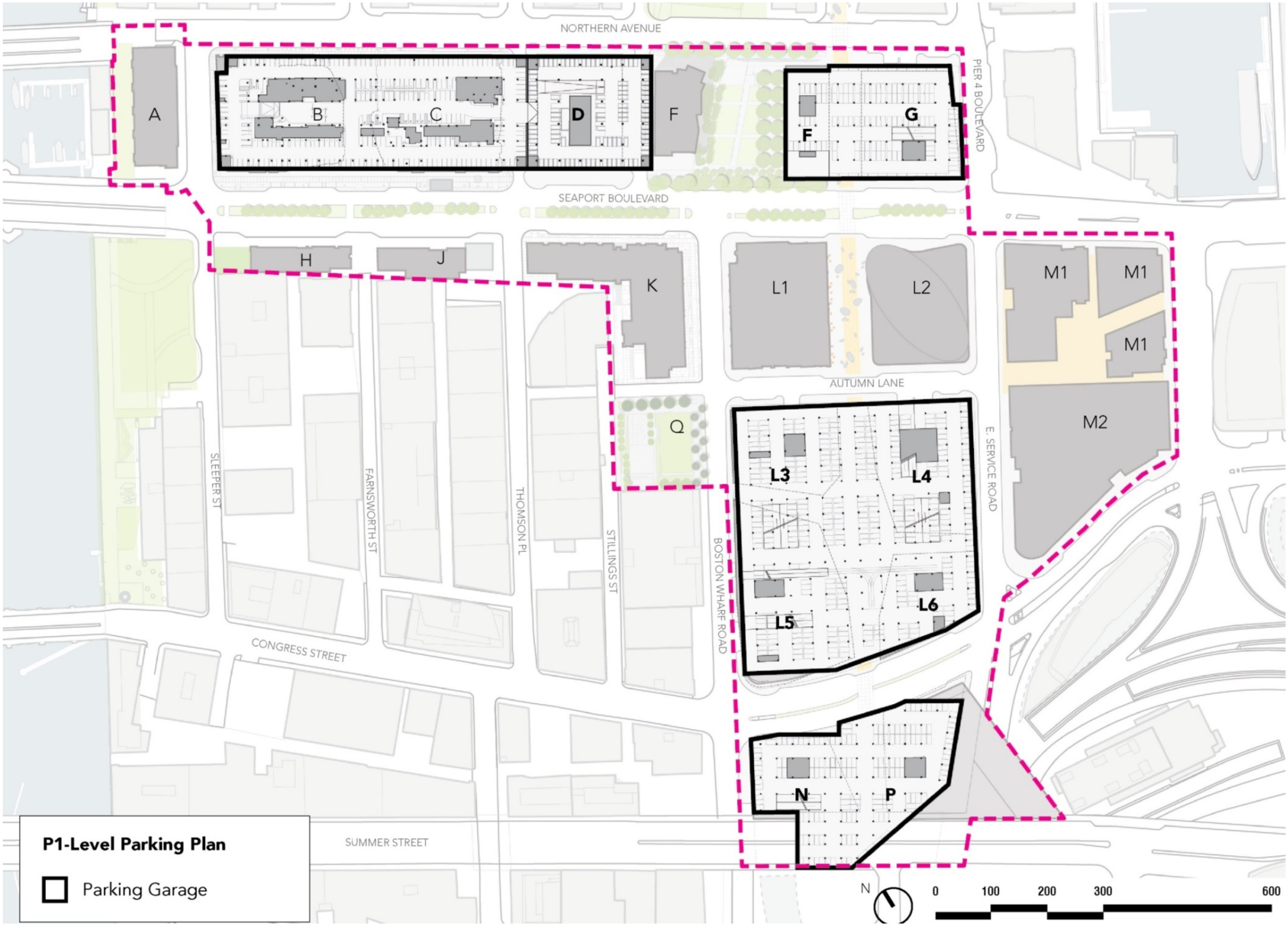

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Figure 1-29

Parking Plan

1.3.1.6 Public Realm Plan

To date, the 2010 Project's development has resulted in the creation of several major new public spaces within the Project Area and various other public realm improvements spread across the district. Among the over-arching objectives of the NPC Project is to unify the entire Project Area by planning and implementing a continuous tapestry of public realm improvements that will create an inviting and attractive pedestrian experience that causes residents, employees, and visitors to linger and enjoy all aspects of the Seaport District's offerings. To this end, the NPC Project includes a rich variety of green spaces, sidewalks, and pedestrian ways throughout the Project Area, as well as an intense dedication of ground level building areas to active public uses that add life and vibrancy to the public streetscape and to public open spaces lined with retail, cafes, restaurants, and other active public uses, as shown on the Public Realm Plan, Figure 1-30. As detailed elsewhere in this filing, the NPC Project also proposes to enhance the 2010 Project's commitment to the public realm by creating a major new axis of pedestrian travel and a major new public space at Harbor Square that will anchor a series of year-round public events and programs that will enhance the quality and interest of the public realm district-wide.

The public spaces constructed as part of the 2010 Project and proposed as part of the NPC Project connect the surrounding communities and existing public amenities, dramatically improve public access to and use and enjoyment of Boston's waterfront, and create multiple new urban places that already draw residents and visitors from throughout the South Boston neighborhood and citywide. The public realm plan also shows how the NPC Project's open spaces create a continuous system that ties the new neighborhood to its surroundings: extending the Fort Point Channel Landmark District's fabric, connecting to the new grid of the Fan Pier development and allowing its streets to feed into Seaport Boulevard, extending and connecting Seaport Common to Fan Pier Green, connecting to the 100 Acre Plan area via Boston Wharf Road and the Fort Point Channel Harborwalk, and strengthening the connection from the Project Site to the Harborwalk by providing more physical and visual links to it. The completed Harbor Way connection will also complete the "Harbor Loop," a 1.5-mile walking path circumnavigating the Seaport and the Fort Point Channel Landmark District and providing a recreational, commuting, and neighborhood shopping amenity for residents, employees, and visitors alike. The Harbor Way connection to the water's edge will also tie back to the South Bay Harbor Trail, leading to Dudley Square, and to the South Boston residential neighborhood over Summer Street.

Section 1.2 provides detailed information on the planning and design of Seaport Square.

1.3.1.7 Street Sections

The NPC Project will achieve an appropriate balance of neighborhood cohesion and design diversity that is imperative to the development of a project of this size. This approach to the design of buildings and continuity of lower-floor retail, restaurant, and other active public

Public Realm Plan

1. Seaport Common (F)
2. Harbor Square (L3-L6)
3. Seaport Blvd. Public Realm
4. Courthouse Square (B+C)
5. Sea Green (Q)
6. Summer Street Steps (N+P)
7. Martin Richard Park (E)
8. Block M Courtyard (M)
9. Harbor Way
10. Old Sleeper Street
11. H-1 Plaza

Seaport Square Boston, Massachusetts

SEAPORT

Figure 1-30

Public Realm Plan

uses will create streetscapes that change along their length and across their width, to provide a rich pedestrian environment and visual aesthetic as viewed from public ways and by occupants in nearby buildings. Modest examples of this dedication to improving street sections within the Project Area are already visible on Old Sleeper Street adjacent to Block A (the Envoy Hotel) and are currently under construction along Northern Avenue and Seaport Boulevard in connection with Blocks B and C, and Autumn Lane and East Service Road with Blocks L2 and M. Existing and proposed street sections and plan views of Seaport Boulevard, Northern Avenue, Congress Street, East Service Road, and Boston Wharf Road are included in Figures 1-31 to 1-39. Proposed Street Furniture concepts are shown on Figure 1-40. Rendered views of Autumn Lane and East Service Road are included in Figures 1-41 to 1-43.

1.4 Public Benefits

- **New Jobs**: The NPC Project will create approximately 12,000 construction jobs and approximately 23,000 permanent jobs. The permanent jobs will be created through the retail space, office and research uses, and services related to the residential and hotel uses.

- **Increased Housing**: The NPC Project includes the development of up to approximately 3,200 homes, including both for sale and rental units, with both Affordable and Innovation housing constructed on site (as with Blocks B, C, and K to date) or funded off-site on a block-by-block basis.

- **Affordable Housing**: Mayor Menino's Executive Order dated May 16, 2006, as amended by Mayor Martin J. Walsh, established as City policy that any residential project seeking zoning relief must set aside at least 15% of the number of market rate units as affordable to moderate income and middle income households, or contribute to a housing creation fund a per unit subsidy for 15% of the number of market rate units. On-site affordable housing will make up approximately 15% (415) of the number of market rate units, or affordable housing will be funded off site in accordance with the Executive Order. To date, Block K has provided 45 affordable units and Blocks B and C will provide 96 affordable units once open in Q2 2017.

- **Innovation Housing:** In addition to the number of affordable housing units described above, additional units equal to a minimum of 15% of the number of market rate units are proposed as innovation housing units. Innovation Housing may include smaller unit sizes, flexible unit layouts, combined living and working spaces, shared common areas and other design features to increase affordability and communication among residents ("Innovation Housing"). Each Residential Block shall provide the required Innovation Housing Units on-site, or the Proponent may

SEAPORT BLVD. EXISTING CONDITIONS - LOOKING EAST

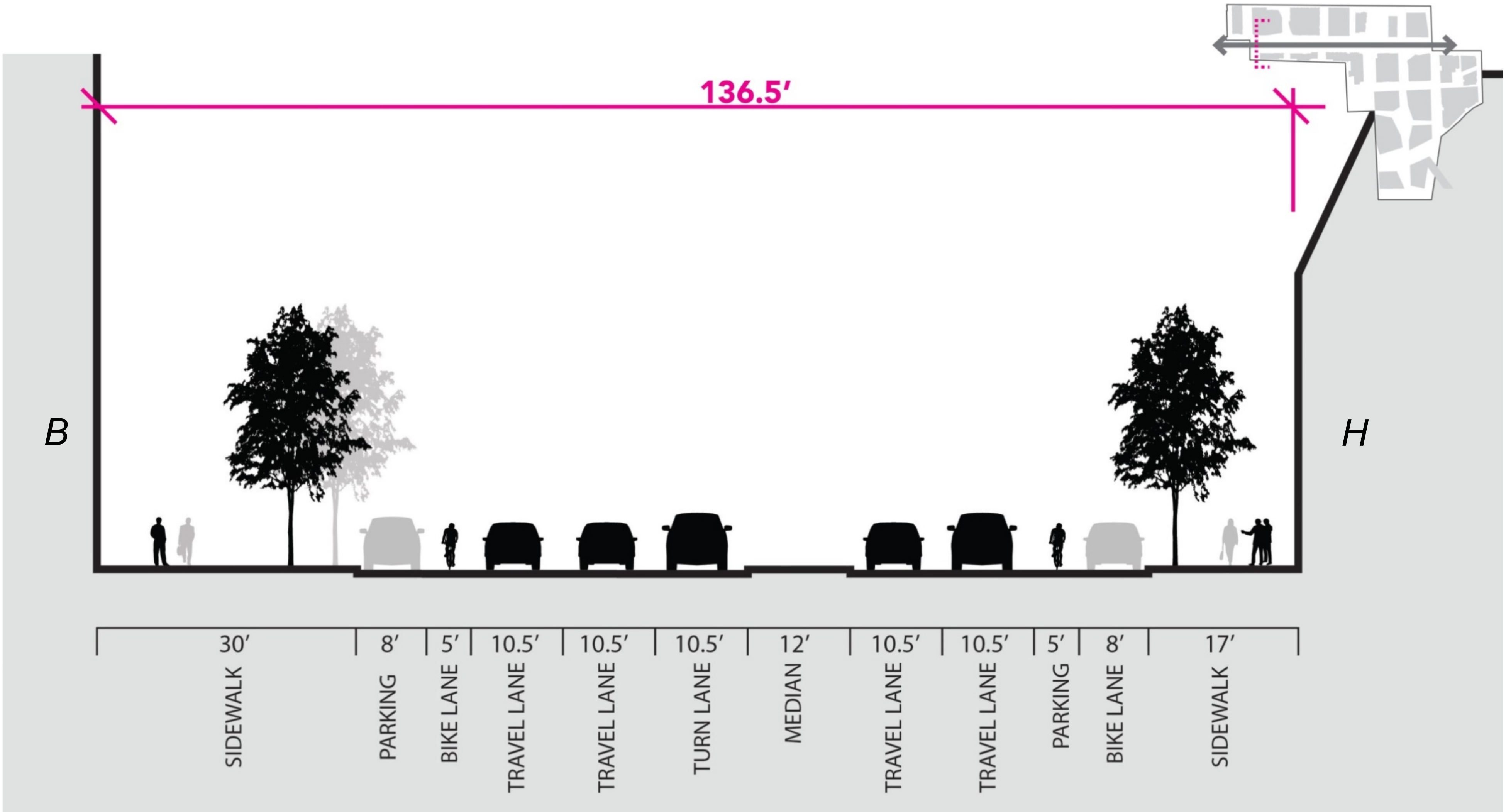
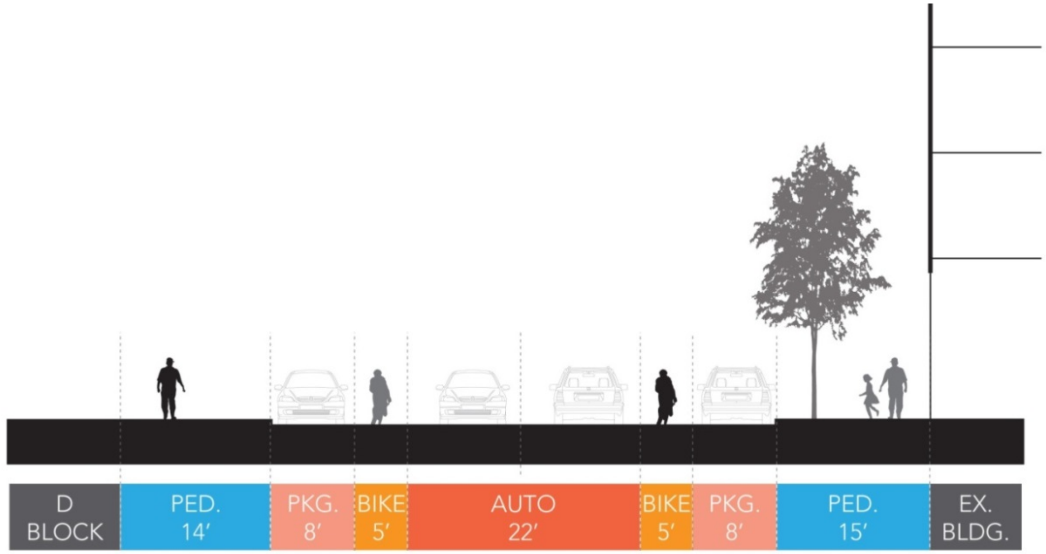


Figure 1-31

Seaport Boulevard Section at Blocks B and H (Existing Condition)

Figure 1-32

Seaport Boulevard Section at Blocks B and H (Proposed Condition)



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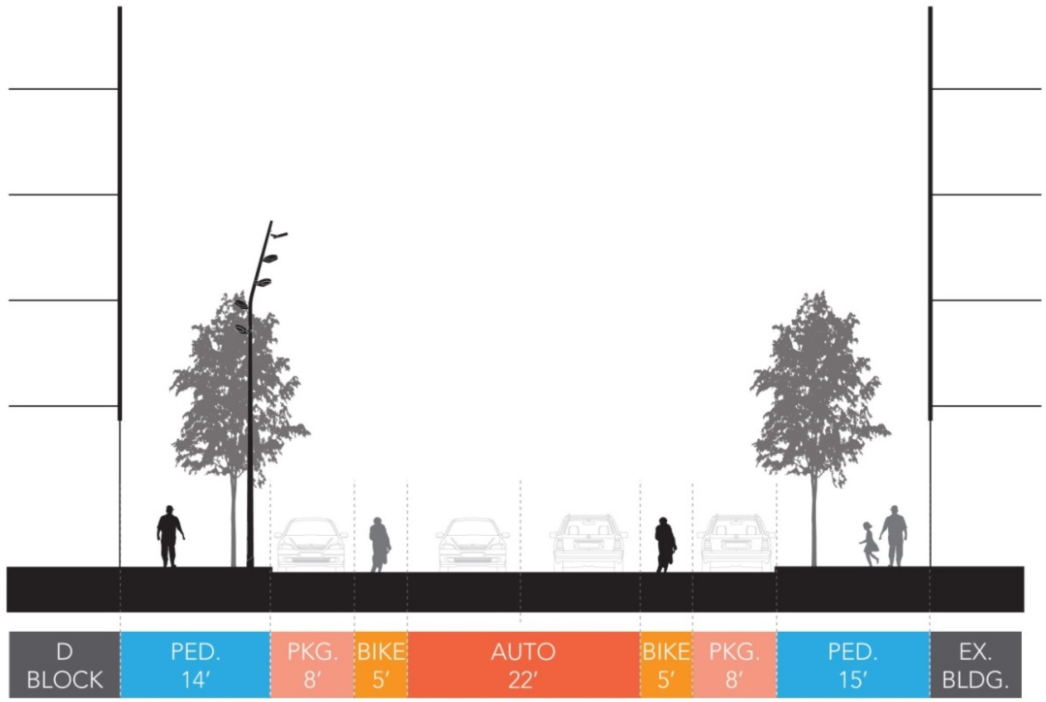
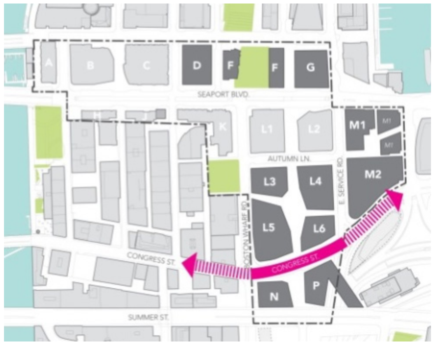


PROPOSED

Figure 1-33

Northern Avenue: Section View



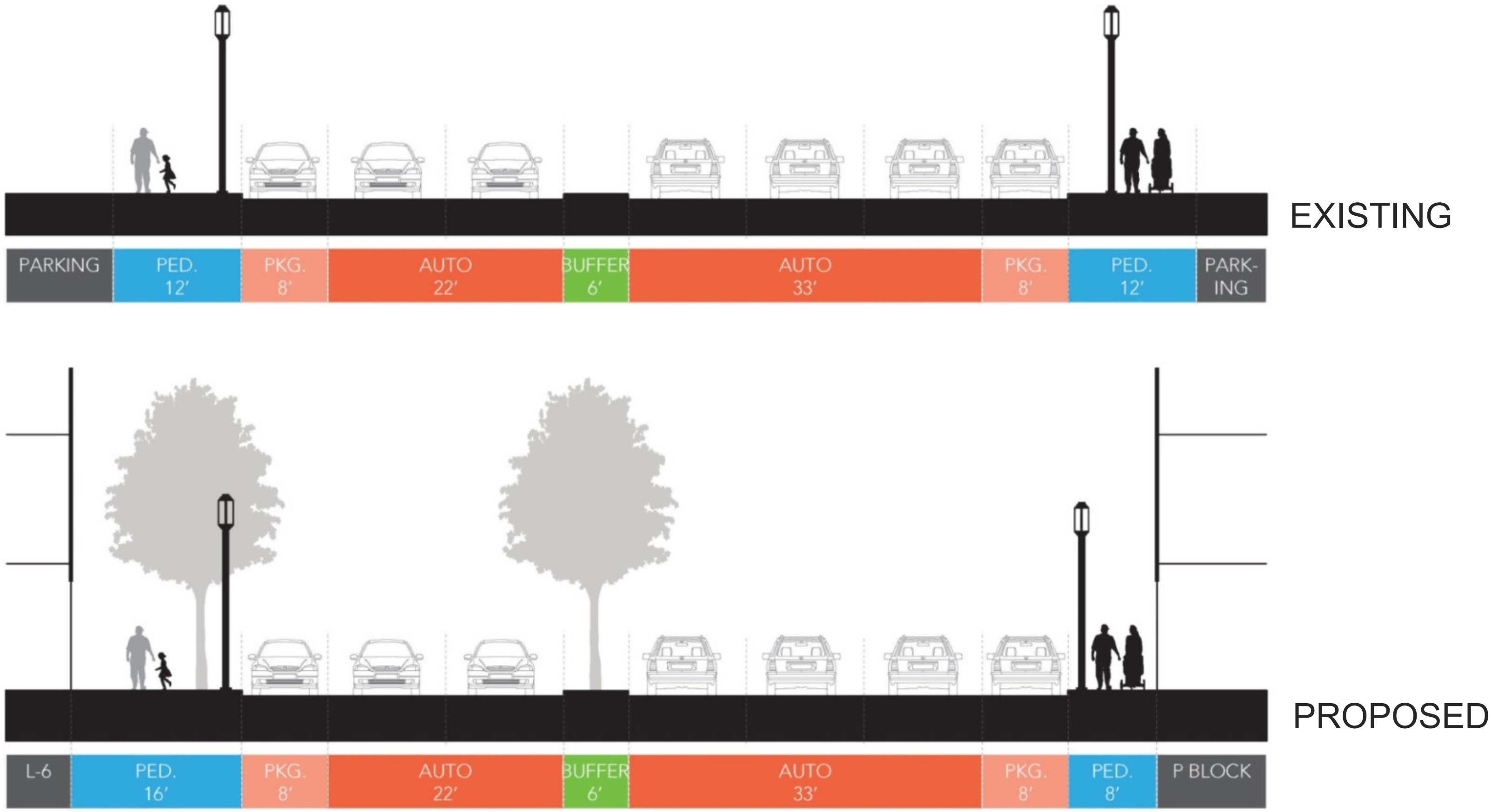


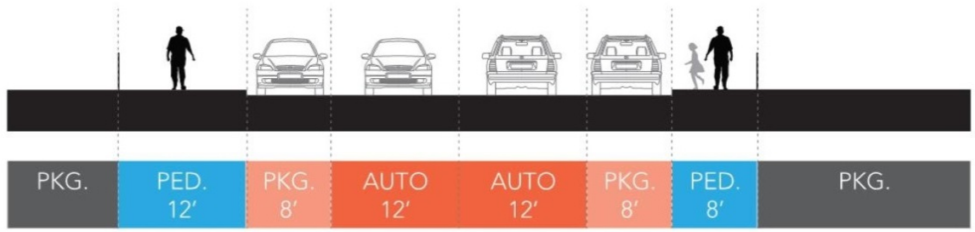
Figure 1-34

Congress Street: Section View

MID-BLOCK CROSSING AT CONGRESS STREET

Figure 1-35

Congress Street Proposed Improvements & Mid-Block Crossing



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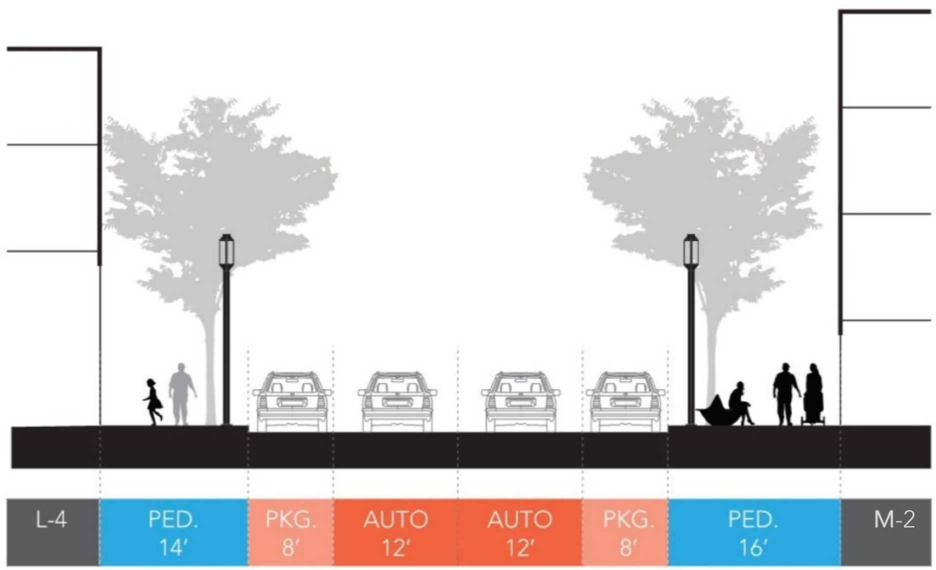


PROPOSED

Figure 1-36

East Service Road: Section View

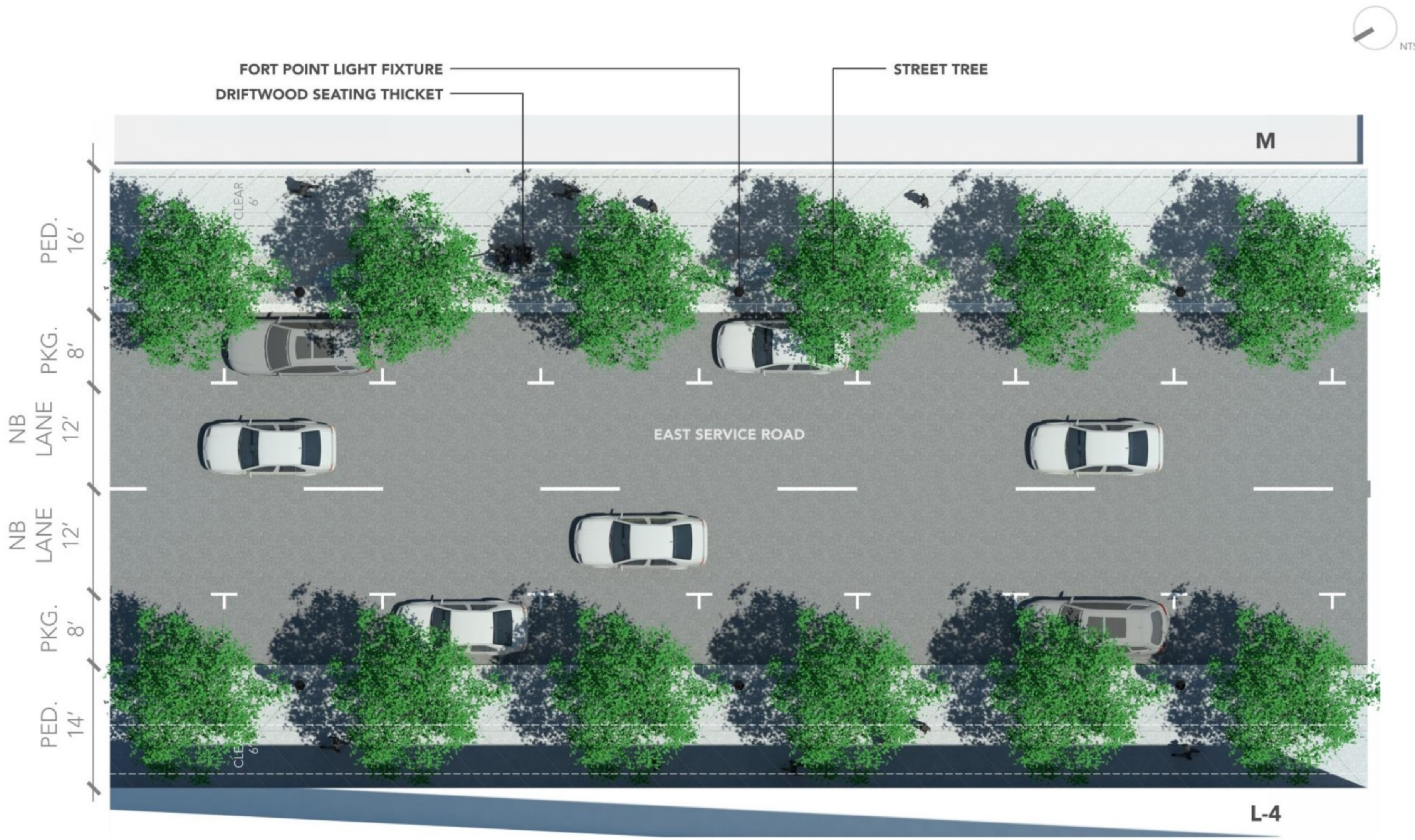


Figure 1-37

East Service Road: Proposed Improvements Plan View

Figure 1-38

Boston Wharf Road: Section View

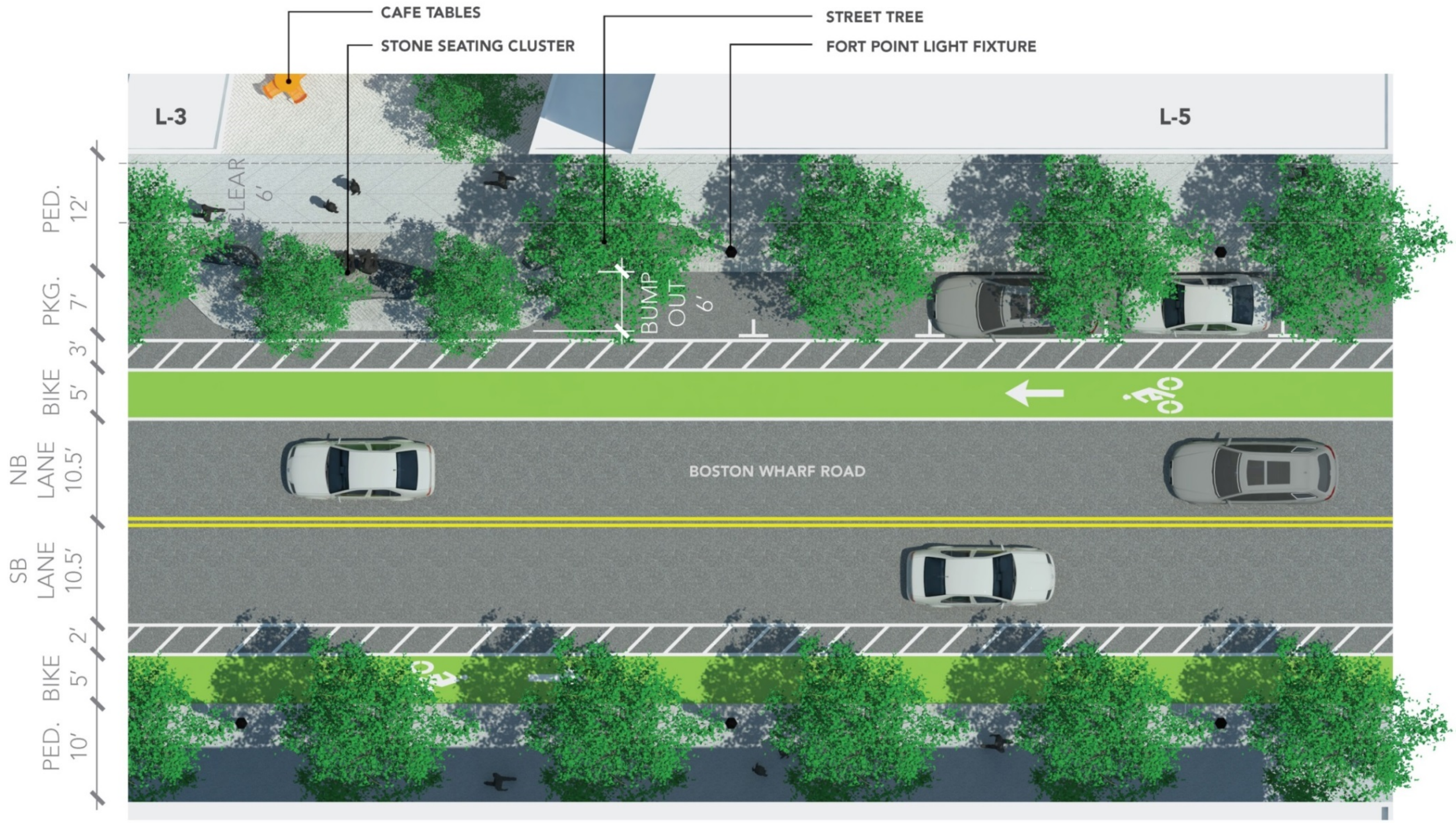


Figure 1-39

Boston Wharf Road: Proposed Improvements Plan View

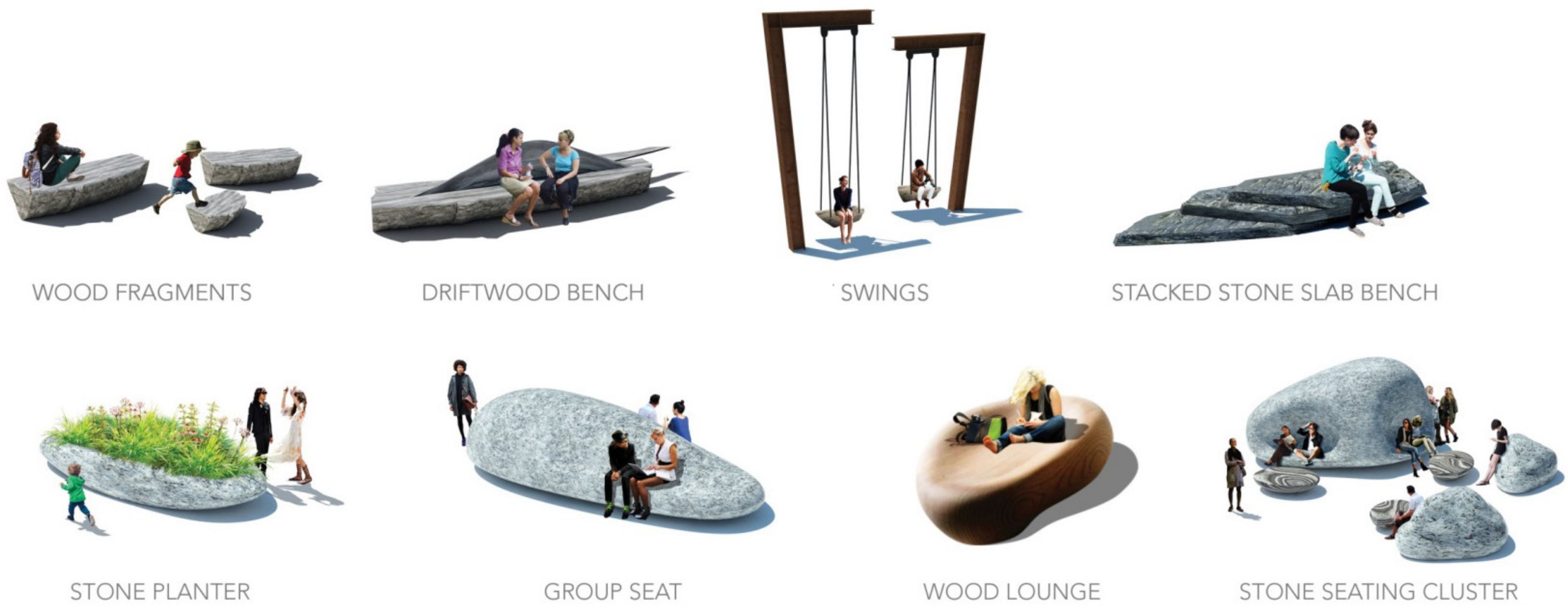


Figure 1-40

Proposed Street Furniture Concepts

Figure 1-41

View North on East Service Road (at L4 and M2) from Congress Street

Figure 1-42

View South on East Service Road (at L2 and M1) from Seaport Boulevard

Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 1-43

View East from Autumn Lane (at L2 and L4) toward M Way redistribute the Innovation Housing Units to other Blocks subject to the approval of the BPDA. To date, Block K has provided 45 innovation units and Blocks B and C will provide 96 innovation units once open in Q2 2017.

- **Open Space**: To reinforce the mission of the Seaport as a place for connecting with the South Boston waterfront, shopping, working, living, learning, and recreating, and inspired by the BPDA's civic vision, the Project will include a substantial amount of open space that will help create a continuous public realm.

  Approximately 8.8 acres or 37% of the Project Site will be devoted to open space including green space, sidewalks, pedestrian ways and streets constructed on land owned by the Proponent or its affiliates, or their predecessors. Excluding streets and sidewalks, approximately 7.0 acres or 30% of the Project Site will be open space.

- **Off-Site Public Realm Improvements**: The Proponent will also create open spaces in areas outside of the Project Site but within the Project Area as defined in Section 1.1 and detailed in the Offsite Improvements bullet below. As described in Section 1.2, by constructing new sidewalks and pedestrian ways, and improving Seaport Boulevard with trees, extensive landscaping, public art, and outdoor seating to create an aesthetically pleasing connection through the Project to the Financial District and to other areas of the South Boston waterfront. This Project will add approximately 8.8 acres of open space constructed on land owned by the Proponent or its affiliates, and will improve approximately 3.4 acres of publicly-owned streets and other land.

- **Sustainable Design/Green Building**: The Project as a whole is envisioned as a national model for large-scale sustainable mixed-use development, both with respect to its pursuit of LEED-ND certification and with respect to its mix of uses located in close proximity to one another, promoting minimal carbon footprint living. To date, the Project as a whole has achieved LEED-ND Stage II Gold Certification for the master plan itself, and individual buildings have also achieved outstanding individual results; Block K (Watermark Residences) is targeting LEED Gold and Block L1 (101 Seaport) has achieved LEED Platinum certification, setting a new benchmark for sustainable working environments in the City of Boston.

- **Smart Growth/Transit-Oriented Development**: The ongoing redevelopment of the Project Site into an attractive 21st century mixed-use development will help create a thriving urban community in the South Boston waterfront district. With over 3,000 residential units located in the middle of a commercial employment core, the NPC Project is ideal for promoting a lifestyle for residents focused on walking between home, work, shopping, and other daily amenities. As a mixed-use development in close proximity to the MBTA's Red and Silver Lines, the Project embodies the major tenets of transit-oriented development (TOD), and includes the construction of a new MBTA head house adjacent to Seaport Common. In addition to being located within a quarter-mile of public transit, the Project has planned for and designed a compact, walkable development incorporating over 100 retail stores, housing, hotels, offices, and recreational opportunities for residents, employees, and visitors. The Proponent also anticipates continuing to expand its commitment to the City of Boston's Hubway bicycle share program, which currently deploys six stations within or proximate to the Project Area. In addition, since the approval of the 2010 Project, new landside water transportation infrastructure has been completed, and the NPC Project will facilitate increased utilization of water transportation by providing a robust and attractive pedestrian and bicycle connection to the Fan Pier water transportation terminal in the form of Harbor Way, which will connect directly to Summer Street, the BCEC, and beyond.

- **New Tax Revenue**: The Proponent estimates that the Project will annually generate approximately $50,000,000 in local property taxes, $31,000,000 in state sales taxes, as well as additional state hotel occupancy tax, local occupancy tax, and convention center financing fee revenues whose amounts will depend on the ultimate number and type of hotel rooms built out as part of the NPC Project.

- **Linkage**: The Project as a whole is estimated to generate approximately $41,500,000 in housing and jobs linkage funds to the City of Boston; approximately $11.5 million of this amount has already been paid or is scheduled to be paid in connection with the development of Blocks B, C, H, J, K, L1, and L2.

1.4.1 Extraordinary Public Improvements

- **New Streets and Sidewalks**: The NPC Project proposes to continue and enhance the 2010 Project's objective of re-envisioning the public realm in the Project Area by reconstructing and dramatically improving most of the public streets and sidewalks within the Project Area including Northern Avenue, Seaport Boulevard, Boston Wharf Road, East Service Road, Sleeper Street, Summer Street, and Congress Street. In addition to these improvements to existing public streets, new streets will be constructed including Autumn Lane (partially complete with Block L1, to be finished with Block L2), Pier Street (Block D), Fan Pier Boulevard Extension (opening with Block C), Stillings Extension (Block K) and the portion of Harbor Way formerly known as North Harbor Street (earlier of Block F or Block G) which is envisioned as a potential shared street to allow for loading and garage access in addition to pedestrian use as part of Harbor Way, as well as a pedestrian-only extension of Farnsworth Street (opening of Block J) to connect Congress Street to Seaport Boulevard through the historic Fort Point Channel Landmark District.

- **Open Space and Landscape Improvements**: The Project includes three new major public open spaces, Seaport Common (Block F), Sea Green (Block Q), and Harbor Square (Blocks L3-L6). Detailed elsewhere in this Filing, these (and other) major open space improvements aim to provide a broad spectrum of options for public use and enjoyment of the Project Area and the Seaport as a whole.

- **New Harborwalk Connection**: As the Fort Point Channel Watersheet Activation Plan envisions, and in addition to the numerous pedestrian connections as previously described, a new waterfront pedestrian way has been created along the City-owned Old Sleeper Street to link existing sections of the Harborwalk from the Children's Museum to the Moakley Federal Courthouse. Outdoor restaurant seating from the Envoy Hotel and the Barking Crab enliven the area during both the day and evening hours. This improvement was completed in 2015 and has become a vibrant and popular place at the gateway to the Seaport.

- **Summer Street – Congress Street Connection**: The NPC Project will create a much-needed and long-desired major pedestrian and bicycle connection between the elevated Summer Street viaduct and Congress Street, which has experienced a renaissance in recent years as a hub of the city's innovation and culinary economies. By eliminating the vehicular roadway bridge over Congress Street proposed in the 2010 Project, the NPC Project will create a generous and inviting public open space between Blocks N and P that will be lined with retail, restaurants, and entertainment uses. This space will provide a pleasant and inviting pedestrian experience along the length of Congress Street by extending the urban fabric and active uses that now line the edges of Congress Street in the Fort Point Channel Landmark District. The Summer Street Steps, modeled conceptually on the Spanish Steps in Rome and other monumental stairs around the world, are being designed by High Line Landscape Architect James Corner Field Operations and will become an iconic part of the public realm in the Seaport District. Most importantly, the Summer Street Steps will solve one of the most vexing historical impediments to good pedestrian circulation in the entire district and facilitate the completion of the Harbor Loop, connecting Summer Street, the BCEC, and the Fort Point neighborhood beyond directly to the water's edges one-third mile to the north.

- **New MBTA Silver Line Station Entrance**: The Project will add a new MBTA head house/station entrance adjacent to Seaport Common. This head house/ station entrance will provide a landmark destination and convenient location along the major axis of pedestrian travel through the Seaport district to further promote the use of public transportation as a means of accessing the district and enhance the quality of the Silver Line user experience. In addition to the new MBTA head house, the Block J development also included improvements to the existing MBTA Silver Line head house within the footprint of the new building.

1.4.2 Cultural, Educational and Community Contributions

- **Cultural Corridor**: Created by developing a major physical link from Summer Street, the historic Fort Point Channel Landmark District, and the BCEC to the Institute of Contemporary Art on the waterfront, Harbor Way will become known as one of Boston's most interesting and inviting cultural destinations. An example of the diverse array of experience that this new connection will offer might involve a visitor to the Seaport district visiting Fort Point Open Studios in nineteenth-century historic warehouse structures, strolling past dozens of retail shops, galleries, and public art installations along Harbor Way, and ending with a visit to the Institute of Contemporary Art and the Cultural Connector ferry service operated by the Fan Pier project with service to the Children's Museum and Boston Tea Party Ships & Museum. The Cultural Corridor will build on the arts identity of the neighboring Fort Point Channel District, and create a strong cultural component at the central axis of the Project that will activate and provide year-round allure for visitors to the Seaport District.

- **Civic & Cultural Spaces**: Many buildings within the Project Area will include civic and cultural space allocations to enhance the diversity of experience within the public realm of the Project and provide opportunities for non-profits and community organizations to benefit from the central location and retail/restaurant adjacencies offered by buildings within the Project Area. To date, the Fort Point Arts Community will be occupying such civic space in the Envoy Hotel (Block A), and similar spaces are envisioned in Blocks D, G, N, and P. Consistent with prior approvals, the Proponent also seeks the flexibility to aggregate these types of smaller civic spaces into one or more larger spaces within one or more development blocks as the NPC Project is built out, or disperse the concept of a single large Performing Arts space on Block P into multiple smaller cultural uses located throughout the district to better respond to the needs of the city's arts community; this determination will be made in part based on the facilities needs identified in the BostonCreates Cultural Plan to ensure consistency with the stated desires of the wide range of organizations and stakeholders that participated in the process of crafting the City's Cultural Plan.

- **Chapel**: A new facility has been constructed to relocate the existing Chapel of Our Lady of Good Voyage on Northern Avenue to Block H of the Project, located at the foot of the Moakley Bridge, which is more conveniently located within the community. The new site provides better access to and visibility for the Chapel, allowing it to expand to better serve the needs of the growing neighborhood. The new Chapel is being fit out by the Roman Catholic Archdiocese of Boston and is slated to open to the public in the spring of 2017.

- **Programming & Activation**: In addition to the myriad physical and public realm improvements that are proposed as part of the NPC Project (and have already been completed or are under construction as part of the 2010 Project), the Proponent is deeply committed to coordinating and implementing a rich array of free public events and programming on the major public open spaces within the Project Area. In 2016 alone, the Proponent arranged more than 100 free public events ranging from fitness classes and speaker series to live performances by the Boston Ballet, Boston Symphony Orchestra, students from the Berklee College of Music, cooking demonstrations, and a range of other events of public interest. Public art installations in partnership with the Institute of Contemporary Art also featured prominently in the district in 2016 and will continue. Signature events such as the first annual Seaport holiday tree lighting, which took place in December 2016 and attracted residents from all over South Boston, Fort Point, and the Seaport District as well as employees of local businesses and local retailers, are also part of the Proponent's commitment to promoting public use and enjoyment of the Project's numerous public open spaces. The Proponent believes strongly that a robust schedule of well planned and executed public events is an essential part of creating a vibrant 21st century urban neighborhood, and the Proponent has hired staff in-house full-time to coordinate and execute on this commitment for the benefit of the entire Seaport District. The Proponent's commitment to an ongoing program of free public events and programming is a central component of the NPC Project's commitment to creating a cultural destination in the Seaport District. Based on the Proponent's belief that cultural attractions should not just be housed in permanent buildings, the Proponent envisions a long-range annual obligation for the NPC Project to host free public cultural events on the Project's multiple public open spaces as a more inviting, accessible, and innovative way of promoting public access to cultural uses in the district.

1.4.3 Cultural Facilities Determination

The Proponent is committed to introducing significant Arts and Cultural amenities into the NPC Project and intends to expand upon the objective of making the Seaport a regional cultural destination. The Proponent believes that the specific scale, program, development arrangement, and operating arrangement of the Cultural use component of the Project should closely reflect the actual needs and capacity of Boston's cultural community. Rather than proposing a single pre-defined and speculative cultural facility as part of a specific Block that may or may not meet the needs of the diverse array of cultural organizations that make up the cultural landscape in Boston, the Proponent will administer a Request for Proposals ("RFP") process for prospective cultural partner organizations in order to select one or more qualified cultural organizations with which to collaborate on the development of either a single cultural facility or a range of facilities that are tailored to the specific programmatic needs of partner organizations and the city's broader cultural community. Examples of the types of facilities that the Proponent expects may result from this RFP process include, but are not limited to, the following:

- Single signature performing arts center, subject to funding and demand as stated in the existing Project approvals;
- Black box performance/rehearsal space sized to accommodate a theater company or large musical ensemble;
- Smaller rehearsal spaces for individual musicians/small ensembles, smaller theater companies, or other smaller-scale performing arts uses;
- Visual Arts studio/maker spaces, along with a common space that could accommodate gatherings and events; and
- Gallery and/or museum space curated and operated by a local museum or arts organization.

In addition to identifying potential Arts and Cultural facilities through the process outlined above, the RFP process will also seek to identify other Arts and Cultural commitments not related to physical facilities that may be desirable as part of the NPC Project's development, such as:

- Commitment for regular public programming, activation, art installations, etc. within or proximate to the Project Site or at a specific offsite location;
- A rotating partnership with a specific Performing Arts organization to provide seasonal outdoor programming in Harbor Square and/or at other locations in the vicinity of the Project;
- Financial support for Fort Point and South Boston arts organizations to help these organizations focus on mission/programming in the surrounding area rather than fundraising.

This deliberate, methodical, and need-based approach to establishing a specific program and scale for one or more cultural facilities in the Project area is intended to ensure that the Project's cultural facilities directly reflect the actual, real-time needs and capacity of specific Arts and Cultural organizations, which will also evolve over time -- from startups and smaller community-based organizations to well-established members of the city's arts community -- as well as the City of Boston's CreateBoston Cultural Plan.

1.5 Development Context

The South Boston Waterfront District has been the subject of extensive planning efforts since the conceptualization of the Central Artery/Tunnel project in the 1990s. While many years have passed and much development taken place since these planning processes were concluded, the NPC Project serves to further several of the major planning objectives that guide the South Boston Waterfront district's development, including the provision of diverse and high quality public realm assets that promote and enhance the public's access to and enjoyment of the water's edge; the creation of major pedestrian and bicycle infrastructure to facilitate the free flow of people and bicycles through the entire district; and the creation of regional destinations that will draw residents, employees, and visitors alike to Boston's vibrant and bustling Seaport district.

Master planning by Massport and the City of Boston in the 1990s established a framework for development in the South Boston Waterfront, while still preserving the needs of the working port. Plans that were created by the BRA include the South Boston Waterfront Municipal Harbor Plan, the Seaport Public Realm Plan, and other similar plans. In 2006, the BRA finalized the Fort Point Channel 100 Acres Master Plan, a continuation of the planning process of the South Boston waterfront for this portion of the Fort Point Channel area.

As these planning frameworks evolved, new development began with the World Trade Center complex, providing exhibition space, commercial office space, retail shops and meeting areas. Starting in 1998, the addition of the Seaport Hotel, West Office Building and East Office Building expanded the mix of uses in the area, and the opening of the John Joseph Moakley Federal Courthouse provided an important architectural anchor for the western end of the South Boston peninsula.

In the mid-2000s, prior to the recession of 2008, projects built included the John Hancock (formerly Manulife) office building, completed in 2003, and the BCEC, completed in 2004, among the largest convention centers in the nation. In 2006, a new Westin Hotel opened adjacent to the BCEC, and the Park Lane Seaport Apartments building was also completed. All of these projects took place on Massport or City of Boston-owned land. The opening of the Institute of Contemporary Art in December 2006 on Fan Pier further diversified the mix of uses in the area by adding an important cultural component.

Within the past ten years, development of the privately-owned Fan Pier and Seaport Square project sites has taken place, alongside many other projects throughout the Seaport District including new hotel, residential, office, and retail structures, rehabilitations of historic former Boston Wharf Company buildings, and development of several of the 100 Acres Master Plan parcels.

The City of Boston's designation of the South Boston Waterfront District as the city's Innovation District in 2010 also accelerated the growth of the region's innovation economy in the area and led to the location of thousands of new jobs and billions of dollars of private investment, including major investment by companies such as Vertex Pharmaceuticals, LogMeIn, Red Hat, and dozens of others, and exemplified by the recent announcement of General Electric's new headquarters location along Fort Point Channel.

Substantial public investment has also been made in the past two decades in public infrastructure to improve the transportation network and public amenities serving the Seaport district. These improvements are fundamental to the long-term build-out of the district, and help define the development densities and types of development suitable in the South Boston waterfront. Improvements to highway infrastructure are the result of careful planning and coordination between the Massachusetts Port Authority (Massport), the Central Artery/Tunnel project, and the City of Boston. The resulting series of highway on- and off-ramps provide direct vehicular access to I-90 and I-93 in all directions. The MBTA Silver Line, a rapid transit line opened in 2004, provides quick and convenient access to the South Boston waterfront area from South Station and the Downtown district.

The Project is located in the geographic center of the South Boston waterfront area and has great potential to link these development projects together into the seamless, vibrant, mixed-use neighborhood envisioned by the City of Boston in its master planning documents. The development of the Harbor Way and Harbor Square public realm amenities will create a major organizing element for the entire district and knit together the diverse array of experiences, pathways, and public spaces throughout the Seaport district and also help to create north-south connections to the South Boston residential neighborhood and the city beyond to promote and enhance citywide access to and enjoyment of Boston Harbor and all of the cultural, recreational, and open space amenities that the Seaport has to offer. The NPC Project will build upon and enhance the public realm network commenced as part of the 2010 Project's development and will fill what today remains a great void, connecting the low-rise, historic buildings in the Fort Point Channel District to the taller, new structures that are planned or have been built over the past decade in the waterfront area. Height and density will increase as one moves east from the Fort Point Channel, and south from Boston Harbor starting at Fan Pier. The NPC Project will also provide an essential and long-coveted pedestrian and bicycle connection between Congress Street and the Summer Street viaduct and the BCEC and Fort Point neighborhoods beyond. The proposed program of uses will complement current and planned uses for the area, provide an opportunity to further expand the Seaport's residential and innovation economy growth, and also add significant open and public spaces that will have regional implications. Figure 1-44 details the Project Development Context and existing and planned uses within the area.

DEVELOPMENT CONTEXT

RESIDENTIAL

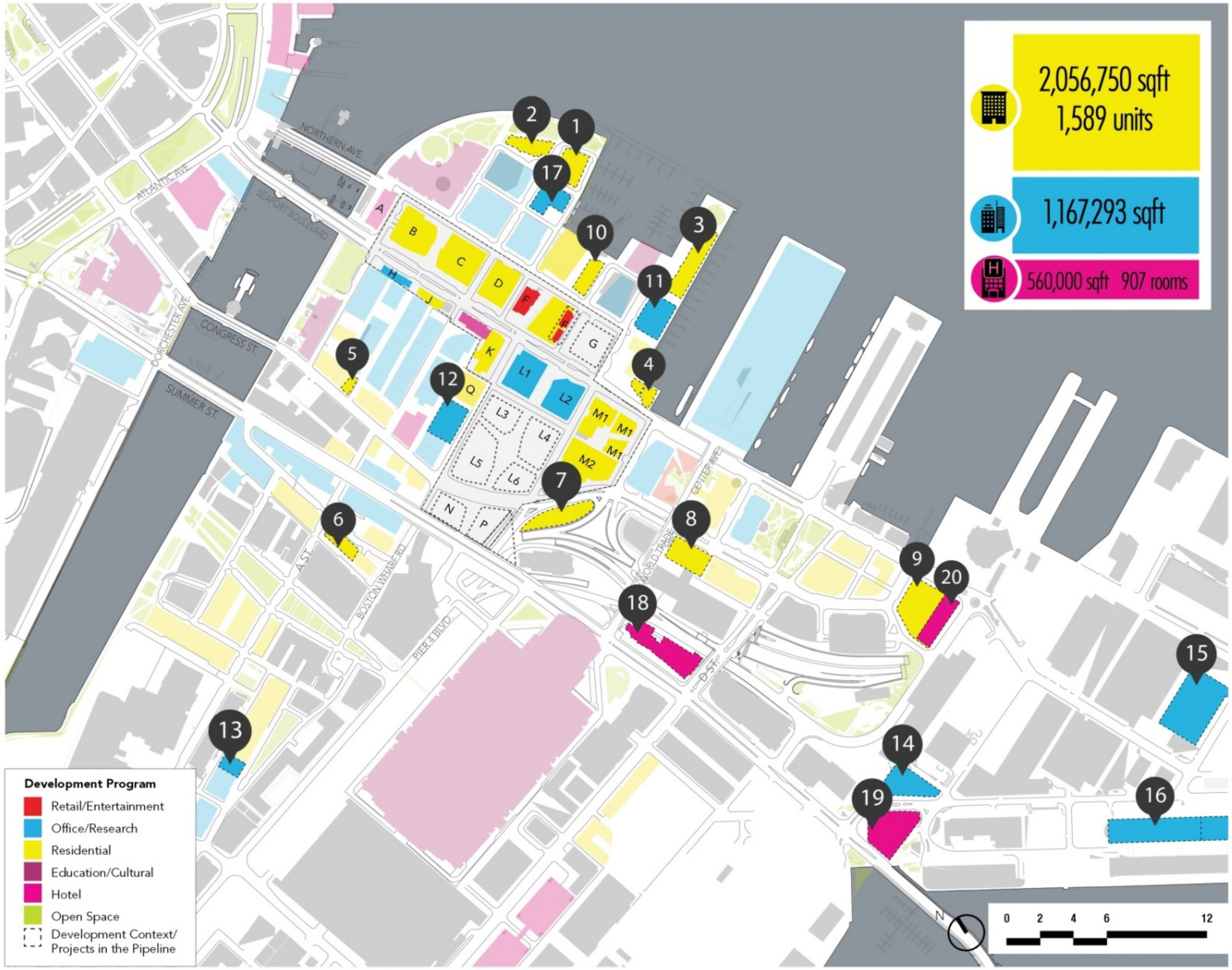
1. 50 LIBERTY DRIVE
2. 22 LIBERTY DRIVE
3. PIER 4 PHASE3
4. 150 SEAPORT BOULEVARD
5. ZERO FARNSWORTH
6. 319 A STREET
7. 399 CONGRESS STREET
8. WATERSIDE PLACE 1B
9. MASSPORT PARCEL K
10. FAN PIER PARCEL H

OFFICE/ RESEARCH

11. PIER 4 PHASE 2
12. 22 BOSTON WHARF ROAD
13. 9 CHANNEL CENTER STREET
14. RAYMOND L. FIYNN MARINE PARK PARCEL Q1
15. INNOVATION SQUARE AT NORTHERN AVENUE
16. BOSTON DESIGN CENTER
17. FAN PIER PARCEL E

HOTEL

18. MASSPORT PARCEL D2
19. RAYMOND L. FIYNN MARINE PARK PARCEL A
20. MASSPORT PARCEL K



DEVELOPMENT PROJECTS IN THE PIPELINE (ESTIMATED GSF AS OF JULY 2016 BASED ON AVAILABLE DATA)

1.5.1 *Other Area Projects and Cumulative Impacts*

The South Boston waterfront is a rapidly transforming area, a number of projects in the vicinity of Seaport Square are either under construction, approved by the BPDA, or in some stage of permitting or planning.

General Electric Headquarters involves the construction of a 388,700 sf building to serve as the new headquarters for General Electric. The project has been approved by the BPDA.

399 Congress Street is a 414 unit apartment building with parking for 144 vehicles. It project has been approved by the BPDA board.

Waterside Place Phase 1B is a 23-story, 345,000 sf building containing 312 residential units, 2,000 sf of retail space, and 84 parking spaces. The project has been approved by the BPDA board.

150 Seaport Boulevard comprises 124 residential units and 10,700 sf of commercial and retail space in a new 283,700 sf building. The project includes 179 parking spaces and has been approved by the BPDA board.

Marine Wharf is an approximately 320,000 sf hotel with 411 rooms and 3,500 sf of retail. It includes a parking garage with 75 spaces. The project has been approved by the BPDA board.

Fan Pier (Parcels D, E, & H) consists of the construction of buildings on the lots adjacent to the new Vertex Pharmaceuticals global headquarters. The build out of the rest of the parcels will be composed of 125,000 sf of office space, 29,000 sf of retail space, 150 hotel rooms, and 160 condominium units. This project has been approved by the BPDA board and is under construction.

Pier 4 (Lots 2 & 3) involves the build out of the lots adjacent to the newly completed Pier 4 mixed use development. The remainder of the lots consist of 353,000 sf of office space, 36,800 of retail space, and 106 condominium units. This project has been approved by the BPDA and is under construction.

Innovation Square at Northern Avenue calls for the construction of an approximately 360,000 sf research and development/manufacturing facility with 60 parking spaces. The project has been approved by the BPDA board.

25 Fid Kennedy Avenue involves the rehabilitation of an approximately 157,000 sf building for use as a plumbing, HVAC, fire-protection, and related construction product assembly plant. The project has been approved by the BPDA board.

Benjamin and Via (Blocks B/C) is part of the Seaport Square Project that has already been permitted. It consists of 230,000 sf of retail space and 832 residential units. The project is under construction and scheduled to open in 2017.

Yotel (Block J) is located across from Blocks B/C and is also part of the Seaport Square Project that has already been permitted. It consists of a 99,000 sf hotel with 12,000 sf of ground floor retail. The project is under construction and set to open in 2017.

121 Seaport (Block L2), located next to the existing 101 Seaport PWC building, is another part of the Seaport Square Project that has already been permitted. The project consists of 372,400 sf of office space and 59,638 sf of retail space. It is under construction and set to open in 2018.

Block M, located east of 121 Seaport, is another part of the Seaport Square Project that has already been permitted. It consists of 750 residential units and 125,000 sf of retail. The project has been approved by the BPDA board and is scheduled to open in 2019.

22 Boston Wharf Road consists of a two floor addition to the existing structure totaling 56,000 sf of new office space. It also involves a conversion of 3,000 sf of parking into ground floor retail. The project has been approved by the BPDA and is under construction.

Omni Boston Hotel (Parcel D2) calls for the construction of a 1,050 room hotel, consisting of regular and micro-hotel units and 61,000 SF of retail. This project is not currently in the permitting process.

South Station Air Rights consists of construction above South Station totaling 1,375,000 sf of office space, 170,000 sf of residential space, 200-room hotel and 934 parking spaces. The project has been approved by the BPDA.

Parcel Q1 involves the construction of an approximately 298,700 sf office building with a small amount of ground floor retail and approximately 150 parking spaces. This project is under review by the BPDA.

Parcel K calls for the construction of two buildings consisting of 304 residential units, 293 hotel units, 17,928 sf of retail space, and 14,400 sf of office space with parking for 640 vehicles. This project is under review by the BPDA.

The projects above, coupled with the individual buildings approved as part of the 2010 Project (some of which have been completed or are currently under construction), have been included in analyses completed on the NPC Project, where appropriate, to determine cumulative impacts resulting from all of the previously completed, currently underway, and BPDA-approved projects to determine the incremental impacts of the NPC Project buildings. For example, all of the projects listed above have been included in the transportation analysis, but only the projects within the extent of the shadow and wind analyses, such as Fan Pier (but not South Station Air Rights) have been included for those studies.

1.6 Project Phasing

To date, the 2010 Project has proceeded in phases on a Block-by-Block basis. The Proponent of the 2010 Project sold individual development Blocks as unimproved land to different third parties, who proceeded with individual buildings on each Block. The current Proponent intends to develop all of the remaining development blocks itself and will control the phasing of the NPC Project's buildout without third party involvement. Nevertheless, the Proponent anticipates that the NPC Project will be built out on a phased basis, as shown in Figure 1-45, with key public realm improvements delivered alongside each phase of development.

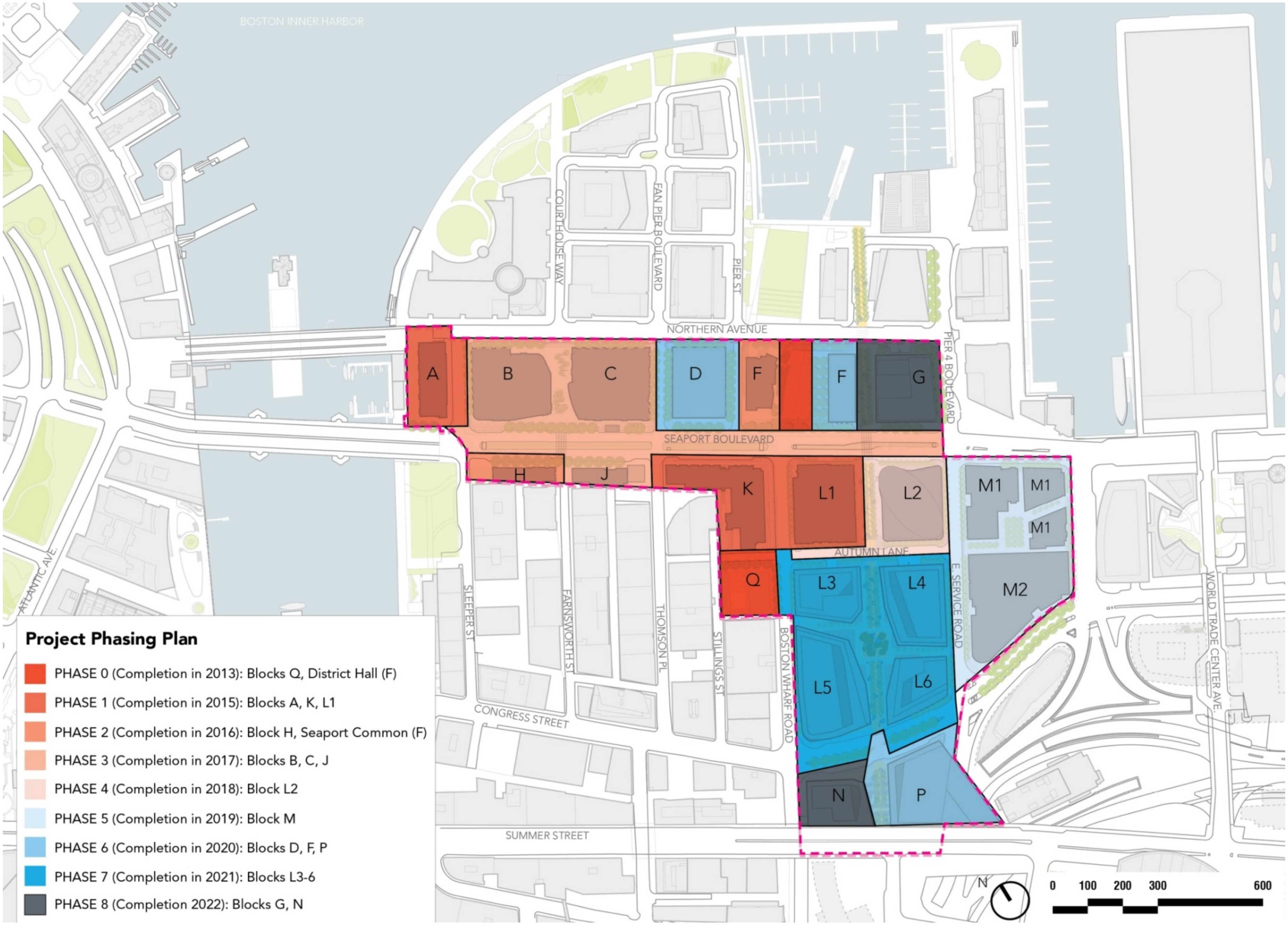
1.6.1 Phasing Plan

A tentative Project phasing plan is set forth below, which provides dates for development Blocks already completed or currently under construction and projects future delivery dates for development Blocks to be completed as part of the NPC Project. The Proponent may construct the phases in a different sequence if market conditions or other factors so warrant.

- Phase 0 (Completion in 2013): Blocks Q, District Hall
- Phase 1 (Completion 2015): Blocks A, K, and L1
- Phase 2 (Completion 2016): Block H, Seaport Common (Block F)
- Phase 3: (Completion in 2017): Blocks B, C, and J
- Phase 4: (Completion 2018): Block L2
- Phase 5: (Completion in 2019): Block M
- Phase 6: (Completion projected in 2020): Blocks D, F, and N or P
- Phase 7: (Completion projected in 2021): Blocks L3-6
- Phase 8: (Completion 2022): Blocks G, N or P

1.6.2 Community Benefits

Certain public and community benefits, such as affordable housing, linkage payments and job creation are linked to the construction and or completion of each building within the Project, while others may be linked to construction or completion of all buildings within a specific phase of the Project. Because the construction of the NPC Project is not anticipated



Seaport Square **Boston, Massachusetts**

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Figure 1-45

Phasing Plan

to be completed in one continuous construction sequence, the Proponent proposes to continue the 2010 Project's approach of allocating community benefits and improvements that reasonably reflects the pro –rata portion attributable to an individual NPC Project component.

Community Benefits of Future Seaport Blocks:

<u>Phase 6 (Completion projected in 2020): Blocks D, F, and N or P</u>

- Lower overall parking ratio within the Project Site;
- Advance the design of the planned Summer Street/Massport Haul Road/Drydock Avenue/Pappas Way Connector connection to 25% with BTD;
- Civic/Cultural Space located in Block D;
- Civic/Cultural Space located in Block F;
- Summer Street Steps, an accessible route connecting Summer Street to Congress Street with the earlier of Block N or P;
- Reconstruction of Seaport Boulevard, Northern Avenue, Summer Street and Congress Street along Blocks D, F, and P respectively to provide new street trees, landscaping, street furniture, bicycle infrastructure, and other pedestrian amenities;
- Completion of Pier Street between Northern Avenue and Seaport Boulevard with Block D;
- Construction of a new MBTA Silver Line head house entrance in front of District Hall with Block D, including an escalator; and
- Completion of Seaport Common and North Harbor Street (Shared Street) with Block F.

<u>Phase 7 (Completion projected in 2021): Blocks L3-6</u>

- Lower overall parking ratio within the Project Site;
- Harbor Way and Harbor Square from Congress Street to Autumn Lane;
- Bicycle improvements on Boston Wharf Road from Congress Street to Seaport Boulevard;
- The mid-block pedestrian link to Blocks N, P and the Summer Street Steps; and

- Reconstruction of Autumn Lane, Congress Street, Boston Wharf Road, and East Service Road along applicable blocks to provide new street trees, landscaping, street furniture, bicycle infrastructure, and other pedestrian amenities.

Phase 8 (Completion 2022): Blocks G & N or P

- Lower overall parking ratio within the Project Site;
- Bicycle improvements on West Service Road to Melcher Street Extension; and
- Reconstruction of Seaport Boulevard, Northern Avenue, Pier 4 Boulevard (for Block G), and Congress Street, West Service Road and Summer Street (for Block N) to provide new street trees, landscaping, street furniture, bicycle infrastructure, and other pedestrian amenities.

Master Plan Completion

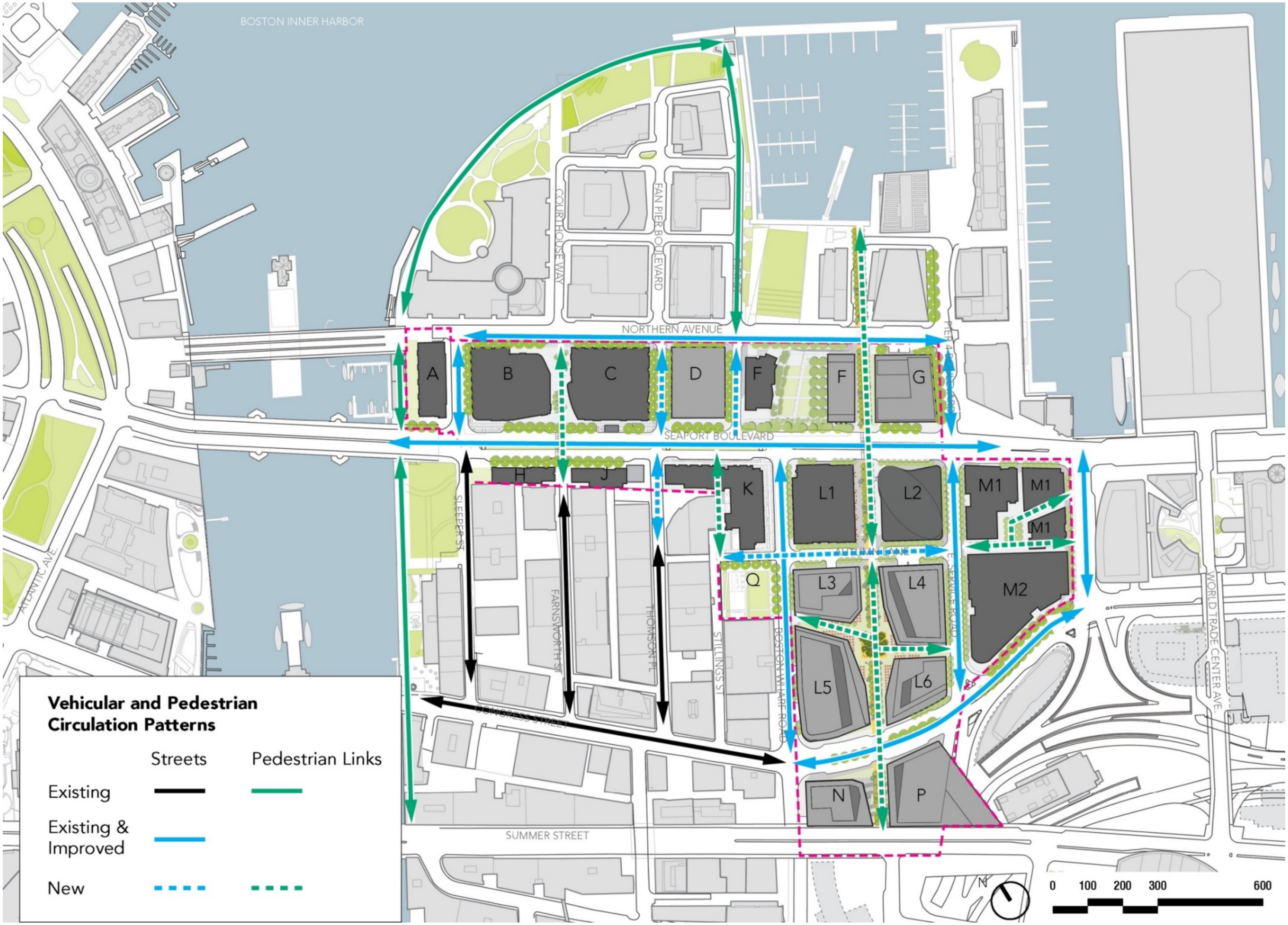
- 37% of the Project Site will be publically accessible open space including new streets, green spaces, sidewalks and pedestrian ways.
- Completion of the "Harbor Loop," a 1.5-mile walking path circumnavigating the Seaport district and Fort Point Channel Landmark District and providing both a recreational, commuting, and neighborhood shopping amenity for residents, employees, and visitors alike.
- The Project achieved a LEED-ND Stage II Gold Certification, and when completed, will be a model of sustainably designed masterplan developments in the United States.
- District-wide transportation improvements and participation in water transportation operating subsidy to provide service between Seaport and North Station.

1.6.3 Schedule

The Proponent has developed both a Phasing Plan and a Construction Schedule designed to take advantage of construction efficiencies for the remaining build-out of the NPC Project. It is intended that the remaining NPC Project blocks will be built on a series of shared "bathtubs" with below-grade floor plates for parking and access. Each bathtub will serve as the foundation upon which multiple buildings will then be constructed (i.e. F/G, N/P, L3-6). Considerable construction efficiencies will be realized by constructing these bathtubs sequentially. Block D will stand alone but will be connected below-grade to the existing Block B+C garage to provide an eastern egress for this facility.

In addition, the phasing and construction schedule for the remaining development blocks will allow the Proponent to take maximum advantage of the remaining site for storage, parking and construction lay-down areas. This is designed to minimize the impact on local streets and neighboring property owners. It is anticipated that the parking lots will remain in operation until such time as work commences on a specific phase. Figure 1-46 provides a site circulation plan illustrating how motor vehicles, pedestrians and cyclists will be accommodated on the site.

Because of the central nature of the public realm improvements contemplated along Harbor Way, the Proponent will construct the finished Harbor Way condition adjacent to each neighboring block as it is constructed. In addition, if Blocks L3-L6 are phased, the Proponent intends to construct the finished Harbor Way condition between Congress Street and Autumn Lane as part of the first L-Block (or Blocks) to be developed. In the event that this portion of Harbor Way is completed before the construction of either N or P Block (the earlier of which would include the construction of the Summer Street Steps as well as the accompanying accessible route), an interim pedestrian connection between Summer Street and Congress Street will be constructed on Blocks N and P to ensure functionality of Harbor Way all the way to Summer Street as early as possible. This interim connection will not be constructed on the location of the Summer Street Steps to avoid disruption during the construction of the permanent stair and ensure continuous public enjoyment of the connection during the construction of the final Summer Street Steps connection.



Seaport Square **Boston, Massachusetts**

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Figure 1-46

Pedestrian and Vehicular Circulation Patterns

Chapter 2.0

General Information

2.0 GENERAL INFORMATION

2.1 Project Identification and Project Team

Project Name:	Seaport Square
Location:	The Project Site includes approximately 23 acres in South Boston, generally bounded by Northern Avenue and Seaport Boulevard (between Old Sleeper Street and East Service Road) and by Stillings Street, Boston Wharf Road, East Service Road, Pier 4 Boulevard, and B Street (between Seaport Boulevard and Summer Street).
Proponent and Owner:	Seaport Square Development Company LLC and its affiliates c/o W/S Development Associates LLC 33 Boylston Street Chestnut Hill, MA 02467 (617) 232-8900 Jeremy Sclar Dick Marks Yanni Tsipis
Master Planners:	Sasaki Associates 64 Pleasant Street Watertown, MA 02472 (617) 926-3300 Alexandra Toteva Martin Zogran James Corner Field Operations 475 Tenth Avenue, 9th Floor New York, NY 10018 (212) 433-1450 Keith O'Connor Lisa Switkin

Master Planners: (Continued)	NADAAA 1920 Washington Street, #2 Boston, MA 02118 (617) 442-6232 Nader Tehrani Katie Faulkner
Permitting Consultant:	Epsilon Associates, Inc. 3 Mill & Main Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Cindy Schlessinger Laura Rome
Legal Counsel:	Goulston & Storrs PC 400 Atlantic Avenue Boston, MA 02110 (617) 482-1776 Doug Husid Peter Kochansky
Transportation and Parking Consultant:	Howard Stein Hudson 11 Beacon Street, Suite 1010 Boston, MA 02108 (617) 482-7080 Brian Beisel Andrew Fabiszewski
Geotechnical Consultant:	Haley & Aldrich 465 Medford Street, Suite 2200 Boston, MA 02129 (617) 886-7400 Marya Gorczyca
Civil Engineer:	Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108 (617) 338-0062 John Schmid

Landscape Architect: James Corner Field Operations.
475 10th Avenue, 9th Floor
New York, NY 10018
(212) 433-1450
Keith O'Connor
Ksenia Kagner

2.2 City of Boston Zoning

On October 13, 2010, the City of Boston Zoning Commission ("BZC") adopted a map amendment establishing Planned Development Area No. 78, Seaport Square Project, which approved zoning regulations for the 2010 Project. The BZC subsequently adopted six amendments to the Development Plan for Planned Development Area No. 78 (such plan, as amended, the "Original PDA Plan"). The Proponent will seek approval of an Amended and Restated Development Plan for Planned Development Area No. 78, which will add an additional air rights parcel to the Block P portion of the Project Site and address the other changes to the Project described in this NPC.

With respect to underlying zoning, the Project Site is within the Fort Point Waterfront Subdistrict of the Harborpark District (the "Fort Point Waterfront") governed by Article 42E of the Boston Zoning Code (the "Code"), except for Block Q and a portion of Block K, which are within the M-4 Restricted Manufacturing Subdistrict. The entire Project Site is also within the Restricted Parking Overlay District. Blocks H, J, K, and Q are within the Groundwater Conservation Overlay District. The regulations of the Code other than the Original PDA Plan constitute the Underlying Zoning for the Project Site.

In the Fort Point Waterfront, most of the uses contemplated to be included in the Project are allowed, including: Open Space/Recreational Uses; Community Uses and Cultural Facilities; Residential Uses; Hotel Uses; Office Uses; Research Center Uses; Local Retail and Service Uses; General Retail Uses; Restaurant Uses; Place of Worship; Exhibition/ Conference use; and Art/Artists' Mixed Use. Parking is a conditional use in the Fort Point Waterfront, but allowed in the Original PDA Plan.

As in the Original PDA Plan, the Amended and Restated PDA Plan will include deviations from underlying zoning with respect to the NPC Project to allow (1) Parking Uses (for commercial parking on Blocks D, F, G, L, N, and P); and (2) for any other uses not listed as Allowed in Section 42E-21. Day care facilities will be provided on previously developed Blocks within the PDA Site in the amount required by the Code for the entire Project.

The maximum Floor Area Ratio ("FAR") for the PDA Site will be approximately 7.65; individual zoning lots within the remaining Project Site (including adjacent lots in common ownership) will have FARs ranging from 0.2 to 15; the FAR for the NPC Project Site will be approximately 9.0. The maximum building heights for the NPC Project Blocks range from

15 feet to 270 feet. Underlying Zoning (Section 42E-12 and Section 42E-16) provides that the maximum FAR in the Fort Point Waterfront is 3.0, except that an FAR of 4.25 is allowed in the PDA Height Zone pursuant to an approved PDA. The maximum building heights for the Project Site pursuant to Underlying Zoning range from 155 feet to 250 feet (within the PDA Height Zone). Like the 2010 Project, the NPC Project will require zoning relief, which will be provided through the adoption of the Amended and Restated PDA Plan. Underlying Zoning (Section 42E-16.2(a)) provides, however, that they maximum FAR and maximum building heights for Planned Development Area No. 78 shall be as set forth in the corresponding Development Plan, so no zoning text amendment will be required in connection with the adoption of the Amended and Restated PDA Plan.

In the Fort Point Waterfront, projects south of the old configuration of Northern Avenue must provide open space of at least 30% of lot area. All of the Project Site is located south of the old layout of Northern Avenue and is thus subject to the 30% open space requirement, with the exception of a triangular portion of Blocks F and G, to which a 50% open space requirement would apply. Including the new streets that have been constructed and will be constructed within the Project Site, the Project will have approximately 8.8 acres or 37% open space; using the zoning definition yields approximately 7.0 acres or 30% open space. Section 42E-16.3 provides that open space for Planned Development Area No. 78 shall be as set forth in the corresponding Development, so again, no zoning text amendment will be required in connection with the approval of the Amended and Restated PDA Plan.

Off-street parking and loading requirements will be determined by the BPDA during its review of this NPC during Large Project Review.

2.3 Legal Information

2.3.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments in effect or legal actions pending that are adverse to the Project.

2.3.2 History of Tax Arrears on Property Owned in Boston by the Proponent

The Proponent is not in tax arrears on any property owned within the City of Boston.

2.3.3 Site Control/Public Easements

In October 2015, 2006, the Proponent acquired title to the NPC Project Site from MS Boston Seaport, L.L.C. the original proponent of the Project. Affiliates of the Proponent own or will own the retail components of Blocks B and C, K, L1 and L2, and M1 and M2. A portion of Block D is currently owned by the Archdiocese of Boston, and occupied by the original Chapel of Our Lady of Good Voyage. When construction and fit-out of the new chapel is complete on Block H, estimated to occur in the second quarter of 2017, the portion of Block D owned by the Archdiocese will be conveyed to the Proponent, and the old chapel will be demolished.

Within the Project Area, a parcel with an area of 2,469 square feet located between the current end of Farnsworth Street and Seaport Boulevard is owned by the MBTA, which intends to convey such parcel to the BRA. The Proponent will license the parcel from the BRA to allow for the construction and maintenance of the publicly-accessible Farnsworth Street Pedestrian Link.

Similarly, a parcel with an area of 3,614 square feet located between Blocks J and K, at the northern end of Thomson Place, is owned by the MBTA.

Pursuant to a 1997 Omnibus Settlement Agreement among MBLP, the Massachusetts Department of Highways (MHD), the Massachusetts Bay Transportation Authority (MBTA), and Energy International, Inc. (the "OSA"), MassDOT (as the successor to MHD) is required to transfer to the Proponent fee or easement interests in parcels of land previously taken from MBLP outside final roadway and transit rights of way, including an air rights parcel on Block P. The OSA establishes a procedure to determine the final configuration of Block P. In addition, MassDOT owns an approximately 236 square foot parcel at the southeast corner of Block G, within the current layout of Seaport Boulevard, which the Proponent intends to acquire from MassDOT. The Proponent intends to work with MassDOT to finalize any transfers required by the OSA.

2.4 Regulatory Controls and Permits

2.4.1 City of Boston Article 80 Review

The proposed NPC Project is subject to review by the BPDA pursuant to Article 80, Section 80A-6, Project Changes of the Boston Zoning Code. The 2010 Project, as defined herein, was approved by the BRA (now BPDA) Board on September 21, 2010, and the Director issued a Preliminary Adequacy Determination Waiving Further Review pursuant to Article 80B-5.4 of the Code on November 19, 2010. Changes to individual Blocks were made by the developers of those Blocks, and approved by the BRA and BZC through the amendments to the PDA Plan described in Section 2.2 above. The NPC Project proposes certain changes to the 2010 Project and thus is subject to additional BPDA review of this Notice of Project Change pursuant to Section 80A-6 of the Code.

2.4.2 Anticipated Permits, Reviews, and Approvals

The following permits, reviews, and approvals may be required for the NPC Project.

Table 2-1 Anticipated Permits, Reviews, and Approvals for the NPC Project (if necessary)

Agency Name	Permit, Review, or Approval
FEDERAL	
Environmental Protection Agency	National Pollution Discharge Elimination System
Federal Aviation Administration	FAA Height Restriction Notice; Section 19 Determination
STATE	
Executive Office of Energy and Environmental Affairs	Massachusetts Environmental Policy Act review of Notice of Project Change Review of Notice of Project Change pursuant to Landlocked Tidelands Public Benefit Determination
Department of Environmental Protection, Division of Wetlands and Waterways	Chapter 91 License (for Block G)
Department of Environmental Protection, Division of Air Quality Control	Air Plan Approval, if required
Department of Environmental Protection	Notification of Demolition and Construction
Massachusetts Water Resources Authority	Sewer Use Discharge Permit
Massachusetts Historical Commission	State Register Review
Massachusetts Department of Transportation	Change of Access Designation, Access Permit
Massachusetts Bay Transportation Authority	Approvals related to Silver Line facility connections
LOCAL	
Boston Planning and Development Agency	80A Review of Notice of Project Change; Recommendation of Approval of Amended and Restated PDA Plan pursuant to Article 80C
Boston Zoning Commission	Approval of Amended and Restated PDA Plan pursuant to Article 80C
Boston Civic Design Commission	Review and Approval
Fort Point Channel Landmark District Approval	Certificate of Appropriateness, Protection Area Guidelines (Block Q only)
Boston Conservation Commission	Orders of Conditions
Boston Air Pollution Control Commission	Parking Freeze Permits, Confirmation of Exemptions
Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Construction Dewatering Permit; Sewer Extension/ Connection Permit; Stormwater Connection; Cross Connection/Backflow Prevention Permit; Hydrant Meter Permit; Construction Permit for Facilities; and Termination Verification Permit (Chapel).
City of Boston Inspectional Services Department	Building and Occupancy Permits; Termination Verification Permit (Chapel)

Table 2-1 Anticipated Permits, Reviews, and Approvals for the NPC Project (if necessary) (Continued)

Agency Name	Permit, Review, or Approval
LOCAL	
Boston Public Improvement Commission	Acceptance of New Public Way or Private Way Open to Public Travel; Street and Sidewalk Occupancy Permits; Tieback/Earth Retention System License Agreement; Subsurface/Surface Discontinuances; Specific Repair Plan Approval; Licenses for Canopy or Projections.
Boston Department of Public Works	Street Occupancy Permit; Curb Cut Permit
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Plan
Boston Landmarks Commission	Article 85 Demolition Delay Review (Block D only)
Boston Public Safety Commission, Committee on Licenses	Permit to erect and maintain parking garage; Flammable storage license
Boston Fire Department	Storage tank permit; Burner and permit for fuel oil; Cross connection backflow preventer; Approval for sprinkler systems; Permit for maintenance of fire protection/equipment; Permit for safe access to the site; and Permit for welding and cutting equipment.

Chapter 3.0

Transportation

3.0 TRANSPORTATION

The Proponent engaged Howard Stein Hudson (HSH) to conduct an evaluation of the transportation impacts of the Project in the South Boston Waterfront neighborhood of Boston, Massachusetts. This transportation study adheres to the Boston Transportation Department (BTD) Transportation Access Plan Guidelines and Boston Planning and Development Agency (BPDA) Article 80 Large Project Review process. This study includes an evaluation of existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian activity.

3.1 Project Description

The proposed Project includes redefining the remaining blocks of the 2010 Project. Figure 1-1 shows the blocks that comprise the Project Site. Several of the Blocks of the Project Site have already gone through the block specific permitting process and have been constructed or are under construction (Blocks A, B, C, H, J, K, L1, L2, M1, M2, and Q). Table 3-1 compares the 2010 Project development program with the Project building program with units in square feet (sf).

Table 3-1 Building Program Comparison

Land Use	2010 Project	Project	Net
Retail	1,237,100 sf	1,123,495 sf	-113,605 sf
Office	1,157,300 sf	2,854,515 sf	+1,697,215 sf
Residential	2,840,800 sf	3,209,000 sf	+368,200 sf
Hotel	859,200 sf	476,800 sf	382,400 sf
Cultural	243,000 sf	16,200 sf	-226,800 sf
Total	**6,337,400 sf**	**7,680,010 sf**	**+1,342,610 sf**

Blocks D, F, G, L3, L4, L5, L6, N, and P (cumulatively, the "NPC Project") have yet to proceed through the block specific permitting process. As such, these blocks are considered the NPC Project for the purpose of this transportation study. The blocks of the 2010 Project that have already gone through the block specific permitting process are not considered part of this Project for the NPC transportation study. The NPC transportation study will determine the impacts of the new building programs for the Project Blocks. Table 3-2 summarizes the NPC Project development by use.

Table 3-2 NPC Project Build Program for Transportation Analysis

Land Use	2010 Project Built/Underway	Project	NPC Project Increase
Retail	459,295 sf	1,123,495 sf	664,200 sf
Office	822,975 sf	2,854,515 sf	2,031,540 sf
Residential	1,912,000 sf	3,209,000 sf	1,297,000 sf
Hotel	184,000 sf	476,800 sf	292,800 sf
Cultural	6,200 sf	16,200 sf	10,000 sf
Total	**3,384,470 sf**	**7,680,010 sf**	**4,295,540 sf**

The NPC Project also includes a reduction in the number of parking spaces that have been permitted. The 2010 Project included parking for up to 6,500 vehicles in new, below-grade parking garages (approximately 2,100 have been approved through Block permitting). The Project now proposes a total of up to 5,500 parking spaces, which results in approximately 3,400 parking spaces associated with the NPC Project.

3.1.1 Study Area

The study area was confirmed by BTD and BPDA and comprises the following 22 intersections, categorized by their current traffic control devices. The corresponding intersections are shown in Figure 3-1.

- Northern Avenue/Sleeper Street (unsignalized);
- Northern Avenue/Courthouse Way (unsignalized);
- Northern Avenue/Fan Pier Boulevard (unsignalized);
- Northern Avenue/Marina Park Drive (unsignalized);
- Northern Avenue/Harbor Shore Drive (unsignalized);
- Northern Avenue/Pier 4 Boulevard (signalized);
- Seaport Boulevard/Sleeper Street (signalized);
- Seaport Boulevard/Boston Wharf Road (signalized);
- Seaport Boulevard/East Service Road/Pier 4 Boulevard (signalized);
- Seaport Boulevard/B Street (signalized);
- Seaport Boulevard/Seaport Lane (unsignalized);

- Seaport Boulevard/Northern Avenue/D Street/Boston Fish Pier (signalized);
- Congress Street/Sleeper Street (unsignalized);
- Congress Street/Farnsworth Street (unsignalized);
- Congress Street/Thomson Place/A Street (signalized);
- Congress Street/Boston Wharf Road/West Service Road (signalized);
- Congress Street/I-90 EB Off-Ramp/I-93 NB Off-Ramp/East Service Road (signalized);
- Congress Street/B Street/I-93 On-Ramps/I-90 Off-Ramps (signalized);
- Congress Street/D Street (signalized);
- D Street/Silver Line Way (signalized);
- D Street/Massport Haul Road (I-90 On-Ramps) (signalized); and
- Summer Street/D Street (signalized).

3.1.2 Study Methodology

This transportation study and its supporting analyses were conducted in accordance with BTD guidelines, and are described below.

The Existing (2016) Condition analysis includes an inventory of the existing transportation conditions, such as traffic characteristics, parking, curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. Existing counts for vehicles, bicycles, and pedestrians were collected at the study area intersections. A traffic data collection effort forms the basis for the transportation analysis conducted as part of this evaluation. The 2010 Project Blocks A, K, L1, and Q were constructed and occupied during the data collection and are therefore included as part of the Existing Condition.

The future transportation conditions analysis evaluates potential transportation impacts associated with the Project. The long-term transportation impacts are evaluated for the year 2023, based on a seven-year horizon from the year of the filing of this traffic study.

The No-Build (2023) Condition analysis includes general background traffic growth, traffic growth associated with specific developments (not including the NPC Project), and transportation improvements that are planned in the vicinity of the Project Site. 2010 Project Blocks B, C, H, J, L2, M1, and M2 have undergone Block-specific permitting and are, therefore, included as part of the No-Build Condition.

Seaport Square Boston, Massachusetts

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Figure 3-1

Study Area Intersections

The Build (2023) Condition analysis includes a net increase in traffic volume due to the addition of Project-generated trip estimates to the traffic volumes developed as part of the No-Build (2023) Condition analysis. As previously discussed, the NPC Project includes Blocks D, F, G, L3, L4, L5, L6, N, and P. The transportation study identified expected impacts to roadway, parking, transit, pedestrian, and bicycle accommodations, as well as loading capabilities and deficiencies.

The final part of the transportation study identifies measures to mitigate NPC Project-related impacts and to address traffic, pedestrian, bicycle, transit, safety, or construction related issues that are necessary to accommodate the NPC Project.

An evaluation of short-term traffic impacts associated with construction activities is also provided.

3.2 Existing Condition

This section includes descriptions of existing study area roadway geometries, intersection traffic control, peak-hour vehicular and pedestrian volumes, average daily traffic volumes, public transportation availability, parking, curb usage, and loading conditions.

3.2.1 Existing Roadway Conditions

The study area includes the following roadways, which are categorized according to the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning functional classifications:

Seaport Boulevard is an urban extension of a minor arterial and generally runs east–west from Purchase Street in downtown Boston across the Evelyn Moakley Bridge to D Street in South Boston. East of D Street, Seaport Boulevard becomes Northern Avenue. Seaport Boulevard consists primarily of two lanes in each direction. Metered parking is available on both sides of Seaport Boulevard east of Sleeper Street to D Street. Parking is also allowed east of B Street. Sidewalks along Seaport Boulevard are in good condition and vary in width from 6 to 30 feet. Seaport Boulevard will be the main street of Seaport Square, providing the spine for much of its mixed-use development.

Northern Avenue in the study area is a public local connector roadway that extends from the closed Northern Avenue Bridge to Pier 4 Boulevard. While most vehicular traffic was removed from this street when the new Evelyn Moakley Bridge was constructed, Old Northern Avenue still serves as the primary corridor for local vehicular access into the Fan Pier development, as well as the Moakley United States Federal Courthouse, Institute of Contemporary Art, and Pier 4 parcels. The easterly segment of the street was recently realigned to connect with an extension of East Service Road (named Pier 4 Boulevard) in a standard four-way signalized intersection.

Sleeper Street is an urban collector that runs north–south from Northern Avenue to Congress Street. It consists of one lane in each direction. Residential parking is allowed along the east side of Sleeper Street south of Seaport Boulevard. In the study area, sidewalks on both sides of Sleeper Street vary from 5 to 15 feet wide.

Boston Wharf Road (formerly West Service Road) is a local street running north–south from Seaport Boulevard to below the elevated Summer Street. The street then curves toward the east and intersects with South Boston Bypass Road. North of Congress Street, West Service Road is called Boston Wharf Road. The road consists primarily of one lane in each direction. Parking is allowed only on Boston Wharf Road north of Congress Street. The entire length of the road is newly constructed, so sidewalks are in good condition and vary from 6 to 13 feet wide.

East Service Road is a one-way, northbound urban collector running from Congress Street to Seaport Boulevard. The road consists of two northbound travel lanes with parking on both sides until it nears the Seaport Boulevard intersection. Near that intersection, East Service Road has three lanes, with no parking allowed. East Service Road was recently constructed, so sidewalks are in good condition and are 7 feet wide on the east side and 11 feet wide on the west side of the road.

B Street is an urban minor arterial in the study area running north–south from Congress Street to Northern Avenue. B Street generally consists of two travel lanes in each direction, with a raised median and no parking on either side of the street. Sidewalks on B Street are in generally good condition and vary from 7 to 15 feet wide.

D Street is an urban minor arterial south of Summer Street and an urban extension of a minor arterial north of Summer Street. D Street runs generally north–south between Seaport Boulevard to the north and Dorchester Avenue to the south. D Street generally consists of two lanes in each direction separated by a raised median north of Summer Street. North of Congress Street, the D Street north- and southbound approaches diverge into two one-way sections in what is known as the “D Street Couplet.” At Northern Avenue, the north- and southbound roadways are separated by a 150-foot median. Parking is allowed only between Ramp DB and Congress Street on the east side and is unrestricted on the east side of D Street, south of Summer Street. Sidewalks are located on both sides of D Street throughout the study area and are generally in good condition and vary from 7 to 15 feet wide.

Congress Street is an urban minor arterial extending from New Sudbury Street in Boston to Northern Avenue in South Boston. In the study area, Congress Street runs east–west and generally comprises two lanes in each direction. It functions as a major access point for ramp system connections to I-90 and I-93. West of Atlantic Avenue, Congress Street is four lanes in the eastbound direction only. Throughout most of the study area, the roadway and sidewalks are newly constructed and in good condition and vary from 7 to 18 feet wide.

Between Sleeper Street and Boston Wharf Road, the road and sidewalk are in poor condition. Parking is allowed on the north side of Congress Street in most of the study area, and on the south side between West Service Road and East Service Road.

Thomson Place is a local road that runs north--south from Congress Street to Seaport Boulevard. Access to Seaport Boulevard is currently blocked by barricades and a construction trailer. Sidewalks between 7 and 8 feet in width run along the length of Thomson Place and are in generally good condition. The east side of Thomson Place near Congress Street has private perpendicular parking spaces for the adjacent building. When Construction on Block J is complete (mid 2017), Thomson Place will connect to Seaport Boulevard with one lane in each direction.

I-90 EB Off-Ramp is an off-ramp from the Massachusetts Turnpike (Mass Pike) eastbound at Exit 25. The road splits into the Off-ramp and South Boston Bypass when it emerges from underground. This off-ramp terminates at an intersection with the I-93 NB Off-ramp, East Service Road, and Congress Street. The Off-ramp headed east terminates at an intersection with the Massport Haul Road. Parking and pedestrian traffic are prohibited along the Off-ramp.

I-93 NB Off-Ramp comes from I-93 northbound, Exit 20, and terminates at its intersection with the I-90 EB Off-Ramp, Congress Street, and East Service Road. No parking or pedestrians are allowed along the off-ramp.

I-93 On-Ramp provides access from Congress Street and B Street to I-93 north- and southbound. On-Ramp D begins at its intersection with Congress Street, B Street, and the I-90 WB Off-Ramp. Parking and pedestrian traffic are prohibited along the I-93 On-Ramp.

I-90 WB Off-Ramp, Exit 25 from the Mass Pike westbound, terminates at its intersection with Congress Street, B Street, and I-93 On-Ramp. Parking and pedestrian traffic are prohibited along the I-90 WB Off-Ramp.

Summer Street is an urban principal arterial that runs generally east–west between Washington Street in Downtown Crossing to the west and East Second Street in South Boston to the east, where it then becomes L Street within the study area. Summer Street has two lanes in each direction. On-street parking is allowed on various sections of Summer Street throughout the study area. Sidewalks are provided on both sides of the street. Pavement markings on Summer Street are in good condition in the study area and vary from 9 to 40 feet wide.

3.2.2 Existing Intersection Conditions

Existing conditions at the study area intersections are described below.

3.2.2.1 Signalized Intersections

Northern Avenue/Pier 4 Boulevard is a signalized intersection with four approaches. The eastbound Northern Avenue approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The westbound approach is a driveway consisting of a shared left-turn/through/right-turn lane. The northbound Pier 4 Boulevard approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The Pier 4 Boulevard southbound approach consists of a shared left-turn/through/right-turn lane. This intersection has been recently constructed as a result of the realignment of Northern Avenue. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Seaport Boulevard/Sleeper Street is a signalized intersection with four approaches. The eastbound Seaport Boulevard approach consists of a shared left-turn/through lane, a through lane, and an exclusive right-turn lane. The westbound Seaport Boulevard approach consists of an exclusive left-turn lane, a through lane, and a shared through/right-turn lane. Metered parking is provided along both sides of Seaport Boulevard east of the intersection; no parking is allowed along Seaport Boulevard west of the intersection. The northbound approach of Sleeper Street consists of a left-turn/through/right-turn lane and an eight-foot lane for residential parking only. The Sleeper Street southbound approach has a shared left-turn/through lane and a right-turn lane. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Seaport Boulevard/Boston Wharf Road is a signalized T intersection. The eastbound approach, Seaport Boulevard, consists of a through lane and a shared through/right-turn lane. The westbound Seaport Boulevard approach consists of an exclusive left-turn lane, a through lane, and a through lane. The northbound approach of Boston Wharf Road consists of a left-turn lane and a shared left-turn/right-turn lane. Metered parking is provided along both sides of Seaport Boulevard and Boston Wharf Road. The Boston Wharf Road northbound approach serves as a drop-off zone for shuttles serving Block L1. All approaches have crosswalks and ADA compliant pedestrian ramps.

Seaport Boulevard/East Service Road/Pier 4 Boulevard is a signalized intersection with four approaches. The eastbound Seaport Boulevard approach consists of a left-turn lane and two through lanes. The westbound Seaport Boulevard approach consists of a through lane and a shared through/right-turn lane. Metered parking is provided along both sides of Seaport Boulevard west of the intersection; no parking is allowed along Seaport Boulevard east of the intersection. The northbound approach of East Service Road is one-way northbound and consists of an exclusive left-turn lane, through lane, and an exclusive right-turn lane. The Pier 4 Boulevard southbound approach consists of an exclusive left-turn lane and a shared left-turn/ right-turn lane. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Seaport Boulevard/B Street is a signalized T intersection. The eastbound Seaport Boulevard approach consists of a through lane and an exclusive right-turn lane. The westbound Seaport Boulevard approach consists of a shared left-turn/through lane and a through lane. The northbound approach of B Street consists of two left-turn lanes and a right-turn lane. Metered parking is provided along both sides of Seaport Boulevard east of the intersection; no parking is allowed along B Street or on Seaport Boulevard west of the intersection. All approaches have crosswalks and ADA compliant pedestrian ramps.

Seaport Boulevard/Northern Avenue/D Street (southbound)/Fish Pier Road is a four-leg, signalized intersection with four approaches. The eastbound Seaport Boulevard approach consists of a shared left-turn/through lane and a shared through/right-turn lane. The westbound Northern Avenue approach consists of a left-turn/through lane and a through/right-turn lane. The southern leg of the intersection, D Street, consists of a pair of one-way roads, southbound and northbound, separated by the South Boston Maritime Park. The northbound approach consists of an exclusive left-turn lane and an exclusive right-turn lane. Crosswalks and ADA compliant pedestrian ramps are located across all sides of the intersection.

Congress Street/A Street/Thomson Place is a four-leg, signalized intersection. The eastbound Congress Street approach consists of a shared left-turn/through lane, a through lane, and an exclusive right-turn lane. Parking is provided along Congress Street west of the intersection prior to the right-turn lane. The westbound Congress Street approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The north–south approaches are offset, with the southern approach 23 feet to the west of the northern approach. The northbound A Street approach consists of an exclusive left-turn lane and an exclusive right-turn lane. The southbound Thomson Place approach operates as a single left-turn/through/right-turn lane. Private, angled parking is located on the east side of Thomson Place. A bus stop is located south of the Thomson Place approach, just to the east of the A Street approach. Pavement markings and lane markings are in excellent condition along Congress Street but in poor condition along A Street and Thomson Place. Sidewalks on the northwest side of the intersection were recently reconstructed and in excellent condition. Other sidewalks are in fair condition. Crosswalks are provided across all approaches, and each crossing has ADA compliant pedestrian ramps. One traffic signal controls traffic operations at the intersection.

Congress Street/West Service Road/Boston Wharf Road is a four-way, signalized intersection. The eastbound Congress Street approach consists of a shared left-turn/ through lane and an exclusive right-turn lane. The westbound Congress Street approach consists of a left-turn lane, a through lane, and a shared through/right-turn lane. Parking is provided along both sides of Congress Street east of the intersection, but no parking is allowed along Congress Street west of the intersection. The northbound West Service Road approach consists of an exclusive left-turn lane and a through/right-turn lane. The Boston Wharf Road southbound approach consists of a left-turn/through lane and an exclusive right-turn lane. Parking is allowed along Boston Wharf Road north of the intersection on the east side only. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Congress Street/I-90 EB Off-Ramp/I-93 NB Off-Ramp/East Service Road is a five-leg, signalized intersection with four approaches. The eastbound Congress Street approach consists of a left-turn lane, a through lane, and a through lane. The westbound Congress Street approach consists of a through lane and a through lane with a channelized right turn. Parking is allowed along both sides of Congress Street west of the intersection, but no parking is allowed along Congress Street east of the intersection. The northbound approaches are I-90 EB Off-Ramp and I-93 NB Off-Ramp. I-90 EB Off-Ramp is the western of the two northbound approaches and consists of a through lane and a shared through/right-turn lane. The I-93 NB Off-Ramp approach consists of a shared left-turn/though lane, a through lane, and an exclusive right-turn lane that is channelized at the intersection. On the north side of the intersection, East Service Road consists of two north-bound receiving lanes. Parking is allowed on East Service Road north of the intersection on the east side only. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Congress Street/I-93 On-Ramp/I-90 WB Off-Ramp/B Street is a five-leg, signalized intersection with four approaches. The eastbound Congress Street approach consists of a shared left-turn/through lane, an exclusive through lane, and an exclusive right-turn lane. The westbound Congress Street approach consists of a left-turn lane; a shared left-turn/through lane; and a shared through/right-turn lane. Parking is provided along the north side of Congress Street west of the intersection, but no parking is allowed along Congress Street east of the intersection. I-93 On-Ramp and I-90 WB Off-Ramp are both located on the south side of the intersection. The I-93 On-Ramp is one-way southbound with access to I-93 north- and southbound. The I-90 WB Off-Ramp approach, which provides access from I-90 westbound, consists of an exclusive left-turn lane, a through lane, and a channelized right-turn lane. The southbound B Street approach consists of two through lanes and an exclusive right-turn lane. Left turns are not allowed from the B Street approach. No parking is allowed along B Street or the ramps. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

Congress Street/D Street is a signalized intersection with four approaches. The eastbound Congress Street approach consists of a shared left-turn/through lane, a shared through/right-turn lane, and an exclusive right-turn lane. The westbound Congress Street approach consists of a shared left-turn/through lane and a shared through/right-turn lane. Parking is provided along the north side of Congress Street west of the intersection, but no parking is allowed along Congress Street east of the intersection. D Street runs north–south through the intersection with the directions separated by a wide median. The median is planted and widens gradually as D Street travels northward from the south. The median is 45 feet wide on the south side of the intersection and 85 feet wide on the north side. The northbound D

Street approach consists of a dual left turn and a shared through/right-turn lane. The southbound D Street approach consists of a shared left-turn/through lane and a shared through/right-turn lane. Parking is allowed on the east side of D Street south of the intersection, but no parking is allowed on D Street north of the intersection. All approaches have sidewalks, ADA compliant pedestrian ramps, and crosswalks.

D Street/Silver Line Way is a four-leg, signalized intersection. The eastbound Silver Line Way approach is a gated, exclusive way for the MBTA Silver Line busway and consists of a through lane. No private vehicles or pedestrians are allowed on the eastbound approach. The westbound approach, the Transitway, consists of a shared left-turn/ through/right-turn lane. The through maneuver is for the Silver Line and authorized MBTA vehicles. The northbound D Street approach consists of two through lanes and a shared through/right-turn lane. The southbound approach consists of a shared left-turn/though lane and a through lane. Parking is located on the east side of D Street. Crosswalks and ADA compliant pedestrian ramps are located across the eastbound and westbound approaches only. Sidewalks are located along all approaches except the eastbound approach. Both Silver Line Way approaches are actuated, but no signal preemption or priority is currently in place for Silver Line vehicles.

D Street/Massport Haul Road (I-90 On-Ramps) is a three-leg, signalized intersection. The northbound D Street approach consists of an exclusive left-turn lane and two through lanes. The southbound D Street approach consists of a shared through/right-turn lane and a through lane. The western leg of the intersection, Massport Haul Road, is one-way westbound and provides access to both directions of I-90. Crosswalks, pedestrian signal equipment, and ADA compliant pedestrian ramps are provided across the D Street southbound approach and Massport Haul Road.

Summer Street/D Street is a four-leg, signalized intersection at the southeasterly corner of the Seaport Square Project area. The Summer Street eastbound approach consists of an exclusive left-turn lane, an exclusive through lane, and a shared through/right-turn lane. Summer Street westbound consists of a shared left-turn/ through lane, a through lane, and a channelized exclusive right-turn lane. D Street northbound is a three-lane approach with an exclusive left-turn lane, a through lane, and a shared through/right-turn lane with an eight-foot adjacent parking lane. Southbound D Street is a three-lane approach with an exclusive left-turn lane, a shared left-turn/through lane, and a shared through/right-turn lane. Parking is allowed along the north side of Summer Street west of the intersection and along both sides of D Street south of the intersection. All approaches have crosswalks and ADA compliant pedestrian ramps. Pedestrian pushbuttons activate concurrent pedestrian phases at the intersection.

3.2.2.2 Unsignalized Intersections

Northern Avenue/Sleeper Street is an unsignalized intersection with three approaches. The Northern Avenue eastbound approach consists of a shared through/right-turn lane. The Northern Avenue westbound approach consists of a shared left-turn/through lane. The Sleeper Street northbound approach consists of a shared left-turn/right-turn lane. All approaches have crosswalks and ADA compliant pedestrian ramps; however due to construction south of Northern Avenue the southern sidewalk is currently inaccessible.

Northern Avenue/Courthouse Way is an unsignalized intersection with three approaches. The Northern Avenue eastbound approach consists of a shared left-turn/through lane. The Northern Avenue westbound approach consists of a shared through/right-turn lane. The Courthouse Way southbound approach consists of a shared left-turn/right-turn lane. All approaches have crosswalks and ADA compliant pedestrian ramps; however due to construction south of Northern Avenue at Blocks B and C the southern sidewalk is currently inaccessible.

Northern Avenue/Fan Pier Boulevard is an unsignalized intersection with three approaches. The Northern Avenue eastbound approach consists of a shared left-turn/through lane. The Northern Avenue westbound approach consists of a shared through/right-turn lane. The Fan Pier Boulevard southbound approach consists of a shared left-turn/right-turn lane. The westbound and southbound approaches both have crosswalks and ADA compliant pedestrian ramps. Due to construction, the sidewalk south of Northern Avenue is currently inaccessible. In the future condition at the completion of Block C (mid 2017), Fan Pier Boulevard will continue to Seaport Boulevard, creating a four-way intersection.

Northern Avenue/Marina Park Drive is an unsignalized intersection with three approaches. The Northern Avenue eastbound approach consists of a shared left-turn/through lane. The Northern Avenue westbound approach consists of a shared through/right-turn lane. The Marina Park Drive southbound approach consists of a shared left-turn/right-turn lane. The westbound and southbound approaches of the intersection have crosswalks and ADA compliant pedestrian ramps.

Northern Avenue/Harbor Shore Drive is an unsignalized intersection with three approaches. The Northern Avenue eastbound approach consists of a shared left-turn/through lane. The Northern Avenue westbound approach consists of a shared through/right-turn lane. The Harbor Shore Drive southbound approach consists of a shared left-turn/right-turn lane. There are crosswalks and ADA compliant pedestrian ramps at all approaches of the intersection.

Seaport Boulevard/Seaport Lane is an unsignalized intersection with two approaches and a one-way southbound lane. The Seaport Boulevard eastbound approach consists of a through lane and a shared through/right-turn lane. The Seaport Boulevard westbound approach consists of a shared left-turn/through lane and a through lane. Seaport Lane is one-way southbound exiting the intersection. Crosswalks and ADA compliant pedestrian ramps are at all approaches of the intersection.

Congress Street/Sleeper Street is an unsignalized intersection with three approaches. The Congress Street eastbound approach consists of a shared left-turn/through lane. The Congress Street westbound approach consists of a shared through/right-turn lane. The Sleeper Street southbound approach consists of a shared left-turn/right-turn lane. Only the southbound approach of the intersection has a crosswalk and ADA compliant pedestrian ramps.

Congress Street/Farnsworth Street is an unsignalized intersection with three approaches. The Congress Street eastbound approach consists of a shared left-turn/through lane. The Congress Street westbound approach consists of a shared through/right-turn lane. The Farnsworth Street southbound approach consists of a shared left-turn/right-turn lane. The southbound and eastbound approaches of the intersection have crosswalks and ADA compliant pedestrian ramps.

Seaport Boulevard/Thomson Place/Fan Pier Boulevard is an unsignalized intersection with three approaches, but the northbound approach is not currently open to traffic. The eastbound Seaport Boulevard approach consists of a U-turn lane and two through lanes. The westbound Seaport Boulevard approach consists of two through lanes. Metered parking is provided along both sides of Seaport Boulevard east of the intersection, and on the south side west of the intersection. No parking is permitted along the north side of Seaport Boulevard west of the intersection. Sidewalks are provided along Seaport Boulevard and the northbound approach of Thomson Place. Crosswalks with ADA compliant pedestrian ramps are located across both approaches of Seaport Boulevard. Since the northbound approach of Thomson Place is currently not in use, this location does not currently operate as an intersection.

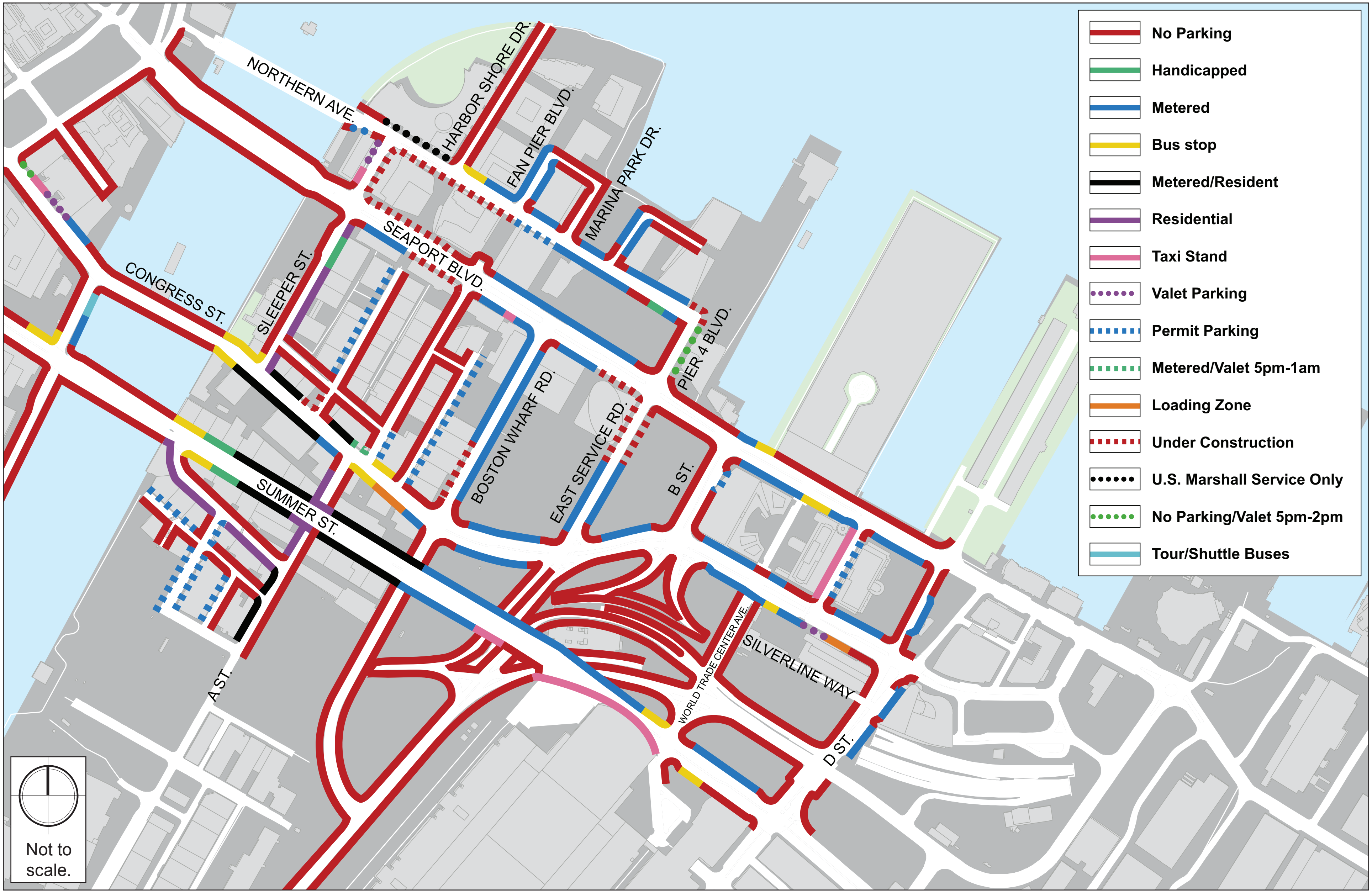
Under future conditions this location will become a signalized four-way intersection. Thomson Place at the completion of Block J (mid 2017) will connect to Seaport Boulevard acting as the northbound approach. The fourth leg of this intersection, the southbound approach, will be the extension of Fan Pier Boulevard south from Northern Avenue.

3.2.3 Existing Parking

An inventory of the existing on-street and off-street parking in the vicinity of the Project Area was collected. A description of each follows.

3.2.3.1 On-Street Parking and Curb Usage

On-street parking surrounding the Project Site consists of predominately metered parking. The on-street parking regulations within the study area are shown in Figure 3-2.



Seaport Square Boston, Massachusetts

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Figure 3-2
On-Street Parking

3.2.3.2 Off-Street Parking

There are more than 11,275 off-street parking spaces within one-quarter mile, or a five-minute walk, of the Project Site. These parking spaces consist of a mix of public parking spaces, residential parking spaces, and private parking spaces. Approximately 3,901 parking spaces are found in parking lots and 7,374 are in parking garages. A detailed summary of all parking lots and garages is shown in Table 3-3.

Table 3-3 Off-street Parking Lots and Garages within a Quarter-Mile of the Site

Facility	Capacity	Facility	Capacity
Parking Garages		**Parking Lots**	
17 Farnsworth Street	361	Martin Richard Park/Sleeper Street	24
22 Boston Wharf Road/29-49 Stillings St	500	390 Congress Street (Seaport Blocks L3-L6)	683
30-60 Necco Street Garage	585	145 Seaport Boulevard (Seaport Block M)	373
One Seaport Lane Hotel Garage	2,390	321 Congress Street	85
425 Summer Street Westin Garage	400	381 Congress Street	28
Fan Pier Garage	2,161*	391 Congress Street (Seaport Blocks N & P)	299
Fish Pier Garage	110	284 A Street Channelside Lot	622
Waterside Place	140*	309 A Street	1,787*
100 Pier 4	258*		
Watermark (Seaport Block K)	144		
PWC (Seaport Block L1)	325		
Parking Garages Subtotal	**7,374**	**Parking Lots Subtotal**	**3,901**
Total Parking Spaces		**11,275**	

*Not all of the capacity is available for public parking.

In the future build condition of the Project, several of the surface parking lots will be replaced with parking garages located beneath the new buildings. The parking lots at 390 Congress Street, 391 Congress Street, and 145 Seaport Boulevard (Blocks L3, L4, L5, L6, M, N, and P) will all be built over, eliminating the existing 1,355 public surface parking spaces and replacing them with garage spaces that will mostly be used by the on-site tenants.

3.2.3.3 Car Sharing Services

Car sharing enables easy access to short-term vehicular transportation. Vehicles are rented on an hourly or daily basis, and vehicle costs (gas, maintenance, insurance, and parking) are included in the rental fee. Vehicles are checked out for a specific time period and returned to their designated location.

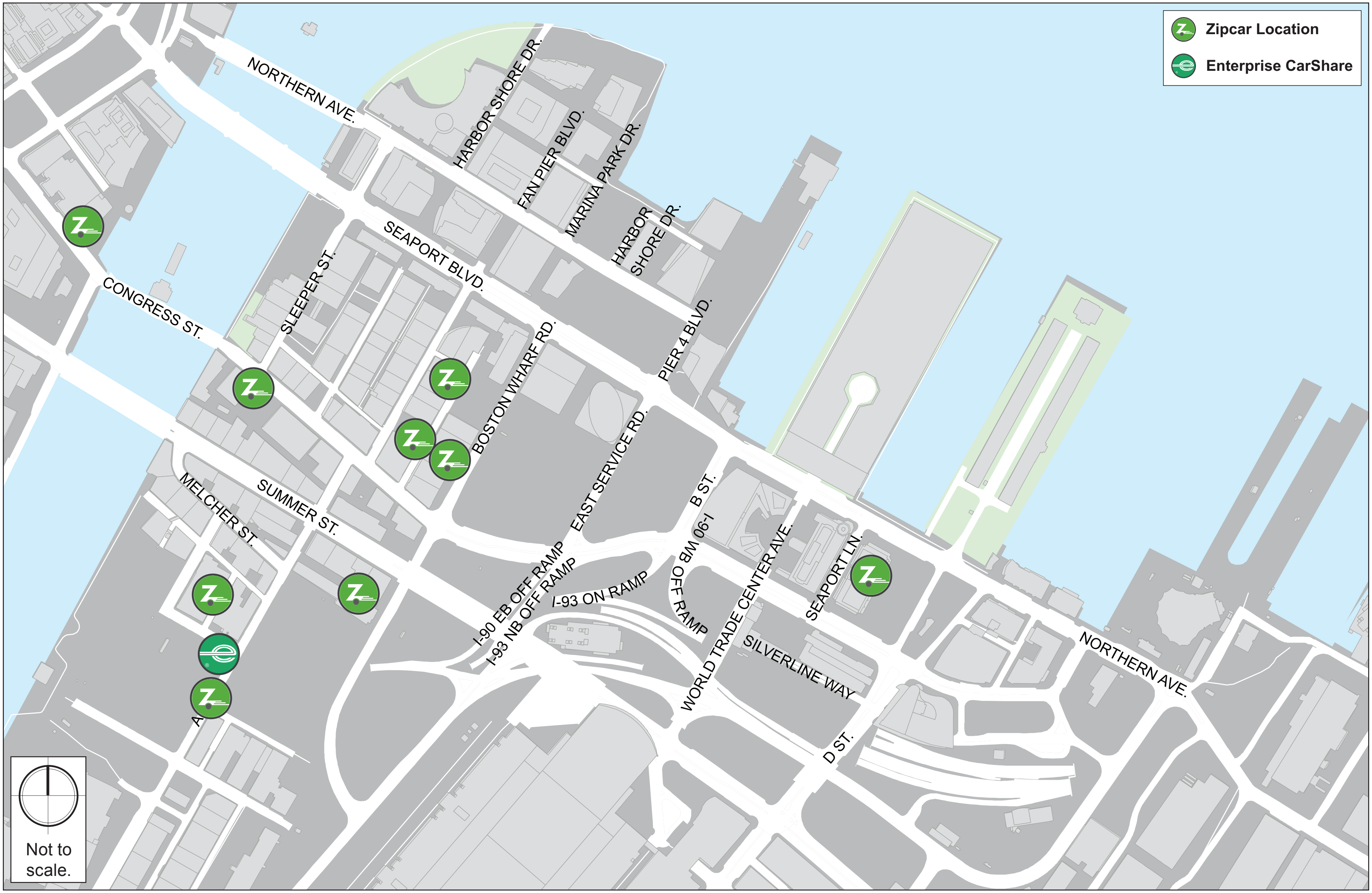
Zipcar is the primary company in the Boston car sharing market. There are currently eleven Zipcar locations and one Enterprise CarShare location within a half-mile walk of the Project Site. The nearby car sharing locations are shown in Figure 3-3.

3.2.4 Existing Traffic Data

Traffic volume data was collected at the twenty-two study area intersections on November 1, 2016. Turning Movement Counts (TMCs) and vehicle classification counts were conducted during the weekday a.m. and weekday p.m. peak periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m., respectively). The traffic classification counts included car, heavy vehicle, pedestrian, and bicycle movements. The Existing (2016) weekday a.m. Peak Hour and weekday p.m. Peak Hour traffic volumes are shown in Figures 3-4 and Figure 3-5, respectively. The detailed traffic counts are provided in Appendix A.

3.2.4.1 Seasonal Adjustment

To account for seasonal variation in traffic volumes throughout the year, data provided by MassDOT was reviewed. The most recent (2011) MassDOT Weekday Seasonal Factors were used to determine the need for seasonal adjustments to the November 2016 TMCs. The seasonal adjustment factor for roadways similar to the study area (Group 6) is 0.97. This indicates that average month traffic volumes are approximately three percent less than the traffic volumes that were collected for the Project study. The collected traffic counts were not adjusted downward to reflect average month conditions; therefore they provide a conservatively high analysis of existing conditions. The MassDOT 2011 Weekday Seasonal Factors table is provided in Appendix A.



Seaport Square **Boston, Massachusetts**

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Figure 3-3
Car Sharing Services

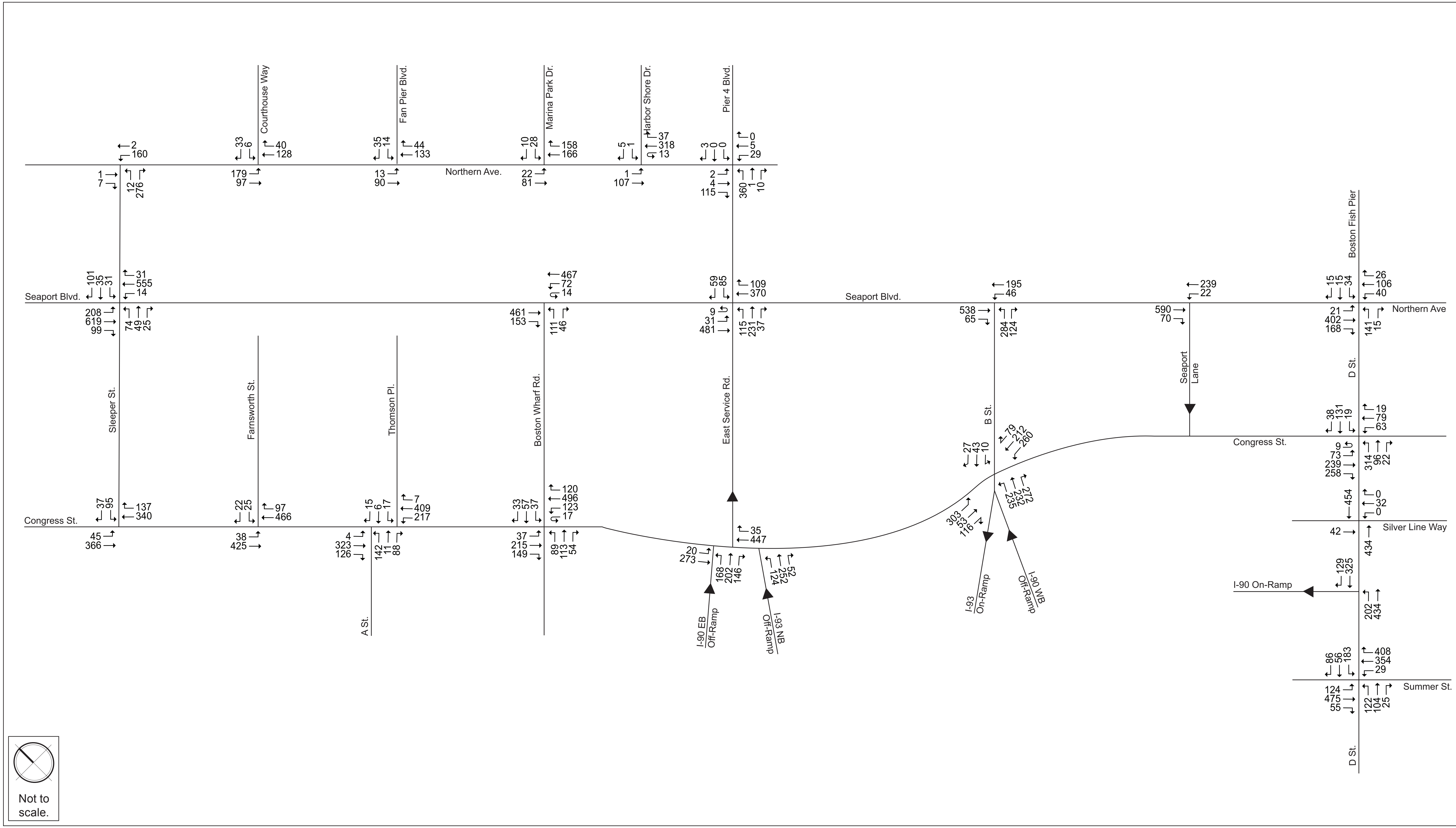


Figure 3-4

Existing (2016) Condition Traffic Volumes, Weekday a.m. Peak Hour

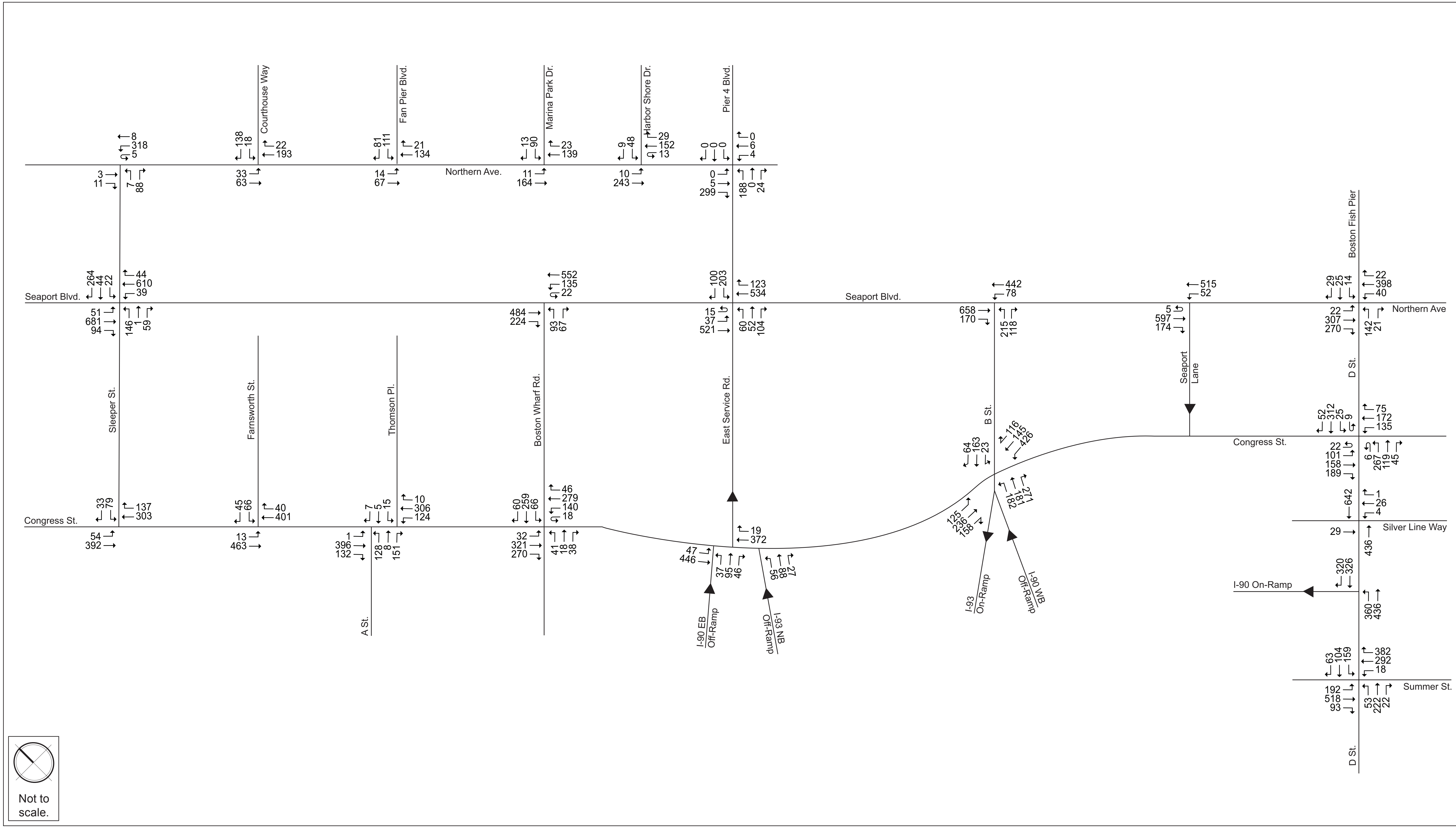


Figure 3-5

Existing (2016) Condition Traffic Volumes, Weekday p.m. Peak Hour

3.2.5 Existing Bicycle Volumes and Accommodations

In recent years, bicycle use has increased dramatically throughout the City of Boston. The Project Area is conveniently located near several bicycle facilities. The City of Boston's "Bike Routes of Boston" map designates Northern Avenue as a beginner route, suitable for all types of bicyclists, including newer cyclists, cyclists with limited on-road experience, and children. The "Bike Routes of Boston" map also designates Seaport Boulevard, Congress Street, A Street, and D Street as intermediate routes. Intermediate routes are suitable for riders with some on-road experience.

Bicycle counts were conducted concurrent with the vehicular TMCs and are presented in Figure 3-6. As shown in the figure, bicycle volumes are heaviest along Seaport Boulevard and Congress Street during the peak periods.

3.2.5.1 Bicycle Sharing Services

The Project Area is also located near bicycle sharing stations provided by Hubway. Hubway is the bicycle sharing system in the Boston area, which was launched in 2011 and consists of over 140 stations and 1,300 bicycles. There are six Hubway locations within a quarter mile of the site. Figure 3-7 shows the Hubway stations within one quarter mile radius. Once the construction of Blocks B and C (located east of Sleeper Street at Seaport Boulevard) is completed, the previously existing Hubway Station will be reinstalled.

3.2.6 Existing Pedestrian Volumes and Accommodations

In general, sidewalks are provided along all roadways and are in good condition. Crosswalks are provided at all study area intersections. Pedestrian signal equipment is provided at all of the signalized study area intersections.

To determine the amount of pedestrian activity within the study area, pedestrian counts were conducted concurrent with the TMCs at the study area intersections and are presented in Figure 3-8. As shown in the figure, pedestrian activity is heavy throughout the study area, particularly along Northern Avenue and Congress Street.

3.2.7 Existing Public Transportation

The Project Site is within one-half mile (a 10-minute walk) of South Station, a transportation hub that provides access to the MBTA Red Line, Silver Line, and eight commuter rail branches. In addition, the MBTA Silver Line Courthouse and World Trade Center stations are located near the Project Area The MBTA operates six bus routes, as well as two Silver Line routes, near the Project Area as well. South Station is also the terminus for Amtrak train service along the Northeast Corridor. Greyhound and Peter Pan provide regional and commuter bus service from South Station. Figure 3-9 maps the public transportation service located in close proximity of the Project Area, and Table 3-4 provides a summary of the routes.

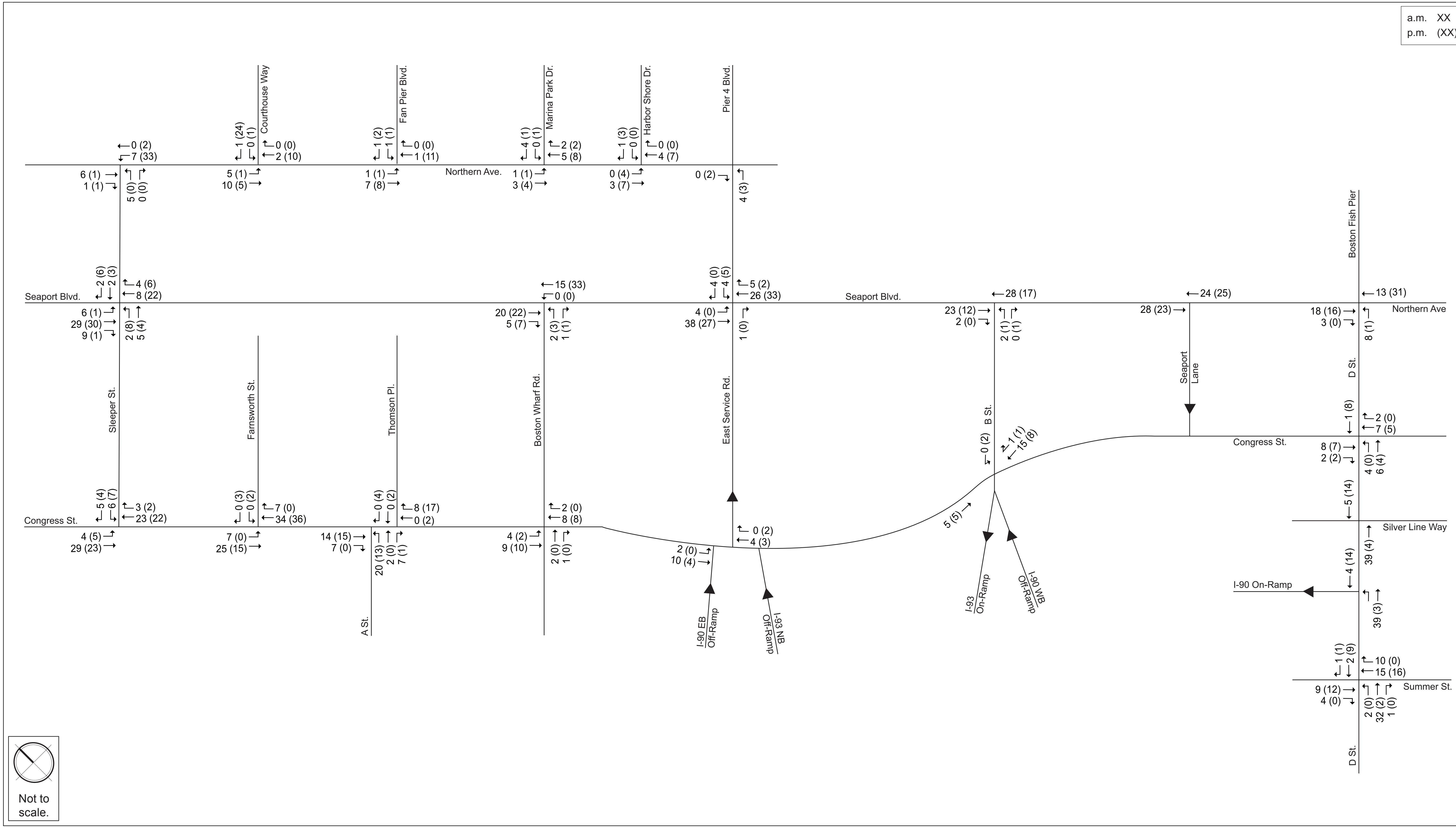
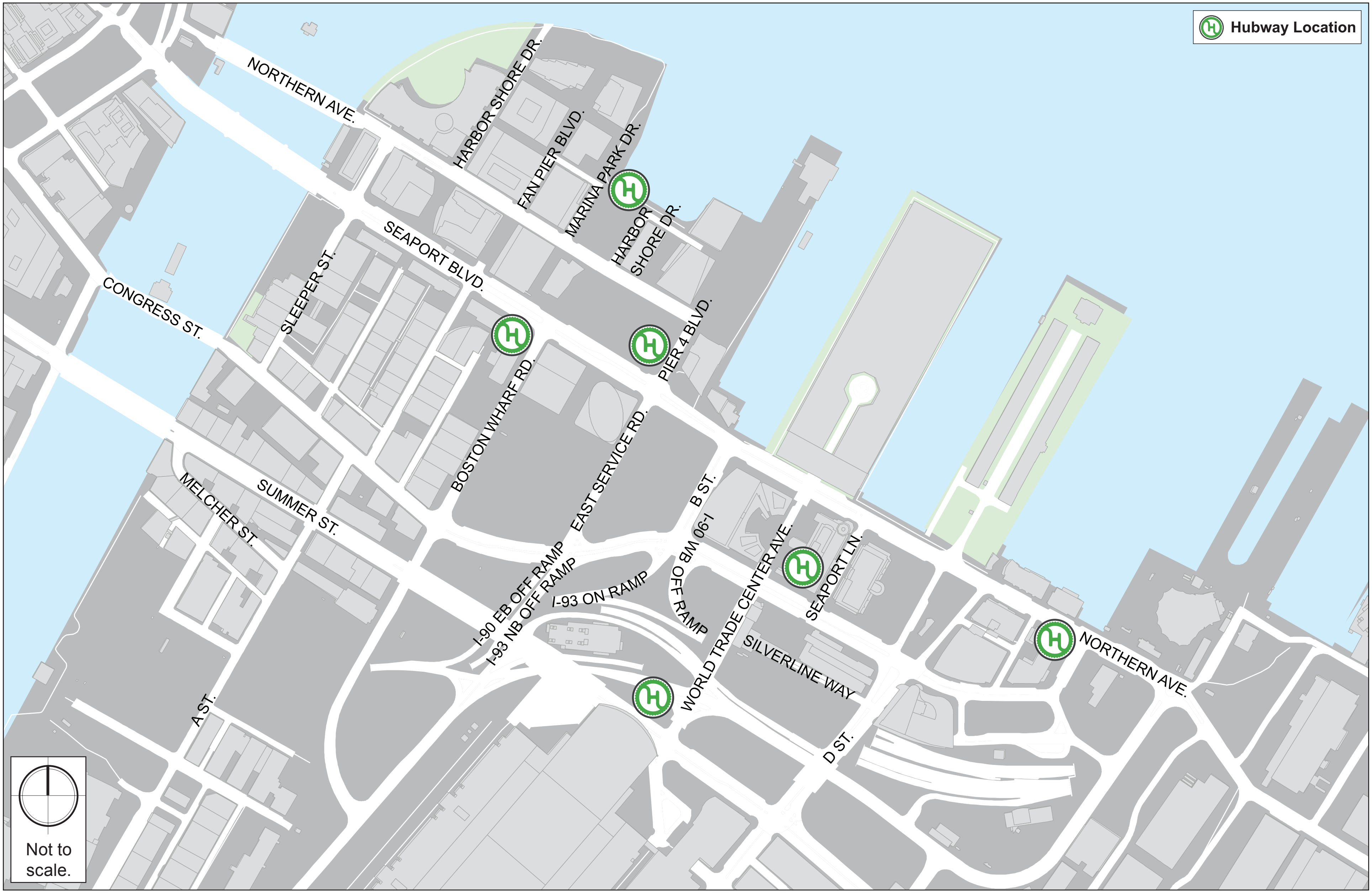


Figure 3-6

Existing (2016) a.m. and p.m. Bicycle Volumes



Seaport Square **Boston, Massachusetts**

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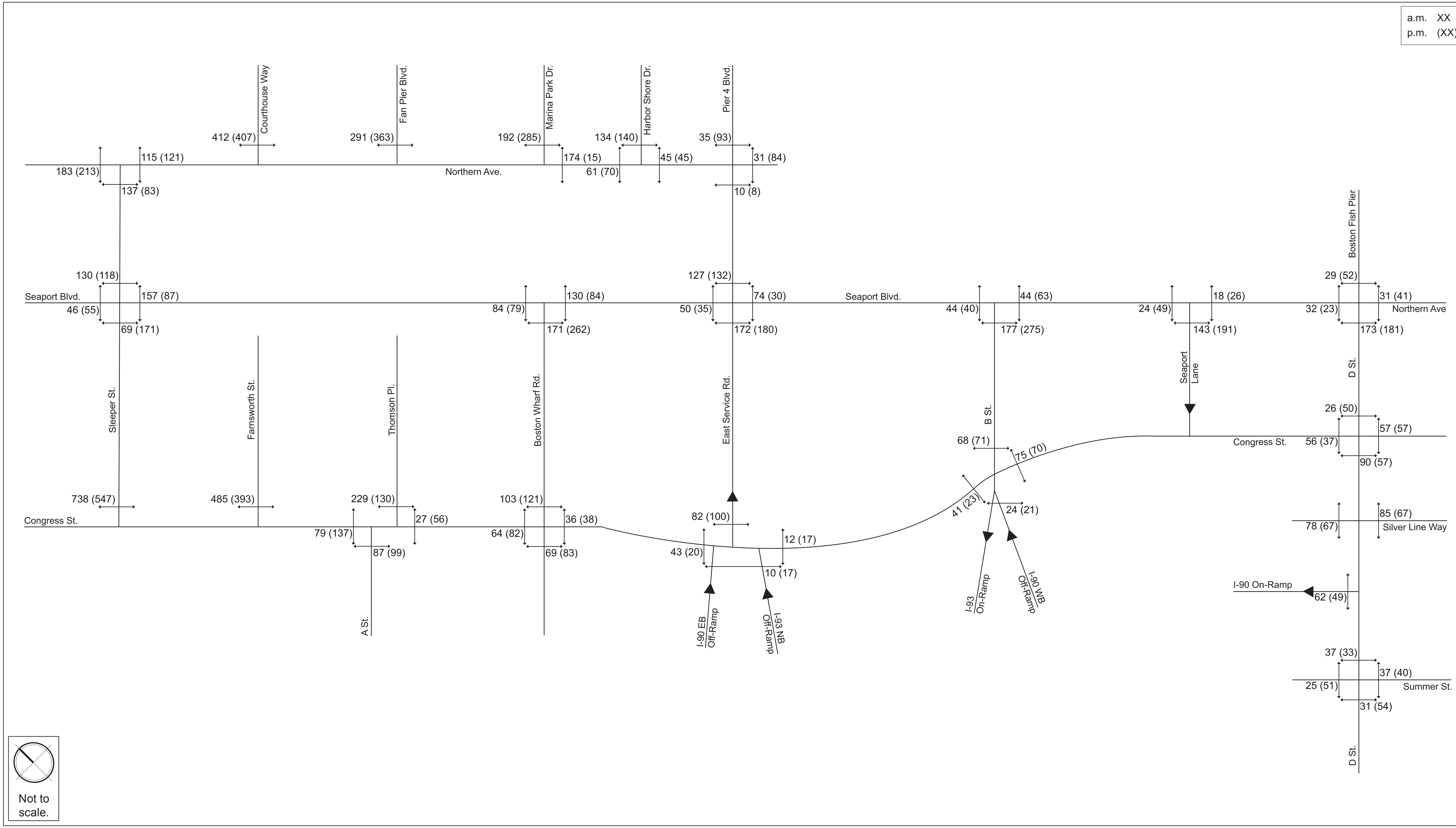
Figure 3-7

Bicycle Sharing Services



Seaport Square Boston, Massachusetts

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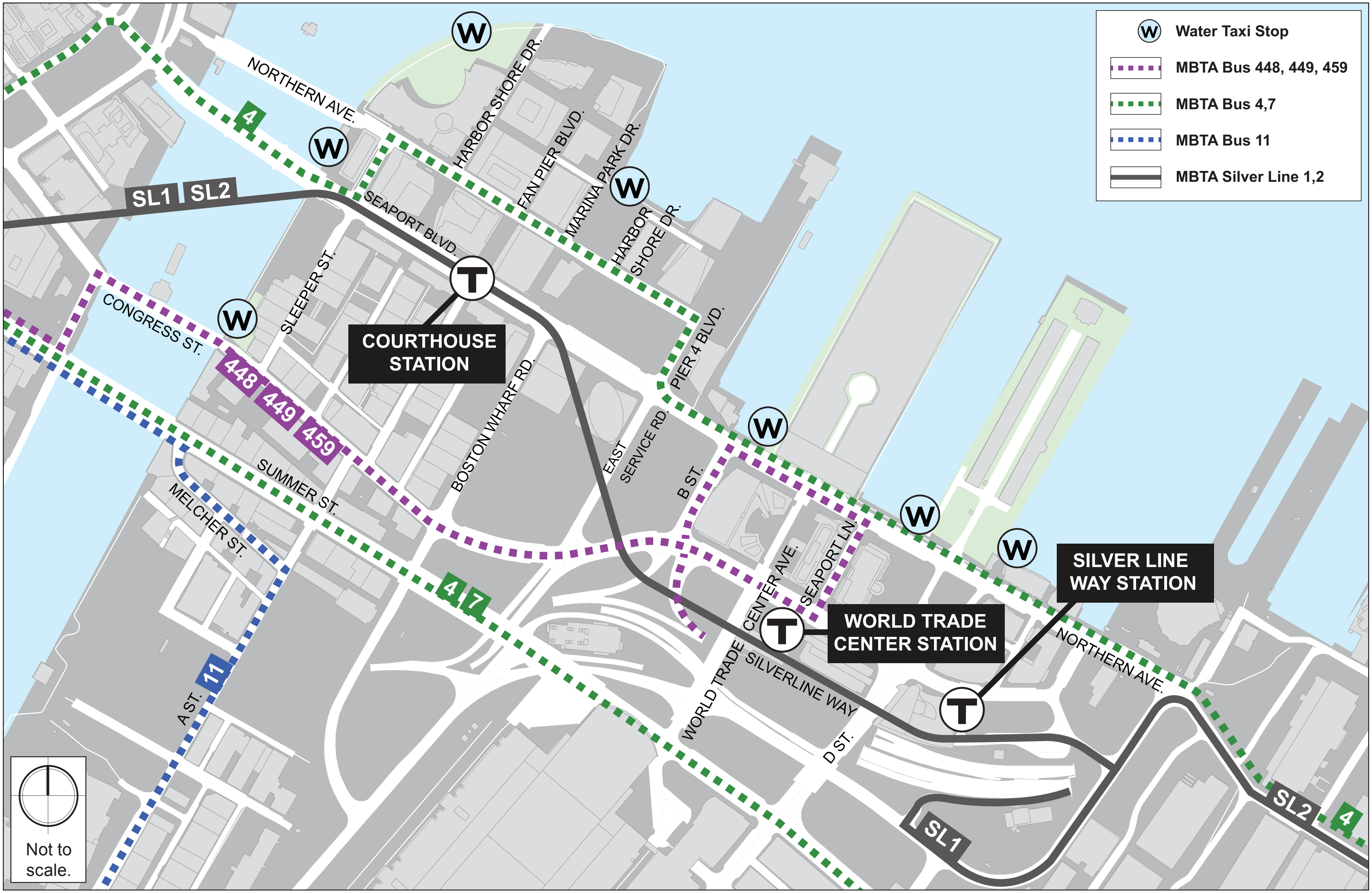
Figure 3-8

Existing (2016) a.m. and p.m. Pedestrian Volumes



Seaport Square **Boston, Massachusetts**

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Figure 3-9
Public Transportation

Table 3-4 Existing Public Transportation Service Summary

Transit Service	Description	Rush-hour Headway (in minutes)*
Subway Routes		
Red	Alewife – Braintree/Ashmont	9
Bus Routes		
SL1	South Station – Logan Airport/South Boston	2-3
SL2	Design Center/South Boston – South Station	
4	North Station – World Trade Center	15
7	City Point – Otis & Summer Streets	4-7
11	City Point – Downtown Crossing	6
448	Marblehead – Downtown Crossing	60
449	Marblehead – Downtown Crossing	60
459	Salem Depot – Downtown Crossing	75

* Headway is the time between trains/buses.

The Project Site is located about a half-mile (a 10-minute walk) from South Station, a transportation hub that provides access to eight commuter rail branches serving communities to the west and south of Boston. Commuter trains from South Station serve Plymouth, Kingston, Middleborough/Lakeville, Stoughton, Providence, Forge Park-495, Needham Heights, and Worcester. South Station is also the terminus for Amtrak train service along the Northeast Corridor.

Commuter rail service to communities north of Boston operates out of North Station, located farther from the Project Site. Five commuter rail lines operate from North Station, including Rockport, Newburyport, Haverhill, Lowell, and Fitchburg. While North Station is fairly distant from the Project Site, the Orange Line provides a direct transit connection from Downtown Crossing station to North Station.

The MBTA Water Shuttle Route F1 operates from Rowe's Wharf to Hingham. Routes F2 and F2H operate from Hull to Logan Airport to Long Wharf. Route F4 runs between Charlestown and Long Wharf. Two water taxi services also serve Fan Pier directly. Boston Harbor Cruise's City Water Taxi provides year-round water shuttle service in Boston's inner harbor. Water taxi pick-up and drop-off locations in the Seaport area include Anthony's Pier Four, Fan Pier, the Barking Crab restaurant, the Children's Museum, the Seaport World

Trade Center, the Bank of America Pavilion, and the Black Falcon Cruise Terminal. Water taxis serve seven locations along the downtown waterfront, three in Charlestown, and two in East Boston, including Logan Airport. Project area water taxi stops are shown in Figure 3-9.

3.2.8 Crash Data

Motor vehicle crash data from the MassDOT Crash Records System were compiled from available data for the most recent three-year period (2012–14). Crash rates for the study area intersections were calculated and compared to the district averages for signalized and unsignalized intersections. In MassDOT District 6, where Seaport Square is located, the average number of crashes at a signalized intersection is 0.88 crashes per million entering vehicles (MEV). For unsignalized intersections, the average is 0.63 crashes per MEV. Of the 22 intersections studied, none of the locations had an average crash rate greater than the District average. Of the 13 crashes that have occurred at the study area intersections within the past three years, none involved a fatality.

A summary of crash data for study area locations is included in Appendix A.

3.3 No-Build (2023) Condition

The No-Build (2023) Condition reflects a future scenario that incorporates anticipated traffic volume changes associated with background traffic growth independent of any specific project, traffic associated with other specific planned developments, and planned infrastructure improvements that will affect travel patterns in the study area. These infrastructure improvements include roadway, public transportation, pedestrian, and bicycle improvements.

3.3.1 Background Traffic Growth

The methodology to account for generic future background traffic growth, independent of the NPC Project, may be affected by changes in demographics, smaller scale development projects, or projects unforeseen at this time. Based on a review of recent and historic traffic data collected recently and to account for additional unforeseen traffic growth, a traffic growth rate of one percent per year, compounded annually, was used. The following projects were accounted for in the background traffic growth:

Innovation Square at Northern Avenue – This project calls for the construction of approximately 360,000 sf for a research and development/manufacturing facility and 60 parking spaces. This project has been approved by the BPDA.

Stavis Seafood (Former Boston Cargo Terminal) – This project calls for the construction of a new state-of-the-art seafood processing and marine warehousing and industrial facility totaling 201,000 sf.

South Boston Waterfront Transportation Center – This project calls for the construction of a new multi-modal transportation center consisting of 2,229 parking spaces with connections to the MBTA Silver Line and bike and car-sharing services. The facility is being developed by the Massachusetts Port Authority (Massport) to support other Massport development parcels (some are already occupied, some are under construction, and some have not begun the permitting process). The traffic associated with the garage was determined based on the building program of each individual parcel.

3.3.2 Specific Development Traffic Growth

Traffic volumes associated with known development projects can affect traffic patterns throughout the study area within the future analysis time horizon. Nine such projects were specifically accounted for in the traffic volumes for future scenarios, while others were included in the general background traffic growth (the site-specific background projects are mapped on Figure 3-10):

General Electric Headquarters - This project calls for the construction of a 388,700 sf building to serve as the new headquarters for General Electric. This project has been approved by the BPDA board.

399 Congress Street - This project calls for the construction of a 414 unit apartment building with parking for 144 vehicles. This project has been approved by the BPDA Board.

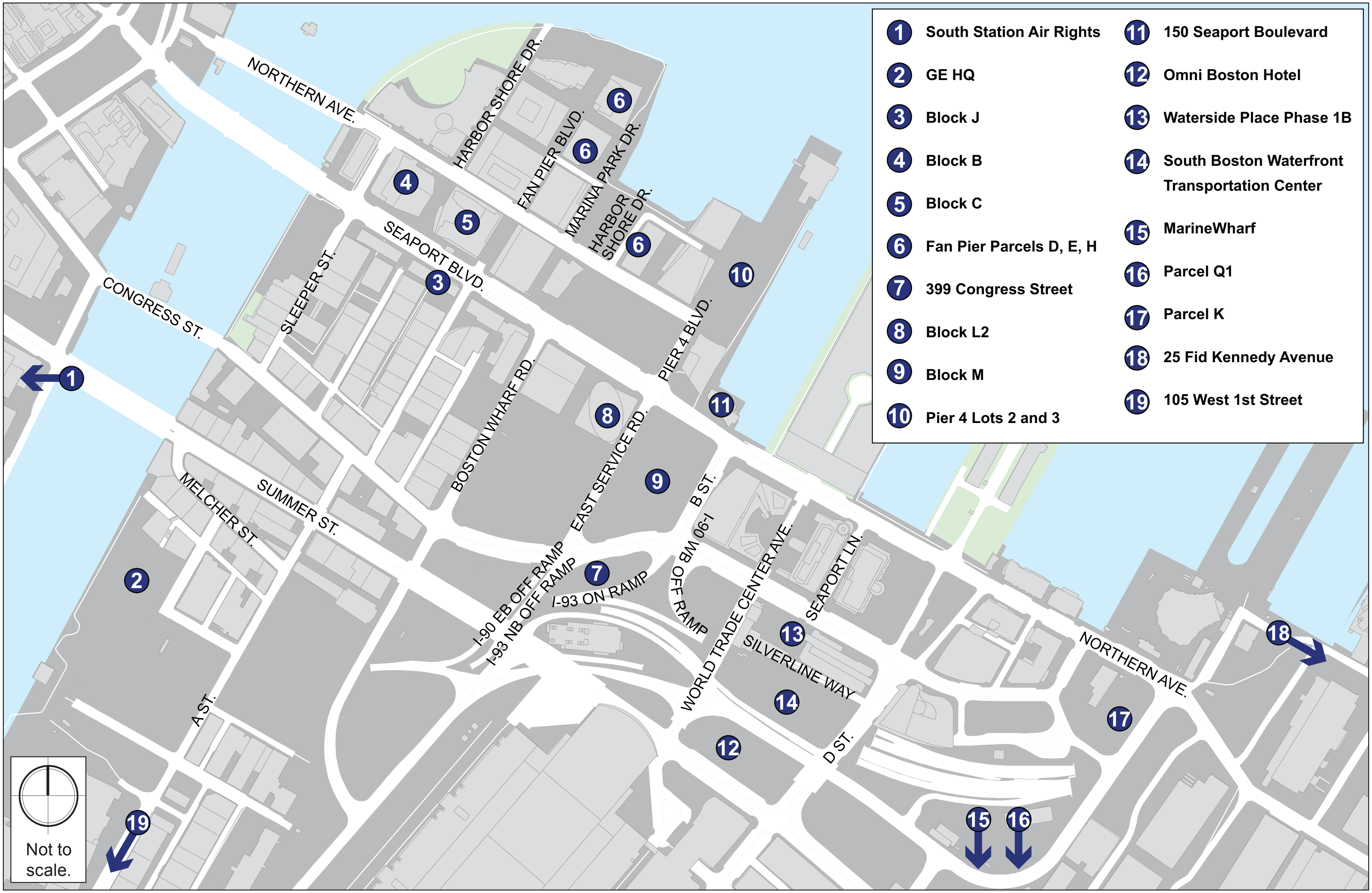
Waterside Place Phase 1B (Massport)– This project calls for the construction of a new 23-story, 345,000 sf building containing 312 residential units, 2,000 sf of retail space, and 84 parking spaces. This project has been approved by the BPDA Board.

150 Seaport Boulevard – This project calls for 283,700 sf of new development comprising 124 residential units, 10,700 sf of commercial and retail space, and 179 parking spaces. This project has been approved by the BPDA Board.

Marine Wharf – This project calls for the construction of an approximately 320,000 sf hotel with 411 rooms and 3,500 sf of retail and parking for 75 space garage. This project has been approved by the BPDA Board.

Fan Pier (Parcels D, E, & H) – This project consists of the construction of buildings on the lots adjacent to the new Vertex Pharmaceuticals global headquarters. The build out of the rest of the parcels will include 125,000 sf of office space, 125,000 sf, 29,000 sf of retail space, 150 hotel rooms, and 160 condominium units. This project has been approved by the BPDA Board and is under construction.

Pier 4 (Lots 2 & 3) – This project consists of the build out of the lots adjacent to the newly completed Pier 4 mixed use development. The remainder of the lots consists of 353,000 sf of office space, 36,800 of retail space, and 106 condominium units. This project has been approved by the BPDA and is under construction.



Seaport Square Boston, Massachusetts

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Figure 3-10
Background Projects

***25 Fid Kennedy Avenue* –** This project calls for the rehabilitation of an approximately 157,000 sf building for use as a plumbing, HVAC, fire-protection, and related construction product assembly plant. This project has been approved by the BPDA Board.

***Benjamin and Via (Blocks B/C)* –** This project is part of the Seaport Square development that has been permitted. The project consists of 230,000 sf of retail and 832 residential units. This project is under construction and scheduled to open in 2017

Yotel (Block J) – This project, located across from Blocks B/C, is part of the Seaport Square development that has already been permitted. The project consists of 99,000 sf of hotel with 12,000 sf of ground retail. This project is under construction and set to open in 2017.

121 Seaport (Block L2) – This project, located next to the existing 101 Seaport PWC building, is another part of the Seaport Square development that has already been permitted. The project consists of 372,400 sf of office space and 59,638 sf of retail space. This project is under construction and set to open in 2018.

Blocks M1/M2 – This project, located east of 121 Seaport, is another part of the Seaport Square development that has already been permitted. The project consists of 750 residential units and 125,000 sf of retail. The project has been approved by the BPDA Board and is set to open in 2019.

22 Boston Wharf Road – This project consists of a two-floor addition to the existing structure totaling 56,000 sf of new office space, as well as a conversion of 3,000 sf of parking into ground floor retail. This project has been approved by the BPDA and is under construction.

Omni Boston Hotel (Massport Parcel D2) – This project calls for the construction of a 1,050 room hotel, consisting of regular and micro-hotel units, and 61,000 sf of retail. This project was previously approved in 2007 as part of a master plan but will need to go through a site specific permitting process.

South Station Air Rights – This project consists of construction above South Station totaling 1,375,000 sf of office space, 170,000 sf of residential space, a 200-room hotel, and 934 parking spaces. This project was recently approved by the BPDA.

Parcel Q1 – This project calls for the construction of an approximately 298,700 sf office building with a small amount of ground floor retail and approximately 150 parking spaces. This project was recently approved by the BPDA.

Parcel K – This project calls for the construction of two buildings consisting of 304 residential units, 293 hotel units, 17,928 sf of retail space, and 14,400 sf of office space with parking for 640 vehicles. This project was recently approved by the BPDA.

105 West 1st Street – This project calls for the development of an eight-story, 266,750 sf office/research and development building. This project has filed a letter of intent with the BPDA.

3.3.3 Proposed Infrastructure Improvements

A review of planned improvements to roadway, transit, bicycle, and pedestrian facilities was conducted to determine if there are any improvement projects in the vicinity of the study area. Based on this review, it was determined that the future condition will see infrastructure improvements along the Seaport Boulevard and Northern Avenue corridors. Fan Pier Boulevard, which currently terminates at Northern Avenue, will continue south and connect to Seaport Boulevard at Thomson Place to create a new signalized intersection.

Two new mid-block signalized pedestrian crossings will connect Farnsworth Street and Courthouse Way as well as a signalized crossing linking Harbor Way north and south of Seaport Boulevard.

The Seaport Boulevard corridor between Sleeper Street and B Street will undergo modifications, including improved streetscapes, buffered bicycle lanes (where possible), and signal timing improvements. The signal timing modifications will provide longer walk times for pedestrians and improve the coordination between the intersections to allow for better traffic progression through the corridor.

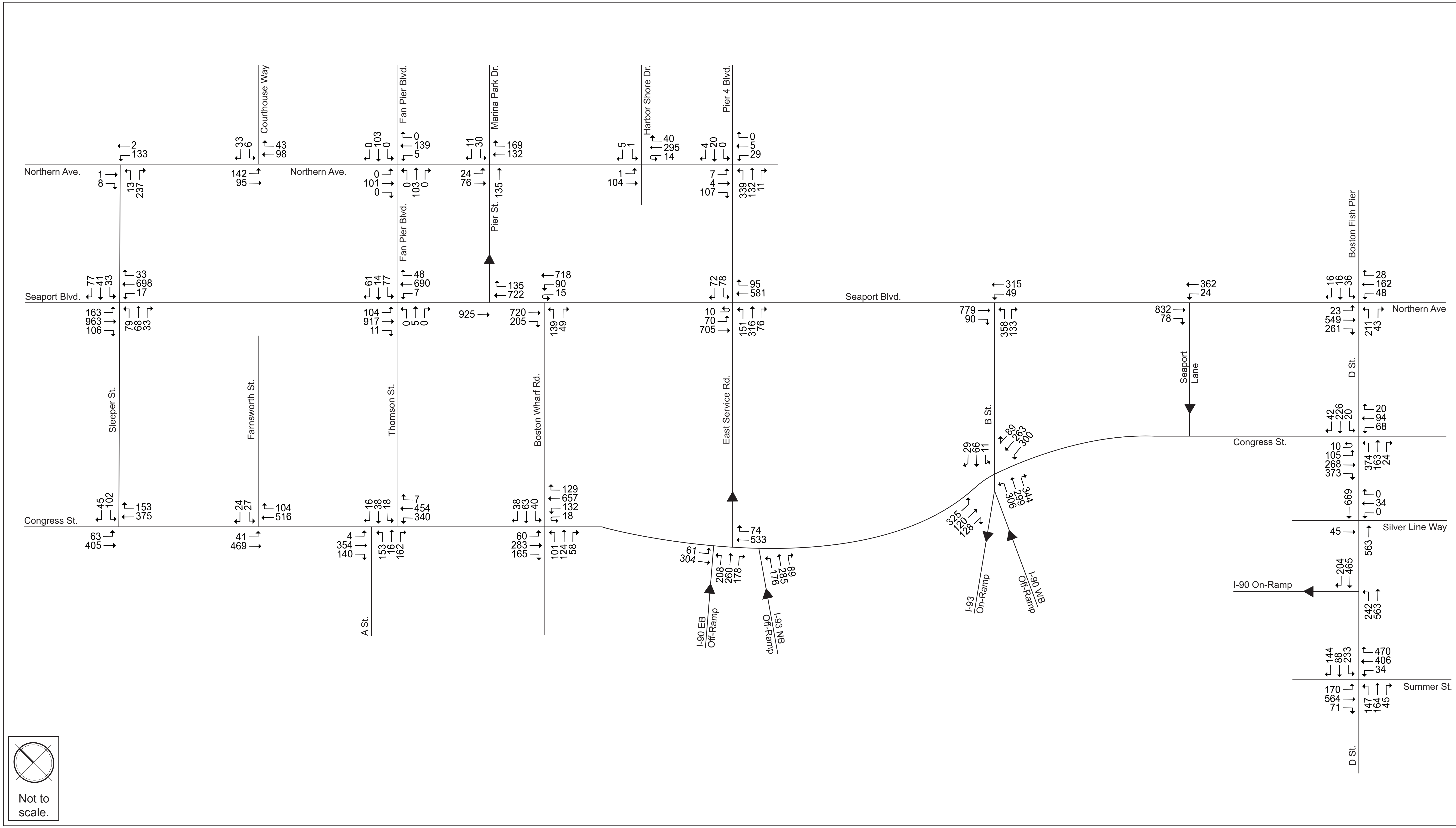
A new link between Northern Avenue and Seaport Boulevard will be created at the intersection of Marine Park Drive/Northern Avenue will be known as Pier Street. The new road will operate as one-way northbound.

3.3.4 No-Build Traffic Volumes

The one percent per year annual growth rate, compounded annually, was applied to the Existing (2016) Condition traffic volumes. Then the traffic volumes associated with the background development projects listed above were added to develop the No-Build (2023) Condition traffic volumes. The No-Build (2023) weekday morning and evening peak hour traffic volumes are shown on Figures 3-11 and Figure 3-12, respectively.

3.4 Build (2023) Condition

As previously mentioned, the proposed NPC Project consists of the build out of Blocks D, F, G, L3-L6, N, and P. The remaining build out includes approximately 4.29 million square feet in addition to the approximately 3.38 million square feet that has already been through block specific permitting as part of the 2010 Project. This includes approximately 2.0 million square feet of office space, 1.3 million square feet of residential space, 660,000



Seaport Square **Boston, Massachusetts**

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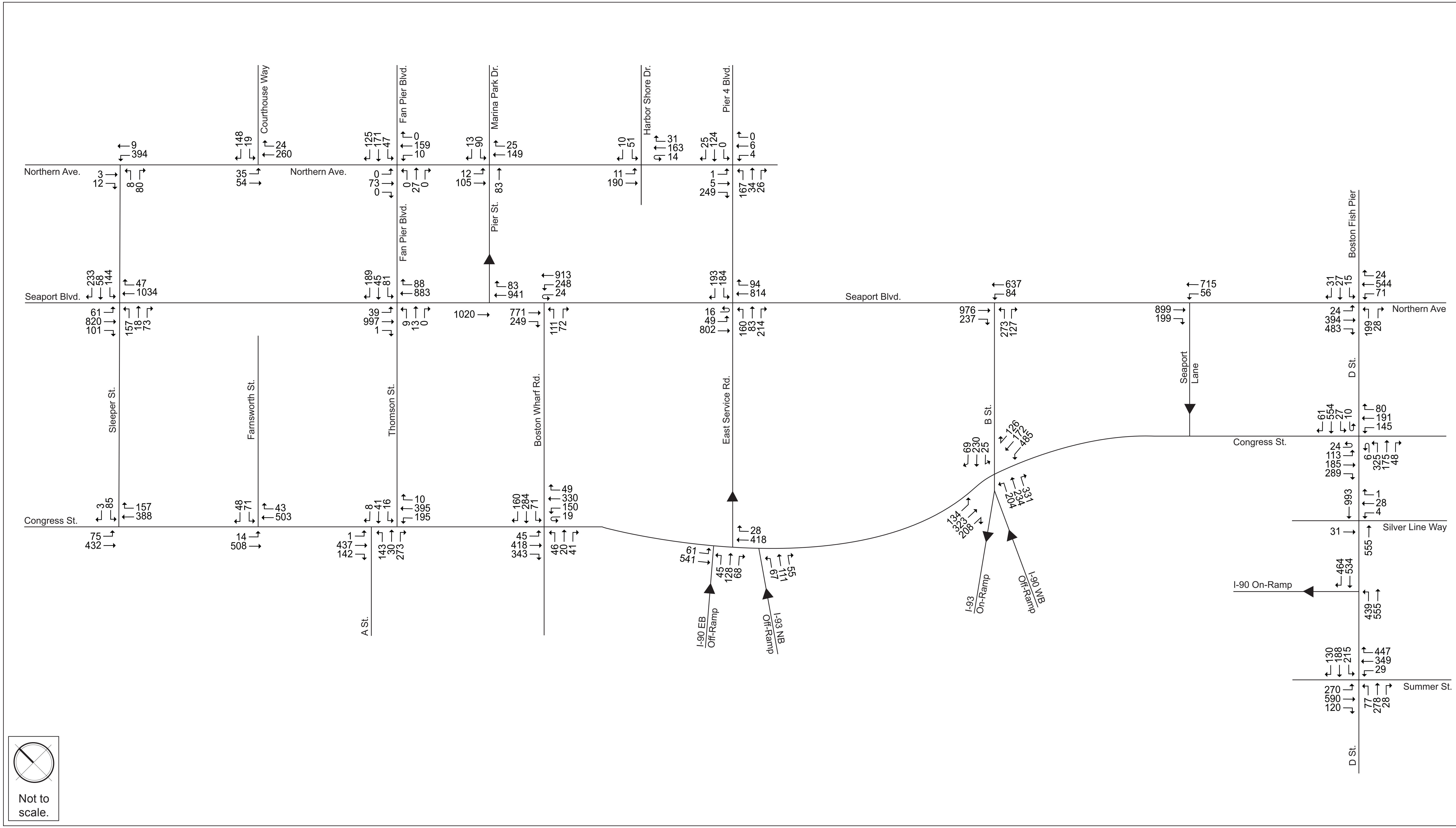
Figure 3-11

No Build (2023) Condition Traffic Volumes, Weekday a.m. Peak Hour



Seaport Square **Boston, Massachusetts**

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Figure 3-12

No Build (2023) Condition Traffic Volumes, Weekday p.m. Peak Hour square feet of retail space, and 292,000 square feet of hotel space. The remaining development will include an increase of approximately 3,400 parking spaces to the block specific permitted 2,100 parking spaces. The transportation circulation in the Project Area is shown in Figure 3-13.

3.4.1 Site Access and Vehicle Circulation

The NPC Project will be served by multiple parking garages. Garages will be located under Block D (connecting to the Blocks B & C garage), Blocks F & G, L3-L6, and N & P. Access to the Block D garage is proposed via a driveway on Fan Pier Boulevard. Access to the Blocks F & G garage is proposed on the west side of the G Block. Block L3-L6 garage is proposed to have one driveway on Boston Wharf Road and one driveway on East Service Road. The Block N & P garage entrance is proposed along Boston Wharf Road south of Congress Street. Figure 3-14 shows the proposed parking garage driveway locations.

3.4.2 Loading and Service Accommodations

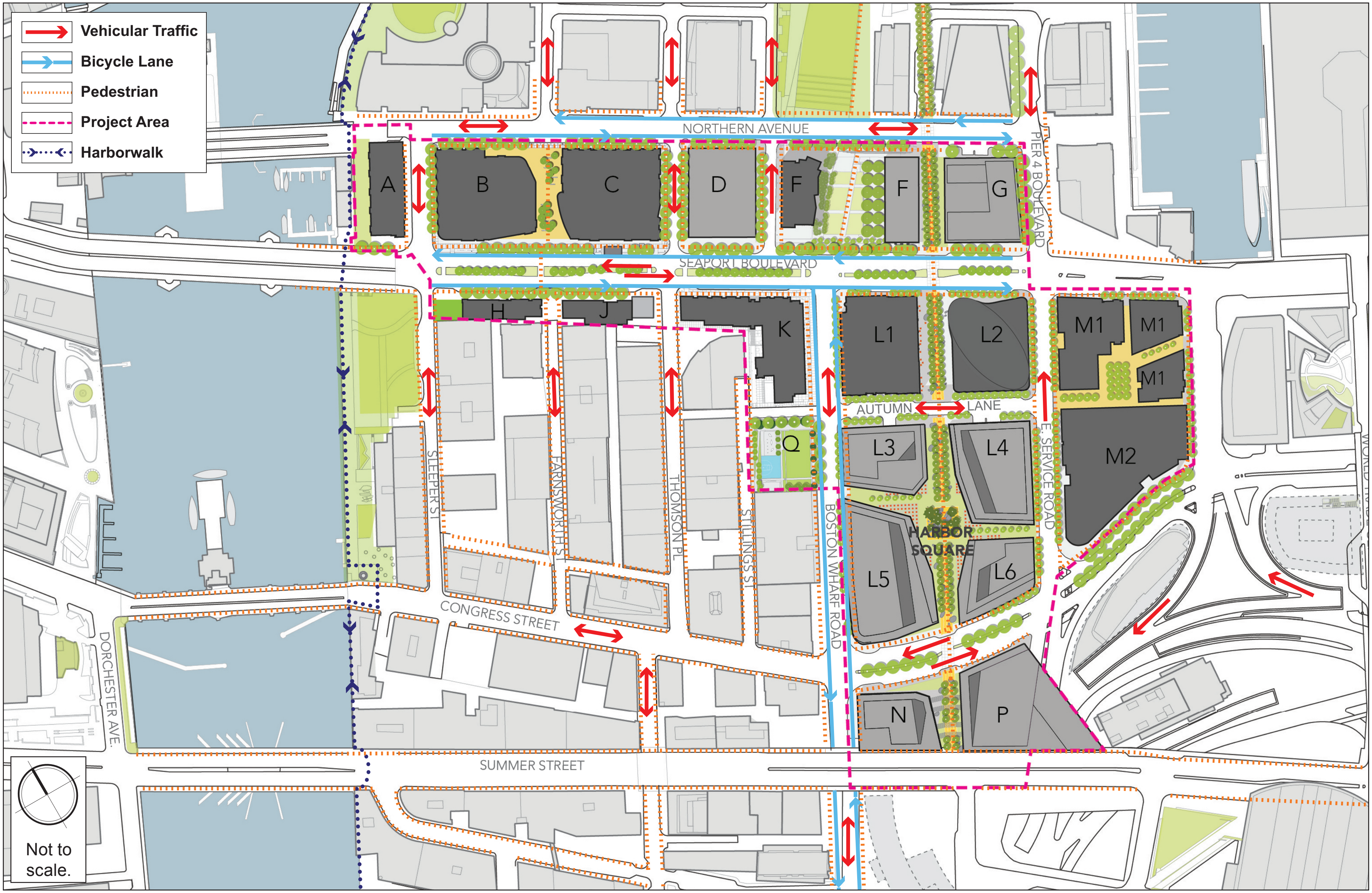
The NPC Project will be served by multiple loading areas. Blocks D, G, and N & P will each have a loading area adjacent to its respective garage entrances. Block L3-L6 will have two loading areas along Autumn Lane (one each at L3 and L4). Blocks L5 and L6 will be served by a combined loading area with access along Boston Wharf Road that is located adjacent to the garage entrance. Figure 3-14 shows the proposed loading area locations.

3.4.3 Project Parking

The 2010 Project included 6,500 parking spaces. The NPC Project proposes to lower this total to approximately 5,500. With approximately 2,100 spaces already permitted, the NPC Project includes an additional 3,400 spaces.

As documented in unpublished surveys conducted by HSH in several downtown neighborhoods, based on current Boston parking trends, parking demand has been declining over the last few years. This trend is only expected to continue with the continued use of new mobility options (including Uber/Lyft and shuttle services, both private and public such as Bridj) and the advent of autonomous vehicles within a few years.

A parking supply and demand study conducted in November 2016 at the two occupied Seaport Square buildings (Block K - Residential and Block L1 - Office) determined that the respective on site uses are not utilizing all of the spaces within the garage. The additional spaces are being leased as monthly public parking. Providing public parking for commuters will only encourage motorists not destined for the South Boston Waterfront to continue to drive in the area, as has historically occurred due to the surface parking lots. Reducing the excess parking that is not needed by the proposed uses is expected to reduce the existing traffic volume traveling in the area.



Seaport Square **Boston, Massachusetts**

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Figure 3-13

Transportation Circulation Plan

Seaport Square **Boston, Massachusetts**

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Figure 3-14

Loading and Parking

3.4.4 Trip Generation Methodology

Determining the future trip generation of a project is a complex, multi-step process that produces an estimate of vehicle trips, transit trips, and walk/bicycle trips associated with a proposed development and a specific land use program. A project's location and proximity to different travel modes determines how people will travel to and from a site.

To estimate the number of trips expected to be generated by the NPC Project, data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*[1] were used. ITE provides data to estimate the total number of unadjusted vehicular trips associated with a project. In an urban setting well-served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit.

To supplement the ITE trip generation rates, HSH performed detailed field counts on November 1, 2016 to determine the trip rates and mode share percentages for the occupied Block K residential building (Watermark) and Block L1 office building (PWC). The counts and resulting trip generation rates were used to determine the trip rates for the proposed residential and office uses of the NPC Project. For the other land uses (retail and hotel), the ITE trip rates were used. To estimate the unadjusted number of vehicular trips for the NPC Project, the following ITE land use codes (LUCs) were used:

Land Use Code 310 – Hotel. Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops. Calculations of the number of trips use ITE's average rate per 1,000 sf.

Land Use Code 820 – Shopping Center. The Shopping Center land use code is defined as an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Shopping center trip generation estimates are based on average vehicle rates per square footage of retail space. Calculations of the number of trips use ITE's average rate per 1,000 sf.

3.4.5 Mode Share

In addition to performing field counts to establish trip generation rates, the counts performed by HSH were also used to establish mode shares for the residential and office uses for Seaport Square. The field counts involved counting pedestrians, vehicles, shuttles, and taxi/rideshare services. As with the2010 Project, the standard BTD mode share data was not used for this study because the mode share zone (Zone 13) that Seaport Square is in is a large zone that covers the South Boston Waterfront area as well as the Boston Marine

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1 Trip Generation Manual, 9th Edition; Institute of Transportation Engineers; Washington, D.C.; 2012.

Industrial Park (BMIP) and the traditional South Boston residential neighborhood. Since these neighborhoods are not conveniently located next to downtown Boston, the overall Zone 13 mode share does not adequately represent the transit and walk/bike modes.

The observations determined that the mode share used in the 2010 Project were consistent with the existing conditions. However, the advent of rideshare services and an extensive private shuttle service in the area, split the previously expected vehicle mode share into three categories; rideshare/taxi, shuttle, and private auto. The mode shares are shown in Table 3-5.

Table 3-5 Travel Mode Share

Land Use		Walk/Bicycle Share	Transit Share	Shuttle Share	Rideshare/ Taxi Share	Auto Share
Daily						
Residential	In	39%	35%	0%	9%	17%
	Out	39%	35%	0%	9%	17%
Office	In	19%	55%	9%	7%	10%
	Out	19%	55%	9%	7%	10%
Hotel	In	39%	27%	0%	10%	24%
	Out	39%	27%	0%	10%	24%
Retail	In	39%	27%	0%	0%	34%
	Out	39%	27%	0%	0%	34%
a.m. Peak						
Residential	In	39%	35%	0%	9%	17%
	Out	39%	35%	0%	9%	17%
Office	In	19%	55%	9%	7%	10%
	Out	19%	55%	9%	7%	10%
Hotel	In	39%	27%	0%	10%	24%
	Out	39%	27%	0%	10%	24%
Retail	In	39%	27%	0%	0%	34%
	Out	39%	27%	0%	0%	34%
p.m. Peak						
Residential	In	39%	35%	0%	9%	17%
	Out	39%	35%	0%	9%	17%
Office	In	19%	55%	9%	7%	10%
	Out	19%	55%	9%	7%	10%
Hotel	In	39%	27%	0%	10%	24%
	Out	39%	27%	0%	10%	24%
Retail	In	39%	27%	0%	0%	34%
	Out	39%	27%	0%	0%	34%

3.4.6 Vehicle Occupancy Rates

The field observations also determined vehicle occupancy rates (VOR) for each of the vehicular mode share options for the residential and office land uses. Table 3-6 summarizes the VOR for each land use by vehicle option.

Table 3-6 Vehicle Occupancy Rates

Land Use		Shuttle Vehicle Occupancy Rate	Rideshare/Taxi Vehicle Occupancy Rate	Private Auto Vehicle Occupancy Rate
Residential	In	N/A	1.10	1.13
	Out	N/A	1.10	1.13
Office	In	14.00	1.10	1.84
	Out	14.00	1.10	1.84
Hotel	In	N/A	1.20	1.84
	Out	N/A	1.20	1.84
Retail	In	N/A	N/A	1.78
	Out	N/A	N/A	1.78

3.4.7 Existing Trip Generation

Currently, there are 1,355 surface lot spaces that are publicly used within the Project Area. These parking spaces, located in Blocks L3-6, M, and N & P, will be built over in the future conditions (Block M in the No Build Condition, and the rest in the Build Condition). The traffic volumes in and out of the surface parking lots were counted on November 1, 2016 along with the rest of the traffic counts. These volumes were removed from their respective future condition.

3.4.8 NPC Project Trip Generation

The mode share percentages and VOR shown in Table 3-5 and Table 3-6 were applied to the number of person trips to develop walk/bicycle, transit, and vehicle (including shuttle and automobile) trip generation estimates for the Project. The trip generation for the Project by mode is shown in Table 3-7. The detailed trip generation information is provided in Appendix A.

Table 3-7 Net New NPC Project Trip Generation

Land Use		Walk/Bicycle Trips	Transit Trips	Shuttle Trips	Vehicle Trips
Daily					
Residential[1]	In	1,901	1,705	31	733
	Out	1,901	1,705	31	733
Retail[2]	In	7,338	5,079	-	3,595
	Out	7,338	5,079	-	3,595
Office[3]	In	4,940	4,430	82	1,904
	Out	4,940	4,430	82	1,904
Hotel[4]	In	1,141	789	-	626
	Out	1,141	789	-	626
Existing Parking[5]	In	-	-	-	-
	Out	-	-	-	-
Total Net New Project Generated	In	15,320	12,003	113	6,858
	Out	15,320	12,003	113	6,858
a.m. Peak Hour					
Residential[1]	In	28	26	0	11
	Out	109	98	3	43
Retail[2]	In	232	165	-	112
	Out	122	89	-	64
Office[3]	In	1,827	1,639	30	705
	Out	65	56	0	23
Hotel[4]	In	88	88	-	48
	Out	61	61	-	33
Existing Parking[5]	In	-	-	-	-178
	Out	-	-	-	-11
Total Net New Project Generated	In	2,175	1,918	30	698
	Out	357	304	3	152
p.m. Peak Hour					
Residential[1]	In	85	77	1	34
	Out	52	47	0	19
Retail[2]	In	612	424	-	299
	Out	679	470	-	332
Office[3]	In	65	56	0	23
	Out	1,745	1,567	29	675

Table 3-7 Net New Project Trip Generation (Continued)

Land Use		Walk/Bicycle Trips	Transit Trips	Shuttle Trips	Vehicle Trips
p.m. Peak Hour					
Hotel[4]	In	86	59	-	46
	Out	82	57	-	45
Existing Parking[5]	In	-	-	-	-14
	Out	-	-	-	-188
Total Net New Project Generated	In	848	616	1	388
	Out	2,558	2,141	30	883

1. HSH Field Count Rate (Apartment), 1,297 units.
2. ITE Trip Generation Rate, 9th Edition, LUC 820 (Shopping Center), 660,200 square feet.
3. HSH Field Count Rate (Office Building), 2,031,540 square feet.
4. ITE Trip Generation Rate, 9th Edition, LUC 310 (Hotel), 389 rooms.
5. Traffic counts conducted on November 1, 2016 for the 1,355 parking spaces

As shown in Table 3-7, there is expected to be 15,320 new pedestrian/bicycle trips, 12,003 new transit trips, and 6,971 new vehicle trips throughout the day. During the a.m. peak hour, there is expected to be 2,532 pedestrian trips (2,175 in and 357 out), 2,222 transit trips (1,918 in and 304 out), and 883 vehicle trips (728 in and 155 out). During the p.m. peak hour, there is expected to be 3,406 pedestrian trips (848 in and 2,558 out), 2,757 transit trips (616 in and 2,141 out), and 1,302 vehicle trips (389 in and 913 out).

3.4.9 Trip Distribution

The trip distribution identifies the various travel paths for vehicles associated with the Project. Trip distribution patterns for the Project were based on BTD's origin-destination data for Area 15 and trip distribution patterns presented in the 2010 Project. The trip distribution patterns for the Project are illustrated in Figure 3-15 and Figure 3-16.

3.4.10 Build Traffic Volumes

The vehicle trips were distributed through the study area. The Project-generated trips for the a.m. and p.m. peak hours are shown in Figure 3-17 and Figure 3-18, respectively. The trip assignments were added to the No-Build (2023) Condition vehicular traffic volumes to develop the Build (2023) Condition vehicular traffic volumes. The Build (2023) Condition a.m. and p.m. peak hour traffic volumes are shown on Figure 3-19 and Figure 3-20, respectively.

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Figure 3-15
Trip Distribution Entering

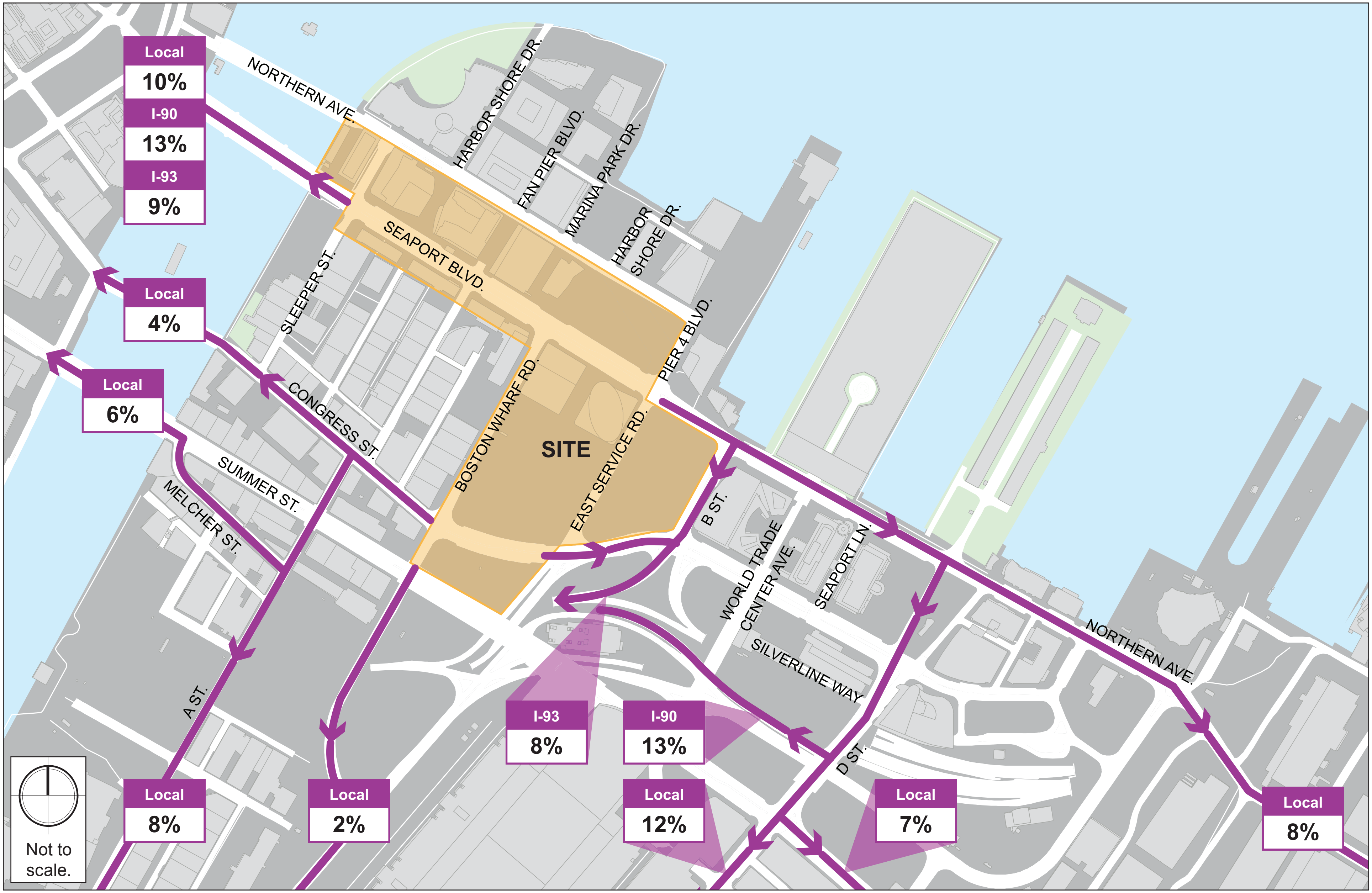

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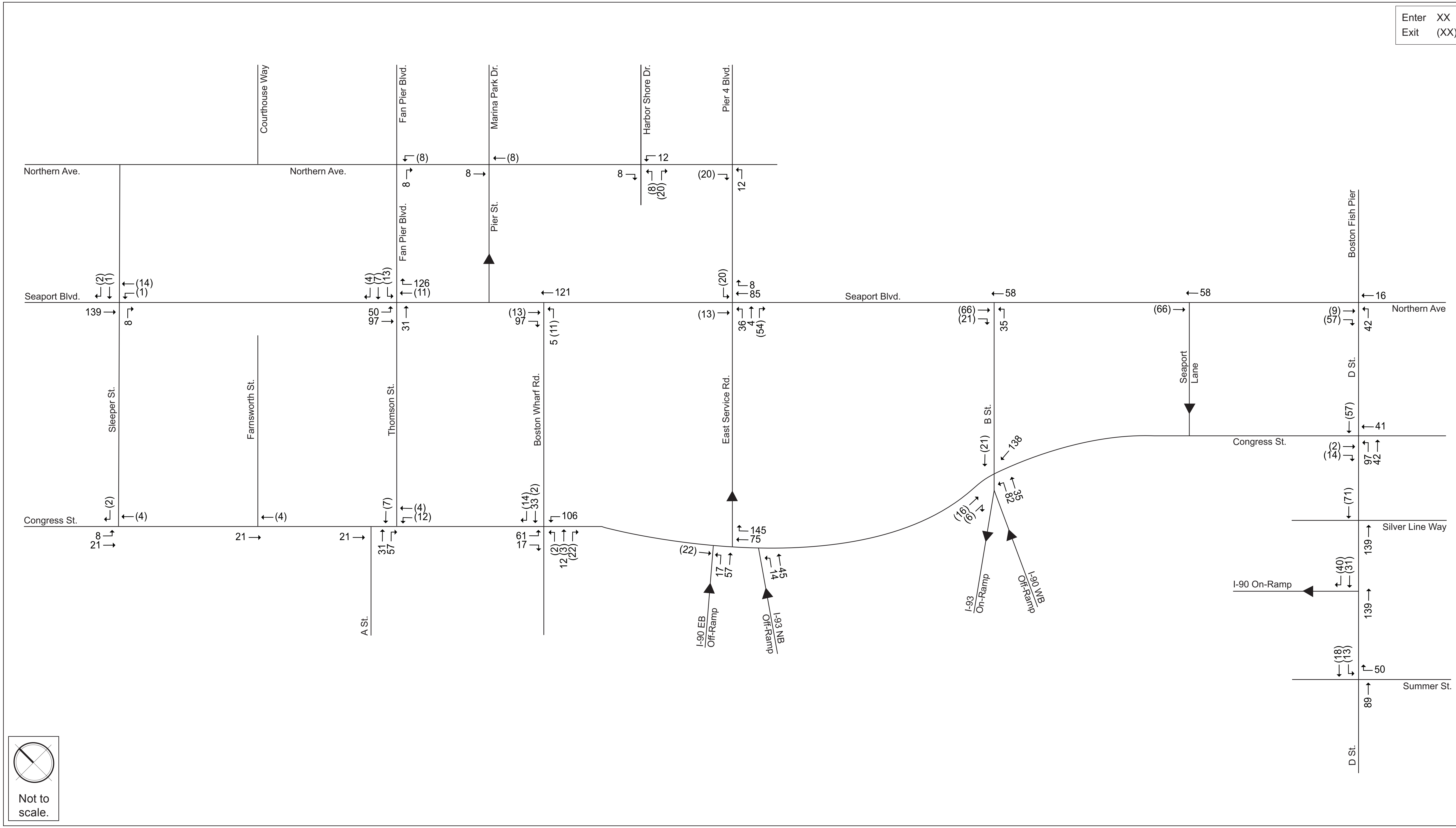
Figure 3-16

Trip Distribution Exiting



Seaport Square **Boston, Massachusetts**

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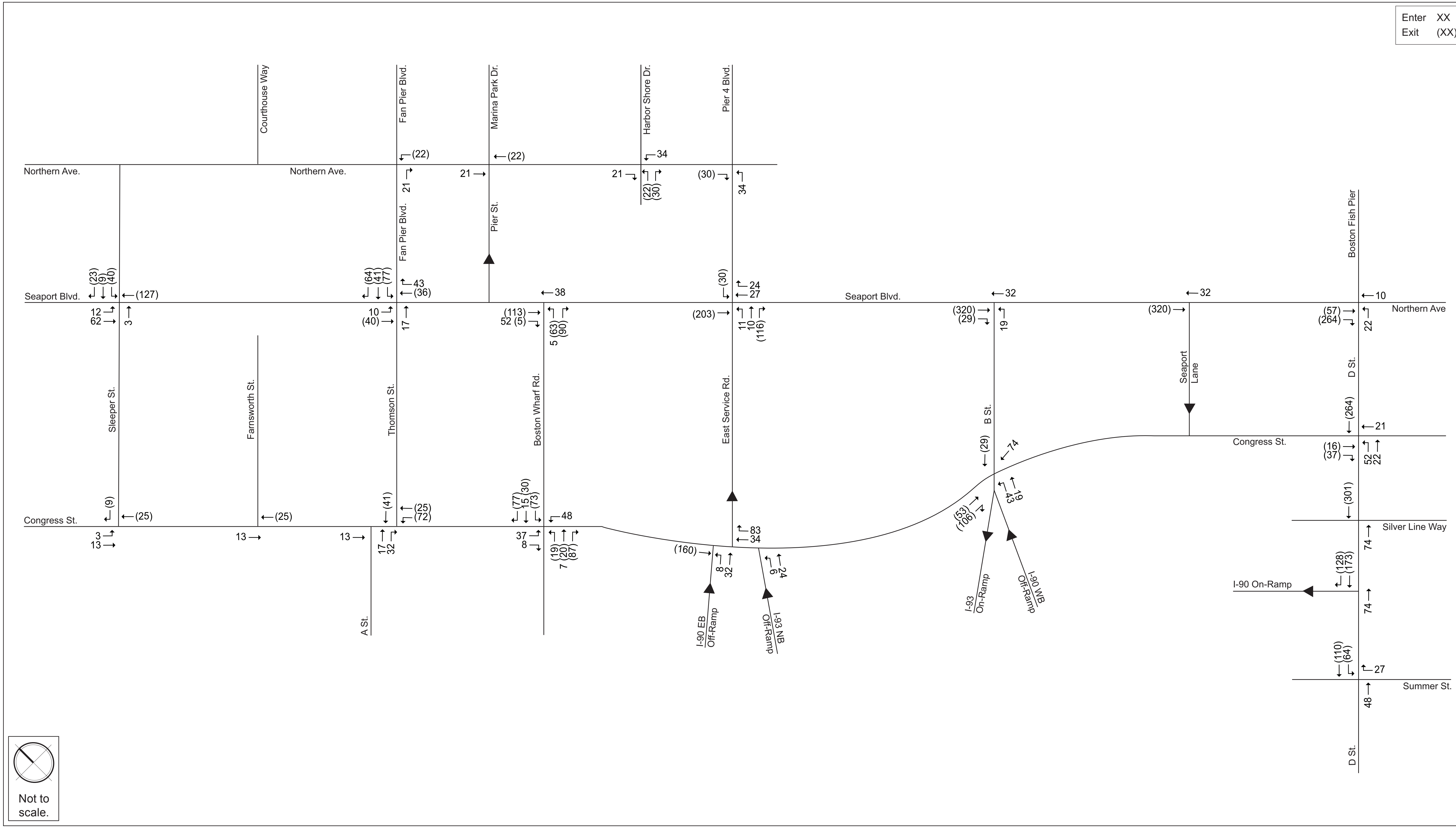
Figure 3-17

Project Generated Trips, a.m. Peak Hour



Seaport Square **Boston, Massachusetts**

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Figure 3-18

Project Generated Trips, p.m. Peak Hour

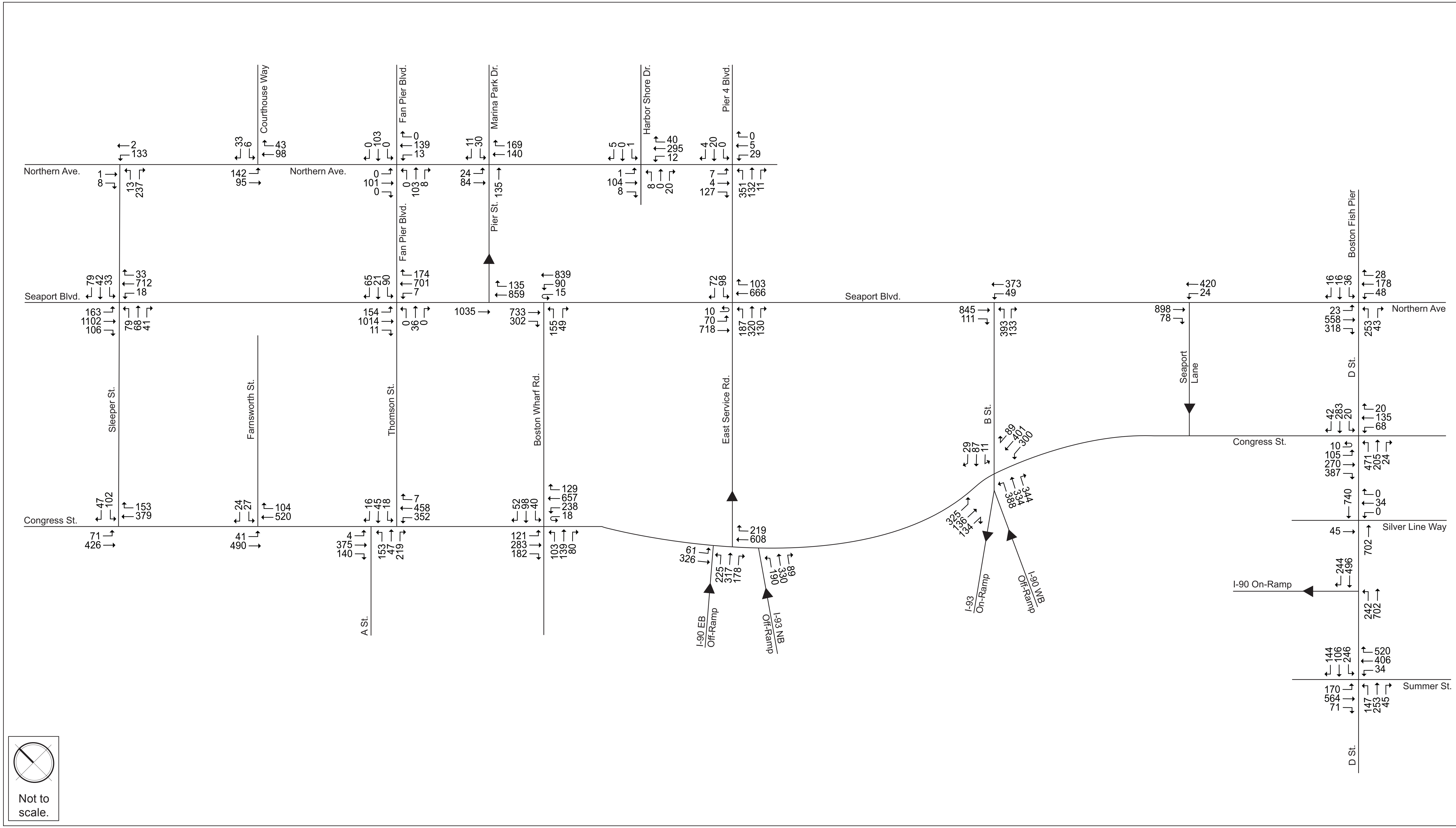
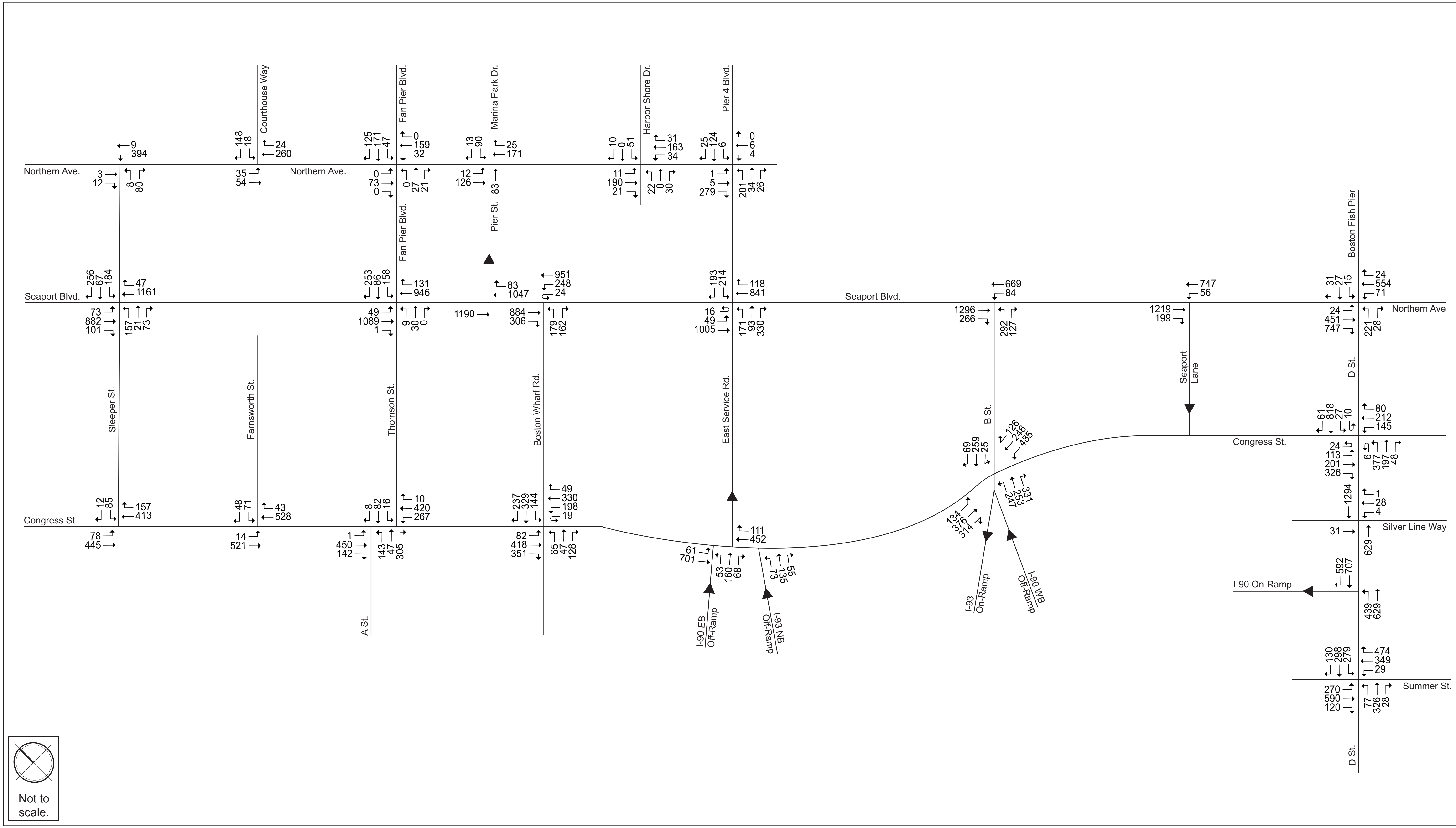


Figure 3-19

Build (2023) Condition Traffic Volumes, Weekday a.m. Peak Hour



Seaport Square **Boston, Massachusetts**

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Figure 3-20

Build (2023) Condition Traffic Volumes, Weekday p.m. Peak Hour

3.5 Transportation Demand Management

The Proponent is committed to implementing Transportation Demand Management (TDM) measures to minimize automobile usage and Project related traffic impacts. TDM will be facilitated by the nature of the Project (which does not generate significant peak hour trips) and its proximity to numerous public transit alternatives.

On-site management will keep a supply of transit information (schedules, maps, and fare information) to be made available to the residents and patrons of the Project Site. The Proponent will work with the City to develop a TDM program appropriate to the Project and consistent with its level of impact.

The Proponent is prepared to take advantage of good transit access in marketing the Project Site to future residents by working with them to implement the following TDM measures to encourage the use of non-vehicular modes of travel.

The TDM measures for the Project may include, but are not limited, to the following:

3.5.1 Alternative Mode Benefits/Tactics

The primary alternative transportation modes to be encouraged will be public transportation, bicycling, and walking.

- The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries;
- On-site management will work with tenants/residents as they move in to help facilitate transportation for new arrivals;
- The Proponent will provide orientation packets to new tenants/residents containing information on available transportation choices, including public transportation routes/schedules, nearby vehicle sharing and bicycle sharing locations, and walking opportunities;
- Provide an annual (or more frequent) newsletter or bulletin summarizing transit, ride-sharing, bicycling, alternative work schedules, and other travel options;
- Provide information on travel alternatives for employees/residents and visitors via the Internet and in the building lobby;
- Join and participate in a local Transportation Management Association on behalf of commercial tenants and residents; and
- The building management will join and participate in A Better City Transportation Management Association on behalf of commercial tenants and residents.

3.5.2 Bicycle/Pedestrian Trips

Promotions and incentives to encourage bicycle and pedestrian trips include:

- Providing bike and pedestrian access information on the Project website;
- Providing covered, secure bicycle storage for building occupants;
- Providing on-site external bike racks for visitors;
- Installing a Hubway bike sharing station on site;
- Encouraging tenants to provide a "Guaranteed Ride Home" for those commuting on foot or by bike; and
- Encouraging the hotel operator to provide loaner umbrellas for hotel guests.

The hotel operator will also be encouraged to supply hotel guests with Walk Boston's walking map of downtown.

3.5.3 Public Transportation

The goal of the following promotion and incentive measures are to increase public transit use to and from the site:

- Posting information about public transportation;
- Providing transit access information on the Project website including information on bus and subway routes and schedules;
- Providing one free annual MBTA subway pass per residential unit during the first year of operation;
- Encouraging employers to subsidize on-site full-time employees' purchase of monthly transit passes;
- Promoting to commercial tenants that, as employers, they can save on payroll-related taxes and provide employee benefits when they offer transportation benefits such as subsidized public transportation;
- Encouraging employers to arrange to provide Guaranteed Ride Home during hours in which public transit service is no longer available to employee's home; and
- Assisting the hotel in arranging for on-site sale of short-term MBTA visitor passes to hotel guests.

3.5.4 Electric Vehicle

The goal of the following promotion and incentive measures is to accommodate tenants/residents/guests traveling to the site in an electric vehicle:

- Provide electric vehicle charging stations to accommodate 5 percent of the total parking and sufficient infrastructure capacity for future accommodation of at least 15 percent of the total parking spaces; and

- Designate up to 5 percent of the parking spaces as preferred parking for low emission vehicles.

3.5.5 Ride Sharing

The goal of the following promotion and incentive measures are to increase ridesharing:

- Encouraging tenants to participate in area airport shuttle services;

- Providing access to information on area carpool and vanpool participants;

- Encouraging tenants to provide on-line registration for the RideSource ride-matching program;

- Encouraging tenants to organize an internal ride-matching program for employees who would be more willing to participate in a ride-matching service with fellow employees than with a large regional database; and

- Exploring the feasibility of providing spaces in the garage for a car sharing service (e.g., Zipcar or Enterprise CarShare).

3.6 Transportation Mitigation Measures

The Proponent has developed a physical design and management program for Seaport Square that emphasizes transit, walking, and bicycle connections in order to reduce auto dependency and create a vibrant urban neighborhood. The Proponent is committed to continuing to work with the City to foster sustainable development that balances the needs of the various transportation modes and to implement infrastructure and management improvements that will mitigate the impact of development on the surrounding transportation system.

The Proponent is working with the BPDA and BTD to assist in the creation of a neighborhood that can easily implement future transportation improvements through increased mobility options. This potentially includes a more robust water transportation network which replaces the current water taxi service with regularly scheduled ferry service, Silver Line and bus signal prioritization, improved curb side use for the expected continued increase in pick-up/drop-off activity over long term parking, improved bicycle infrastructure in the area, and an improved pedestrian experience creating a public realm that emphasizes people in the area over motorists/vehicles traveling through the area.

Some of the future potential mobility options are shown in Figure 3-21. The following are specific transportation measures that the proponent has agreed to implement as part of the NPC Project.

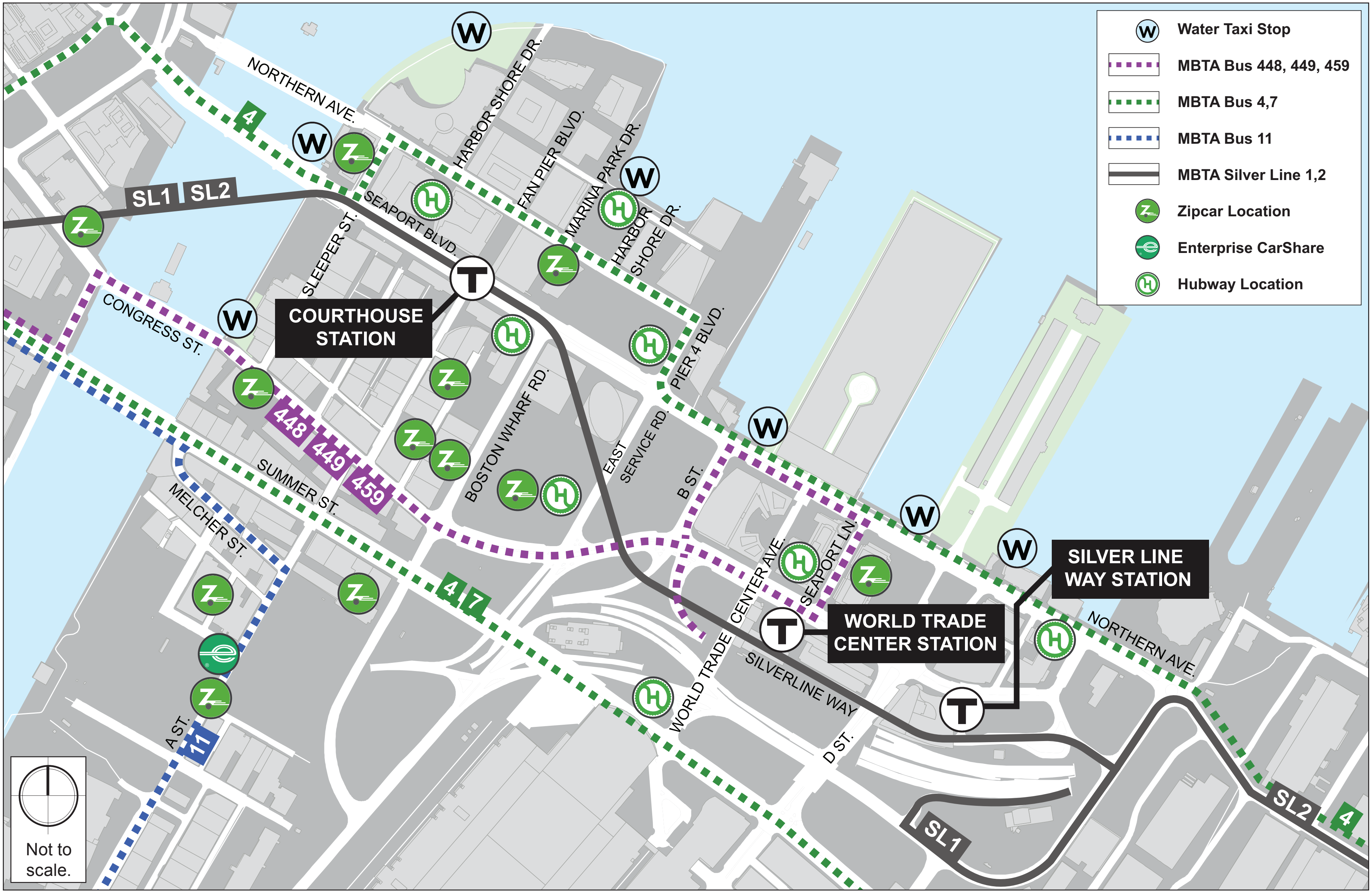
3.6.1 Pedestrian Mitigation

As the various Blocks within the site area are developed, Seaport Square will enhance the pedestrian environment adjacent to its buildings along the major east–west corridors of Northern Avenue, Seaport Boulevard, and Congress Street, as well as along the north–south streets of Sleeper Street, Fan Pier Boulevard, Pier Street, Pier 4 Boulevard, Boston Wharf Road, East Service Road, and B Street, as described above. Restaurants and outdoor seating will enliven the area during day and evening hours.

Harbor Way, was previously a north south connection from the elevated Summer Street to Autumn Lane between Boston Wharf Road and East Service Road envisioned as a vehicular and pedestrian connection. However, this roadway had a very low projected traffic volume and would have required a bridge structure over Congress Street. Harbor Way is now envisioned as an active, destination worthy pedestrian and bicycle only connection between Summer Street to Seaport Common and the water's edge at Fan Pier Marina. Mid-block pedestrian crossings will be provided at Congress Street and Autumn Lane (as well as the previously proposed Seaport Boulevard mid-block connection). The Summer Street Steps eliminate the need for the previous overpass which would not be in keeping with the urban design standards in the area. The public accessible route for the Summer Street Steps will be provided through the new building to be constructed at Block P. This is discussed in further detail in Section 1.3.1.2.

3.6.2 Bicycle Mitigation

The Proponent is committed to improving bicycle accessibility and use in the Project Area. BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure bicycle parking for residents and short-term bicycle racks for visitors. Based on BTD guidelines, the Project will meet these guidelines by supplying approximately 2,235 secure bicycle parking/storage spaces within the Project Site for the residents and employees, as well public bicycle racks throughout the Project Site for visitors. Hubway stations will continue to be implemented throughout the site in coordination with BTD, BPDA, and BostonBikes. In addition, the Proponent has agreed to design and construct buffered bike lanes along Boston Wharf Road.



Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 3-21

Future Mobility

3.6.3 Public Transportation Mitigation

The Project is envisioned as a transit-oriented development that will provide significant improvements to the public realm. The 2010 Project included a new Silver Line entrance to the existing Courthouse Station. This new headhouse will be located along Seaport Boulevard in front of District Hall on Block F. The headhouse previously included stairs and an elevator to the concourse level of Courthouse Station. As part of this NPC Project, the Proponent is committing to construct escalators as well.

3.6.4 Vehicle Mitigation

As part of the 2010 Project, the Proponent is in the design process for improvements to traffic operations (vehicular and pedestrian) along the Seaport Boulevard corridor between Sleeper Street and B Street. These improvements include turning lane modifications, pavement marking improvements, signal installation (including two signalized mid-block pedestrian crossings), and signal timing improvements. The NPC Project involves a similar scope of pavement marking and signal retiming along the Congress Street corridor from the A Street/Thomson Place intersection to the B Street/On and Off Ramp intersection. The intent of the signal timing modifications to each corridor is to provide more efficient vehicle travel east-west through the corridors, while also providing pedestrian improvements via concurrent pedestrian phasing that will allow for longer walk times.

3.7 Traffic Volume Comparison

Development within the South Boston waterfront is continuing to evolve. Over the past thirty years, the South Boston Waterfront has evolved from being a neighborhood primarily consisting of industrial/manufacturing, surface parking lots, underutilized buildings, and abandoned warehouses, to a growing area with new office, retail, hotel, and residential uses that are more appropriate for an urban neighborhood located adjacent to downtown. The catalyst for redevelopment was the Central Artery/Tunnel (CA/T) Project, which created new I-93 and I-90 access points and surface roads providing the area with direct connections to the regional highway system.

While many South Boston Waterfront automobile travellers have the benefit of being close to these ramps, the disadvantage is that traffic related to non area uses also travel on the streets to and from the regional connections. With the typical peak period congestion that exists on the regional highways, the area can experience congestion on the local streets adjacent to the ramps. This congestion is not caused by the traffic associated by the local area uses (either historical or newly constructed developments), but rather by the over capacity regional highways causing the ramps to not operate efficiently. This is true for all neighborhoods in Boston that abut the regional highway system.

The Build (2023) Condition traffic volumes were compared to the Build traffic volumes contained in the 2010 DPIR. Overall, the traffic volumes are very similar to the previous projections. Due to proposed modifications and mitigation, some intersections will experience slightly higher volumes, while others will experience a reduction compared to previous projections. Figure 3-22 and Figure 3-23 show the incremental impact of the NPC Project as well the comparison to the 2010 DPIR traffic volume projections.

3.8 Transit Capacity Analysis

To determine the impacts of the Project on transit capacity, several steps were followed. The peak load point for each line and direction was identified and ridership established for each from the most recent available MBTA Automated Passenger Count (APC) data. It was determined that the Silver Line and #4 bus capacity constraint is outbound (from Downtown Boston) during the weekday a.m. peak hour and inbound during the weekday p.m. peak hour. The #7 bus capacity constraint runs in the opposite direction, inbound during the weekday a.m. peak hour and outbound during the weekday p.m. peak hour. The net new inbound transit riders generated by the NPC Project during the a.m. peak hour and the net new outbound transit riders during the p.m. peak hour were assigned to the various transit lines based on the distribution presented in Table 3-8.

Table 3-8 Transit Trip Distribution

Service	Percent Distribution
Silver Line	88%
MBTA #4	2%
MBTA #7	2%
South Station[1]	8%

[1] The South Station percentage accounts for transit trips walking to Seaport Square and not impacting the buses.

According to MBTA procedures, capacity was established in two ways. First, MBTA Planning Capacity assumes 140% of the seated capacity to determine the capacity of a bus when considering seated and standing passengers on each bus. Second, Crush Capacity allows for more standees, with an overall average of two square feet per passenger. The Planning Capacity and Crush Capacity of each bus route analyzed are summarized in Table 3-9.

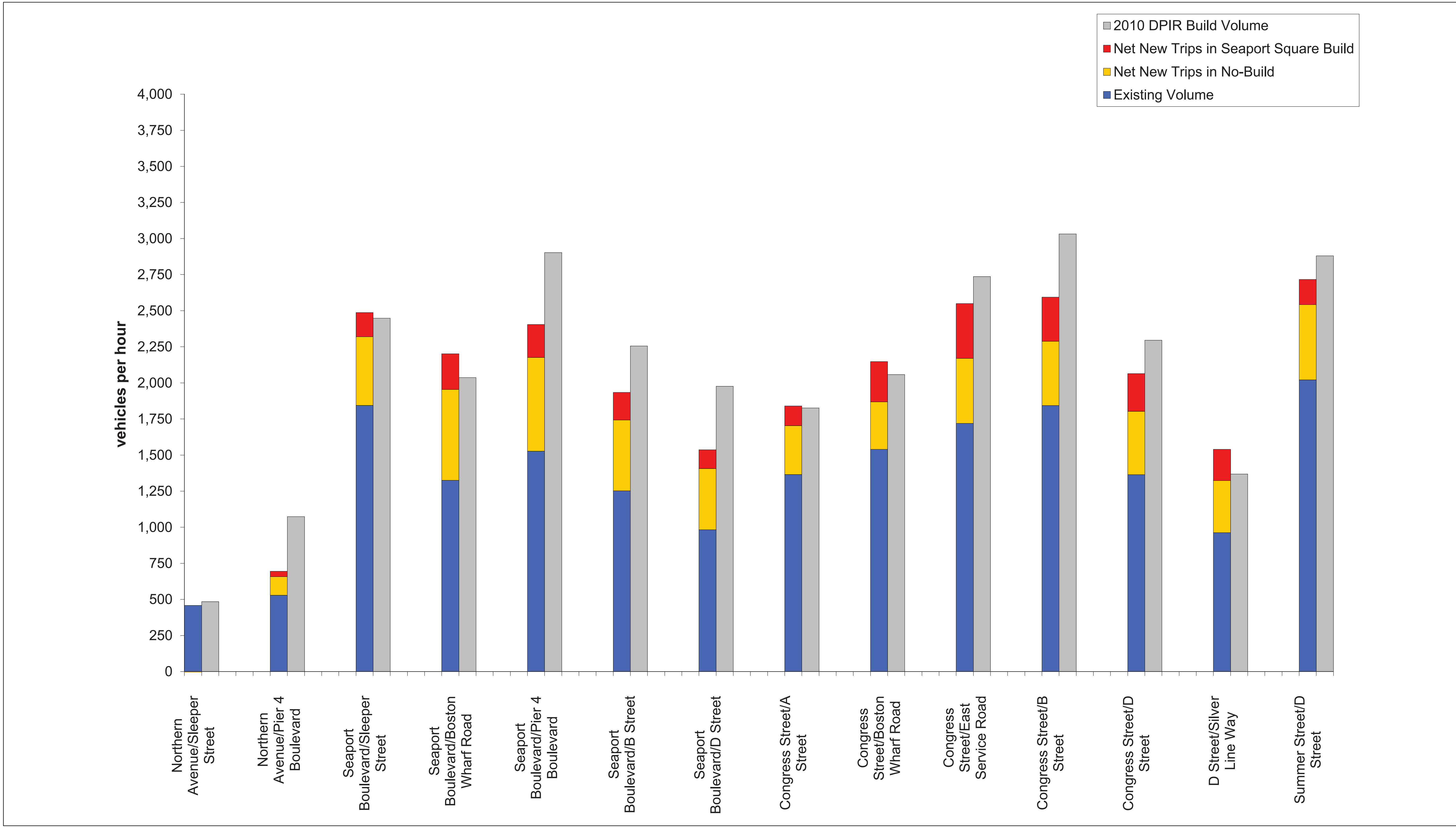


Figure 3-22

Traffic Volume Comparison, a.m. Peak Hour

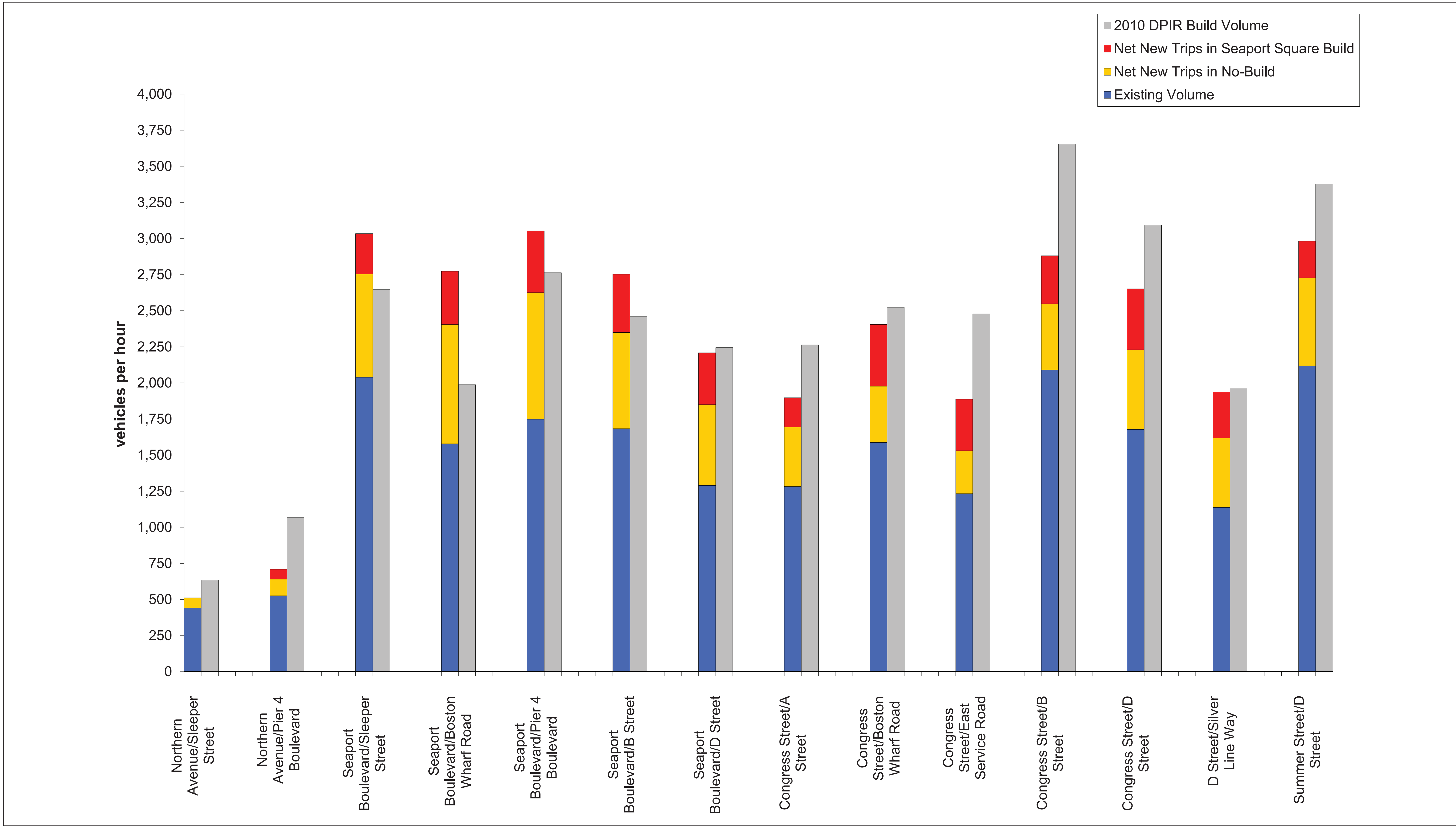


Figure 3-23

Traffic Volume Comparison, p.m. Peak Hour

Table 3-9 MBTA Transit Operations – Peak Hour Capacities

Transit Line	Direction	Origin	Peak Time Period	Peak Load Point	Capacity[1]	
					Planning	*Crush*
Silver Line	Outbound	South Station	8-9 AM	Approaching Courthouse	1,820	2,688
Silver Line	Inbound	Silver Line Way	5-6 PM	Approaching South Station	1,755	2,592
MBTA #4	Outbound	North Station	8-9 AM	Approaching Sleeper St	162	225
MBTA #4	Inbound	Northern Ave at Tide St	5-6 PM	Approaching Purchase St	162	225
MBTA #7	Outbound	City Point Terminal	8-9 AM	Approaching Melcher St	756	1,050
MBTA #7	Inbound	Otis St at Summer St	5-6 PM	Approaching WTC Ave	540	750

1) Determined based on MBTA schedules and Planning Capacity and Crush Capacity per bus.

The expected transit trips were added to the existing peak load point data to establish future peak ridership. The resulting No-Build Condition and Build Condition peak load point characteristics for Planning Capacity and Crush Capacity during the weekday a.m. peak hour and the weekday p.m. peak hour are shown in Table 3-10 and Table 3-11, respectively.

Table 3-10 MBTA Transit Operations – Impact during a.m. Peak Period

Transit Line	Existing Condition			No-Build Condition			Build Condition		
	Peak Load	% Planning Capacity	% Crush Capacity	Peak Load	% Planning Capacity	% Crush Capacity	Peak Load	% Planning Capacity	% Crush Capacit
Silver Line Outbound	1,390	76%	52%	1,652	91%	61%	4,161	229%	155%
MBTA #4 Outbound	63	39%	28%	77	48%	34%	133	82%	59%
MBTA #7 Inbound	672	89%	64%	819	108%	78%	875	116%	83%

Table 3-11 MBTA Transit Operations – Impact during p.m. Peak Period

Transit Line	Existing Condition			No-Build Condition			Build Condition		
	Peak Load	% Planning Capacity	% Crush Capacity	Peak Load	% Planning Capacity	% Crush Capacity	Peak Load	% Planning Capacity	% Crush Capacit
Silver Line Inbound	1,071	61%	41%	1,273	73%	49%	3,945	225%	152%
MBTA #4 Inbound	42	26%	19%	51	31%	23%	111	69%	49%
MBTA #7 Outbound	410	76%	55%	500	93%	67%	560	104%	75%

As shown, the Silver Line and #7 currently operate near Planning Capacity under the Existing Condition. Seven years out in the No-Build Condition, the MBTA #7 bus is expected to be over Planning Capacity during the a.m. peak hour and at Planning Capacity during the p.m. peak hour. Under the No-Build Condition, the Silver Line is at 91% and 73% policy capacity during the a.m. and p.m. peak hours respectively.

The 2010 DPIR outlined projected Silver Line peak hour capacity under the assumption that the Silver Line bus service frequency would be greatly increased. The increased capacity would have resulted from the planned Silver Line Phase III project that would have connected the different Silver Line routes. The increased connectivity would have decreased headways as the entire Silver Line fleet would have been traveling through the area. With the suspension of Phase III, the planned increase in bus service that was projected in the 2010 DPIR can no longer be considered in the capacity calculations.

Due to this decreased expected capacity, the Silver Line is projected to operate well over the capacity during the a.m. and p.m. peak hours respectively. Using the 2010 DPIR expected capacity of 3,977 passengers; the projected Silver Line Build Condition trips would not place the line over capacity. The 2010 DPIR outlines that the long-term plan of the MBTA was to have a deployment of 89 peak hour/peak direction Silver Line buses. In order to meet the demand of the Build Condition, the Silver Line would have to run approximately 64 peak hour/peak direction buses.

3.9 Traffic Capacity Analysis

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay experienced by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 9) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 Highway Capacity Manual (HCM).

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. Table 3-12 displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. LOS D or better is typically considered desirable during the peak hours of traffic in urban and suburban settings.

Table 3-12 Vehicle Level of Service Criteria

	Average Stopped Delay (sec/veh)	
Level of Service	Signalized Intersections	Unsignalized Intersections
A	≤10	≤10
B	> 10 and ≤20	> 10 and ≤15
C	> 20 and ≤35	> 15 and ≤25
D	> 35 and ≤55	> 25 and ≤35
E	> 55 and ≤80	> 35 and ≤50
F	> 80	> 50

Source: 2000 Highway Capacity Manual, Transportation Research Board.

In addition to delay and LOS, the operational capacity and vehicular queues are calculated and used to further quantify traffic operations at intersections. The following describes these other calculated measures.

The volume-to-capacity ratio (v/c ratio) is a measure of congestion at an intersection approach. A v/c ratio below one indicates that the intersection approach has adequate capacity to process the arriving traffic volumes over the course of an hour. A v/c ratio of one or greater indicates that the traffic volume on the intersection approach exceeds capacity.

The 95th percentile queue, measured in feet, denotes the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line. This maximum queue occurs five percent, or less, of the time during the peak hour, and typically does not develop during off-peak hours. Since volumes fluctuate throughout the hour, the 95th percentile queue represents what can be considered a "worst case" condition. Queues at an intersection are generally below the 95th percentile length throughout most of the peak hour. It is also unlikely that 95th percentile queues for each approach to an intersection occur simultaneously.

3.9.1 Existing (2016) Condition Traffic Capacity Analysis

Table 3-13 and Table 3-14 summarize the Existing (2016) Condition capacity analysis for the study area intersection during the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in Appendix A.

Table 3-13 Existing (2016) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**A**	**6.8**	-	-	-
Northern Ave EB left/thru	D	48.5	0.07	6	18
Northern Ave EB right	A	0.5	0.13	0	3
Driveway WB left/thru/right	E	58.8	0.42	33	54
Pier 4 Blvd NB left	A	2.3	0.27	3	m5
Pier 4 Blvd NB thru/right	A	0.2	0.01	0	m0
Pier 4 Blvd SB left/thru/right	A	0.0	0.01	0	0
Seaport Boulevard/Sleeper Street	**D**	**53.4**	-	-	-
Seaport Blvd EB left/thru | thru/right	F	89.7	>1.00	~425	m#461
Seaport Blvd WB left	A	7.1	0.05	8	m15
Seaport Blvd WB thru | thru/right	A	10.0	0.30	128	113
Sleeper St NB left/thru/right	D	41.3	0.67	52	m#158
Sleeper St SB left/thru	D	36.7	0.28	45	91
Sleeper St SB right	A	9.8	0.32	14	57
Seaport Boulevard/Boston Wharf Road	**A**	**9.3**	-	-	-
Seaport Blvd EB thru | thru/right	A	4.9	0.44	2	m77
Seaport Blvd WB left	A	6.4	0.20	9	42
Seaport Blvd WB thru | thru	A	5.2	0.23	40	102
Boston Wharf Rd NB left | left/right	D	42.6	0.51	32	74
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**28.9**	-	-	-
Seaport Blvd EB left	B	12.8	0.13	14	m14
Seaport Blvd EB thru | thru	B	11.7	0.34	84	46
Seaport Blvd WB thru | thru/right	C	22.6	0.47	109	158
East Service Rd NB left	D	43.2	0.39	102	145
East Service Rd NB thru	E	60.6	0.81	215	268
East Service Rd NB right	A	6.4	0.12	3	m10
Pier 4 Blvd SB left	E	73.2	0.62	68	113
Pier 4 Blvd SB right	B	15.5	0.36	0	26

Table 3-13 Existing (2016) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Seaport Boulevard/B Street	**C**	**24.4**	-	-	-
Seaport Blvd EB thru | thru/right	C	22.9	0.56	171	112
Seaport Blvd WB left/thru | thru	C	26.2	0.46	88	98
B St NB left | left	C	24.6	0.43	88	121
B St NB right	C	26.0	0.40	76	126
D Street/Northern Avenue/Boston Fish Pier	**B**	**18.8**	-	-	-
Seaport Blvd EB left/thru | thru/right	B	10.2	0.38	86	154
Northern Ave WB left/thru | thru/right	A	8.8	0.16	22	47
D St NB left	E	56.6	0.69	91	148
D St NB right	A	0.3	0.05	0	0
Boston Fish Pier SB left/thru/right	D	47.3	0.50	37	79
Congress Street/A Street/Thomson Place	**D**	**38.5**	-	-	-
Congress St EB left/thru | thru	D	37.3	0.54	100	138
Congress St EB right	D	36.8	0.36	67	109
Congress St WB left	C	34.1	0.49	155	249
Congress St WB thru/right	D	36.8	0.56	302	441
A St NB left/thru	E	69.7	0.75	109	#211
A St NB right	A	1.6	0.25	0	0
Thomson Pl SB left/thru/right	D	40.8	0.34	18	53
Congress Street/Boston Wharf Road	**C**	**20.7**	-	-	-
Congress St EB left/thru	B	12.6	0.39	27	288
Congress St EB right	A	3.7	0.25	0	142
Congress St WB left	B	15.1	0.39	41	91
Congress St WB thru | thru/right	B	12.3	0.49	95	157
Boston Wharf Rd NB left	D	42.7	0.33	60	102
Boston Wharf Rd NB thru/right	D	54.5	0.72	107	170
Boston Wharf Rd SB left/thru	E	62.0	0.58	71	104
Boston Wharf Rd SB right	A	3.5	0.15	0	6
Congress Street/East Service Road/Highway	**C**	**31.0**	-	-	-
Congress St EB left	B	12.2	0.08	5	m14
Congress St EB thru | thru	B	11.3	0.23	37	54
Congress St WB thru | thru/right	B	19.5	0.41	113	144
I-93 NB Off-Ramp NB left/thru | thru	D	48.0	0.70	144	188
I-93 NB Off-Ramp NB right	A	2.5	0.17	0	9
I-90 EB Off-Ramp NEB left/thru | thru/right	D	44.0	0.77	192	234

Table 3-13 Existing (2016) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/B Street/Highway Ramps	**C**	**32.0**	-	-	-
Congress St EB left/thru | thru	D	46.6	0.87dl	121	165
Congress St EB right	D	46.6	0.37	69	122
Congress St WB left	C	22.4	0.36	41	80
Congress St WB left/thru | thru/right	C	23.7	0.61	62	199
I-90 WB Off-Ramp NB left	D	49.3	0.65	158	244
I-90 WB Off-Ramp NB thru	C	28.9	0.39	127	190
I-90 WB Off-Ramp NB right	A	5.1	0.43	0	54
B St SB thru | thru	E	71.4	0.28	27	44
B St SB right	A	5.2	0.08	4	m16
Congress Street/D Street	**C**	**34.7**	-	-	-
Congress St EB left/thru | thru/right	C	31.5	0.41	100	149
Congress St EB right	D	38.9	0.59	141	254
Congress St WB left/thru | thru/right	D	50.5	0.56	60	96
D St NB left | left	C	27.5	0.57	119	158
D St NB thru/right	C	22.3	0.40	75	127
D St SB left/thru | thru/right	D	41.3	0.45	61	99
D Street/Silver Line Way	**A**	**9.1**	-	-	-
SL Way EB left/thru/right	E	60.5	0.46	30	64
SL Way WB left/thru/right	E	55.7	0.38	24	55
D St NB thru | thru | thru/right	A	6.2	0.14	31	83
D St SB thru | thru	A	3.7	0.18	43	92
D Street/Massport Haul Road (I-90 On-Ramps)	**B**	**12.1**	-	-	-
D St NB left	D	41.8	0.47	112	200
D St NB thru | thru	A	1.0	0.16	0	38
D St SB thru | thru/right	A	9.4	0.29	41	91
D Street/Summer Street	**C**	**22.0**	-	-	-
Summer St EB left	C	25.7	0.46	28	83
Summer St EB thru | thru/right	B	19.3	0.42	64	139
Summer St WB left	D	53.2	0.50	11	m21
Summer St WB thru	D	35.3	0.72	136	206
Summer St WB right	A	9.7	0.55	75	25
D St NB left	D	44.0	0.42	80	140
D St NB thru | thru/right	C	32.6	0.25	35	64
D St SB left	B	16.7	0.44	49	47
D St SB left/thru | thru/right	A	7.2	0.38	0	14

Table 3-13 Existing (2016) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Sleeper Street/Northern Avenue	-	-	-	-	-
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.2	0.14	-	12
Sleeper St NB left/right	C	17.2	0.52	-	74
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	9.9	0.31	-	33
Northern Ave WB thru/right	A	0.0	0.11	-	0
Courthouse Way SB left/right	C	22.4	0.18	-	16
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru	A	1.4	0.02	-	1
Northern Ave WB thru/right	A	0.0	0.12	-	0
Fan Pier Blvd SB left/right	C	15.0	0.14	-	12
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	2.2	0.03	-	2
Northern Ave WB thru/right	A	0.0	0.20	-	0
Marina Park SB left/right	C	16.0	0.13	-	11
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru	A	0.1	0.00	-	0
Northern Ave WB thru/right	A	0.0	0.22	-	0
Harbor Shore Dr SB left/right	B	13.4	0.03	-	2
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.25	-	0
Seaport Blvd WB left/thru | thru	A	2.3	0.10	-	2
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	B	11.6	0.24	-	23
Congress St WB left/thru/right	A	0.3	0.01	-	1
Driveway NB left/thru/right	D	28.2	0.03	-	2
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	-
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	4.2	0.12	-	10
Congress St WB thru/right	A	0.0	0.36	-	0
Farnsworth St SB left/right	F	>50.0	0.71	-	82

Grey Shading indicates LOS E or F.

~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

\# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

m Volumes for 95th percentile queue is metered by upstream signal.

Table 3-14 Existing (2016) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**A**	**2.9**	-	-	-
Northern Ave EB left/thru	D	50.2	0.04	4	16
Northern Ave EB right	A	0.5	0.21	0	12
Driveway WB left/thru/right	D	51.4	0.17	14	21
Pier 4 Blvd NB left	A	1.2	0.15	6	12
Pier 4 Blvd NB thru/right	A	0.0	0.02	0	m0
Pier 4 Blvd SB left/thru/right	A	0.0	0.00	0	0
Seaport Boulevard/Sleeper Street	**D**	**54.0**	-	-	-
Seaport Blvd EB left/thru | thru/right	F	>80.0	>1.00	~242	m#228
Seaport Blvd WB left	B	14.5	0.13	10	41
Seaport Blvd WB thru | thru/right	B	14.7	0.40	91	196
Sleeper St NB left/thru/right	E	57.2	0.82	157	m#244
Sleeper St SB left/thru	C	24.2	0.14	33	62
Sleeper St SB right	B	17.2	0.58	76	142
Seaport Boulevard/Boston Wharf Road	**B**	**13.2**	-	-	-
Seaport Blvd EB thru | thru/right	B	13.3	0.70	52	m140
Seaport Blvd WB left	B	14.0	0.39	7	86
Seaport Blvd WB thru | thru	A	5.1	0.29	12	66
Boston Wharf Rd NB left | left/right	D	40.4	0.41	36	74
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**32.6**	-	-	-
Seaport Blvd EB left	C	23.2	0.13	30	m49
Seaport Blvd EB thru | thru	C	22.4	0.31	157	207
Seaport Blvd WB thru | thru/right	C	34.1	0.50	177	218
East Service Rd NB left	D	53.2	0.35	31	66
East Service Rd NB thru	E	56.0	0.33	29	55
East Service Rd NB right	B	18.6	0.43	4	29
Pier 4 Blvd SB left	E	68.7	0.74	121	191
Pier 4 Blvd SB right	C	21.4	0.52	24	97
Seaport Boulevard/B Street	**D**	**39.5**	-	-	-
Seaport Blvd EB thru | thru/right	D	41.5	0.67	280	360
Seaport Blvd WB left/thru | thru	C	28.3	0.63	153	215
B St NB left | left	E	55.3	0.64	85	127
B St NB right	D	45.8	0.35	79	134

Table 3-14 Existing (2016) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
D Street/Northern Avenue/Boston Fish Pier	**B**	**13.5**	-	-	-
Seaport Blvd EB left/thru | thru/right	A	5.3	0.32	44	92
Northern Ave WB left/thru | thru/right	A	8.2	0.24	58	106
D St NB left	E	55.2	0.66	92	148
D St NB right	A	0.5	0.07	0	0
Boston Fish Pier SB left/thru/right	D	38.7	0.46	28	70
Congress Street/A Street/Thomson Place	**C**	**30.7**	-	-	-
Congress St EB left/thru | thru	C	34.9	0.54	100	150
Congress St EB right	D	36.8	0.45	63	117
Congress St WB left	B	17.0	0.33	39	62
Congress St WB thru/right	B	17.4	0.42	104	139
A St NB left/thru	E	73.9	0.76	98	#197
A St NB right	B	10.3	0.49	0	46
Thomson Pl SB left/thru/right	D	45.9	0.30	18	42
Congress Street/Boston Wharf Road	**B**	**18.7**	-	-	-
Congress St EB left/thru	A	6.8	0.45	54	70
Congress St EB right	A	2.3	0.41	7	20
Congress St WB left	B	12.5	0.49	30	57
Congress St WB thru | thru/right	A	4.7	0.24	20	36
Boston Wharf Rd NB left	D	51.2	0.27	28	63
Boston Wharf Rd NB thru/right	C	29.2	0.38	13	53
Boston Wharf Rd SB left/thru	E	59.0	0.94	230	#399
Boston Wharf Rd SB right	A	2.4	0.16	0	m2
Congress Street/East Service Road/Highway	**B**	**19.0**	-	-	-
Congress St EB left	A	5.0	0.10	7	m17
Congress St EB thru | thru	A	4.7	0.22	35	m54
Congress St WB thru | thru/right	B	11.8	0.20	92	140
I-93 NB Off-Ramp NB left/thru | thru	D	49.7	0.47	58	87
I-93 NB Off-Ramp NB right	A	1.0	0.12	0	0
I-90 EB Off-Ramp NEB left/thru | thru/right	D	50.1	0.52	64	97

Table 3-14 Existing (2016) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/B Street/Highway Ramps	**C**	**25.5**	-	-	-
Congress St EB left/thru | thru	C	27.0	0.52	106	153
Congress St EB right	C	29.4	0.49	87	157
Congress St WB left	C	28.5	0.52	106	m79
Congress St WB left/thru | thru/right	C	25.9	0.59	112	m71
I-90 WB Off-Ramp NB left	D	48.4	0.56	122	197
I-90 WB Off-Ramp NB thru	C	27.1	0.29	94	150
I-90 WB Off-Ramp NB right	A	4.8	0.41	0	55
B St SB thru | thru	C	26.6	0.59	74	m102
B St SB right	A	8.5	0.13	21	m32
Congress Street/D Street	**F**	**>80.0**	-	-	-
Congress St EB left/thru | thru/right	C	21.5	0.44	61	94
Congress St EB right	C	22.5	0.35	46	86
Congress St WB left/thru | thru/right	F	>80.0	>1.00	~211	#296
D St NB left | left	F	>80.0	>1.00	~180	#272
D St NB thru/right	C	35.0	0.62	93	174
D St SB left/thru | thru/right	D	43.2	0.61	134	186
D Street/Silver Line Way	**A**	**7.7**	-	-	-
SL Way EB left/thru/right	E	56.4	0.36	22	52
SL Way WB left/thru/right	E	58.3	0.41	26	50
D St NB thru | thru | thru/right	A	5.7	0.13	47	27
D St SB thru | thru	A	3.7	0.23	57	m87
D Street/ Massport Haul Road (I-90 On-Ramps)	**B**	**17.6**	-	-	-
D St NB left	D	50.1	0.77	228	#387
D St NB thru | thru	A	2.2	0.15	0	89
D St SB thru | thru/right	A	9.9	0.38	25	149
D Street/Summer Street	**C**	**24.9**	-	-	-
Summer St EB left	B	18.9	0.62	37	59
Summer St EB thru | thru/right	A	8.6	0.47	60	73
Summer St WB left	D	54.4	0.36	9	m25
Summer St WB thru	D	42.5	0.69	143	#227
Summer St WB right	B	15.3	0.58	111	217
D St NB left	D	39.7	0.21	38	72
D St NB thru | thru/right	D	41.2	0.45	93	126
D St SB left	D	44.6	0.49	94	176
D St SB left/thru | thru/right	C	30.4	0.41	67	122

Table 3-14 Existing (2016) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Sleeper Street/Northern Avenue	-	-	-	-	-
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.2	0.24	-	24
Sleeper St NB left/right	B	11.2	0.14	-	12
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	4.1	0.05	-	4
Northern Ave WB thru/right	A	0.0	0.14	-	0
Courthouse Way SB left/right	D	27.5	0.51	-	68
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru	A	1.9	0.02	-	2
Northern Ave WB thru/right	A	0.0	0.10	-	0
Fan Pier Blvd SB left/right	D	30.5	0.61	-	97
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	0.7	0.01	-	1
Northern Ave WB thru/right	A	0.0	0.11	-	0
Marina Park SB left/right	C	21.8	0.35	-	39
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru	A	0.4	0.01	-	1
Northern Ave WB thru/right	A	0.0	0.12	-	0
Harbor Shore Dr SB left/right	C	15.9	0.15	-	13
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.25	-	0
Seaport Blvd WB left/thru | thru	A	0.9	0.21	-	5
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	A	5.2	0.16	-	14
Congress St WB left/thru/right	A	0.2	0.01	-	0
Driveway NB left/thru/right	C	18.0	0.04	-	3
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	308
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	0.7	0.03	-	2
Congress St WB thru/right	A	0.0	0.27	-	0
Farnsworth St SB left/right	F	>50.0	0.78	-	121

Grey Shading indicates LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

As shown in Table 3-13 and Table 3-14, the majority of intersections and approaches operate well under the Existing (2016) Condition with the following exceptions:

- The signalized intersection of **Seaport Boulevard/Sleeper Street** operates at LOS D during both the a.m. and p.m. peak hours. The Seaport Boulevard eastbound approach operates at LOS F during the a.m. and p.m. peak hours. The Sleeper Street northbound approach operates at LOS E during the p.m. peak hour. The longest queues at the intersection occur at the Seaport Boulevard eastbound approach during the a.m. peak hour and at the Sleeper Street northbound approach during the p.m. peak hour.

- The signalized intersection of **Seaport Boulevard/East Service Road/Pier 4 Boulevard** operates at LOS C during the a.m. and p.m. peak hours. The East Service Road northbound through lane operates at LOS E during the a.m. and p.m. peak hours. The Pier 4 Boulevard southbound left-turn lane operates at LOS E during the a.m. and p.m. peak hours. The longest queues at the intersection occur at the East Service Road northbound through lane during the a.m. peak hour and at the Seaport Boulevard westbound approach during the p.m. peak hour.

- The signalized intersection of **Seaport Boulevard/B Street** operates at LOS C during the a.m. peak hour and LOS D during the p.m. peak hour. The B Street northbound left-turn lanes operate at LOS E during the p.m. peak hour. The longest queues at the intersection occur at the B St northbound right-turn lane during the a.m. peak hour and at the Seaport Boulevard eastbound approach during the p.m. peak hour.

- The signalized intersection of **D Street/Northern Avenue/Seaport Boulevard/Boston Fish Pier** operates at LOS B during the a.m. and p.m. peak hours. The D Street northbound left-turn lane operates at LOS E during the a.m. and p.m. peak hours. The longest queues at the intersection occur at the Seaport Boulevard eastbound approach during the a.m. peak hour and at the D Street northbound left-turn lane during the a.m. peak hour.

- The signalized intersection of **Congress Street/A Street/Thomson Place** operates at LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. The A Street northbound left-turn lane operates at LOS E during the a.m. and p.m. peak hours. The longest queues at the intersection occur at the Congress Street westbound through/right-turn lane during the a.m. peak hour and at the A Street northbound left-turn lane during the p.m. peak hour.

- The signalized intersection of **Congress Street/Boston Wharf Road** operates at LOS C during the a.m. peak hour and LOS B during the p.m. peak hour. The Boston Wharf Road southbound left-turn/through lane operates at LOS E during the a.m. and p.m. peak hours. The longest queues at the intersection occur at the Congress Street eastbound left-turn/through lane during the a.m. peak hour and at the Boston Wharf Road southbound left-turn/through lane during the p.m. peak hour.

- The signalized intersection of **Congress Street/B Street/Highway Ramps** operates at LOS C during the a.m. and p.m. peak hours. The B Street southbound through lanes operate at LOS E during the a.m. peak hour. The longest queues at the intersection occur at the I-90 WB Off-Ramp northbound left-turn lane during the a.m. and p.m. peak hours.

- The signalized intersection of **Congress Street/D Street** operates at LOS C during the a.m. peak hour and LOS F during the p.m. peak hour. The Congress Street westbound approach and D Street northbound left-turn lanes operate at LOS F during the p.m. peak hour. The longest queues at the intersection occur at the Congress Street eastbound right-turn lane during the a.m. peak hour and at the Congress Street westbound approach during the p.m. peak hour.

- The signalized intersection of **D Street/Silver Line Way** operates at LOS A during the a.m. and p.m. peak hours. The Silver Line Way eastbound and westbound approaches operate at LOS E during the a.m. and p.m. peak hours. The longest queues at the intersection occur at the D Street southbound approach during the a.m. and p.m. peak hours.

- At the unsignalized intersection of **Congress Street/Sleeper Street** the Sleeper Street southbound stop controlled approach operates at LOS F during the a.m. and p.m. peak hours.

- At the unsignalized intersection of **Congress Street/Farnsworth Street** the Farnsworth Street southbound stop controlled approach operates at LOS F during the a.m. and p.m. peak hours.

3.9.2 No-Build (2023) Condition Traffic Operations Analysis

The No-Build (2023) Condition analysis uses the same methodology as the Existing (2016) Condition capacity analysis. Tables 3-15 and Table 3-16 present the No-Build (2023) Condition operations analysis for the a.m. and p.m. peak hours, respectively. The shaded cells in the tables indicate a decrease in LOS between the Existing (2016) Condition and the No-Build (2023) Condition to an LOS below LOS D. Due to the improvements along Seaport Boulevard discussed in Section 3.3.3, there are some lane modifications and some of the Seaport Boulevard corridor intersections may operate better than the Existing Condition. The detailed analysis sheets are provided in Appendix A.

Table 3-15 No-Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**B**	**10.9**	-	-	-
Northern Ave EB left/thru	D	48.6	0.11	8	27
Northern Ave EB right	A	0.6	0.10	0	9
Driveway WB left/thru/right	E	56.9	0.35	25	59
Pier 4 Blvd NB left	A	5.1	0.28	67	101
Pier 4 Blvd NB thru/right	A	1.4	0.09	12	24
Pier 4 Blvd SB left/thru/right	D	50.1	0.41	39	30
Seaport Boulevard/Sleeper Street	**B**	**15.4**	-	-	-
Seaport Blvd EB left/thru | thru/right	A	5.9	0.33	18	m24
Seaport Blvd EB thru | thru/right	A	4.5	0.55	65	m78
Seaport Blvd WB left/thru | thru/right	B	20.0	0.77	46	#304
Sleeper St NB left/thru/right	D	53.6	0.76	103	m135
Sleeper St SB left/thru	D	46.9	0.31	52	89
Sleeper St SB right	B	18.4	0.25	13	45
Seaport Boulevard/Boston Wharf Road	**A**	**7.6**	-	-	-
Seaport Blvd EB thru | thru/right	A	4.3	0.54	24	98
Seaport Blvd WB left	A	4.9	0.29	14	33
Seaport Blvd WB thru | thru	A	3.6	0.33	64	87
Boston Wharf Rd NB left	D	51.2	0.64	110	176
Boston Wharf Rd NB right	B	15.6	0.12	6	m27
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**21.3**	-	-	-
Seaport Blvd EB left	B	15.2	0.25	20	45
Seaport Blvd EB thru | thru	B	11.4	0.45	78	127
Seaport Blvd WB thru | thru/right	B	16.1	0.60	73	121
East Service Rd NB left/thru | thru	D	45.8	0.78	187	233
East Service Rd NB right	A	2.3	0.20	3	m4
Pier 4 Blvd SB left | left	E	55.6	0.51	31	57
Seaport Boulevard/B Street	**B**	**18.3**	-	-	-
Seaport Blvd EB thru | thru/right	B	13.9	0.44	244	380
Seaport Blvd WB left/thru | thru	A	5.4	0.28	38	71
B St NB left | left	D	36.1	0.76	121	164
B St NB right	D	35.3	0.60	80	m130

Table 3-15 No-Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
D Street/Northern Avenue/Boston Fish Pier	**C**	**21.7**	-	-	-
Seaport Blvd EB left/thru | thru/right	B	16.3	0.59	172	277
Northern Ave WB left/thru | thru/right	B	13.0	0.25	40	76
D St NB left	D	49.0	0.70	132	203
D St NB right	A	0.5	0.10	0	0
Boston Fish Pier SB left/thru/right	D	47.3	0.50	37	80
Congress Street/A Street/Thomson Place	**D**	**42.9**	-	-	-
Congress St EB left/thru | thru	D	38.3	0.59	111	156
Congress St EB right	D	37.4	0.39	77	123
Congress St WB left	D	48.9	0.79	265	#422
Congress St WB thru/right	D	42.9	0.62	357	484
A St NB left	E	69.8	0.77	121	#228
A St NB right	A	4.8	0.32	0	39
Thomson Pl SB left/thru/right	E	68.2	0.59	47	m#104
Congress Street/Boston Wharf Road	**C**	**23.3**	-	-	-
Congress St EB left/thru	C	22.0	0.62	261	#387
Congress St EB right	A	3.3	0.27	1	127
Congress St WB left	C	20.7	0.46	54	m114
Congress St WB thru | thru/right	B	17.5	0.61	156	238
Boston Wharf Rd NB left	D	42.4	0.35	67	112
Boston Wharf Rd NB thru/right	E	55.9	0.75	118	186
Boston Wharf Rd SB left/thru	D	40.5	0.59	54	101
Boston Wharf Rd SB right	A	2.5	0.16	1	m5
Congress Street/East Service Road/Highway Ramps	**C**	**33.1**	-	-	-
Congress St EB left	C	28.4	0.40	17	m63
Congress St EB thru | thru	B	18.4	0.30	38	101
Congress St WB thru | thru/right	C	23.6	0.59	128	m186
I-93 NB Off-Ramp NB left/thru | thru	D	48.6	0.76	174	229
I-93 NB Off-Ramp NB right	A	8.5	0.26	0	41
I-90 EB Off-Ramp NEB left/thru | thru/right	D	41.9	0.80	232	274

Table 3-15 No-Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/B Street/Highway Ramps	**D**	**35.8**	-	-	-
Congress St EB left/thru | thru	D	50.3	0.93dl	148	217
Congress St EB right	D	47.1	0.41	73	m137
Congress St WB left	C	23.4	0.43	47	m108
Congress St WB left/thru | thru/right	C	27.8	0.74	74	#284
I-90 WB Off-Ramp NB left	E	64.0	0.85	216	#367
I-90 WB Off-Ramp NB thru	C	30.6	0.49	171	242
I-90 WB Off-Ramp NB right	A	5.2	0.50	0	60
B St SB thru | thru	E	65.8	0.31	33	61
B St SB right	A	2.4	0.07	0	m11
Congress Street/D Street	**D**	**41.1**	-	-	-
Congress St EB left/thru | thru/right	C	30.1	0.50	113	166
Congress St EB right	D	53.2	0.86	237	#441
Congress St WB left/thru | thru/right	D	52.6	0.61	66	106
D St NB left | left	C	32.3	0.67	147	189
D St NB thru/right	C	34.1	0.63	137	203
D St SB left/thru | thru/right	D	51.6	0.69	106	155
D Street/Silver Line Way	**A**	**8.6**	-	-	-
SL Way EB left/thru/right	E	61.0	0.47	32	69
SL Way WB left/thru/right	E	55.2	0.37	25	57
D St NB thru | thru | thru/right	A	7.4	0.18	50	130
D St SB thru | thru	A	3.7	0.27	50	m132
D Street/ Massport Haul Road (I-90 On-Ramps)	**B**	**14.0**	-	-	-
D St NB left	D	43.6	0.57	140	m227
D St NB thru | thru	A	1.2	0.21	0	60
D St SB thru | thru/right	B	14.0	0.42	78	135
D Street/Summer Street	**C**	**26.3**	-	-	-
Summer St EB left	D	50.2	0.73	67	#130
Summer St EB thru | thru/right	C	20.6	0.50	112	174
Summer St WB left	E	62.5	0.58	13	m#50
Summer St WB thru	D	43.3	0.84	197	#434
Summer St WB right	B	11.5	0.64	86	28
D St NB left	D	46.5	0.51	99	167
D St NB thru | thru/right	D	36.5	0.40	62	101
D St SB left	C	22.3	0.61	58	97
D St SB left/thru | thru/right	A	6.4	0.51	9	11

Table 3-15 No-Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Seaport Boulevard/Fan Pier Boulevard	**B**	**14.2**	-	-	-
Seaport Blvd EB left	A	4.2	0.21	11	21
Seaport Blvd EB thru | thru/right	A	4.2	0.41	54	68
Seaport Blvd WB left/thru | thru/right	C	23.8	0.64	156	228
Thomson Pl NB left/thru/right	D	46.6	0.04	3	m5
Fan Pier Blvd SB left/thru/right	C	33.8	0.50	78	132
Unsignalized Intersections					
Sleeper Street/Northern Avenue	-	-	-	-	-
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.1	0.11	-	10
Sleeper St NB left/right	C	15.7	0.45	-	58
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	8.2	0.23	-	22
Northern Ave WB thru/right	A	0.0	0.09	-	0
Courthouse Way SB left/right	C	19.7	0.15	-	13
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.0	0.00	-	0
Northern Ave WB left/thru/right	A	0.3	0.00	-	0
Fan Pier Blvd NB left/thru/right	C	21.3	0.34		36
Fan Pier Blvd SB left/thru/right	C	21.3	0.34	-	36
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	2.4	0.03	-	2
Northern Ave WB thru/right	A	0.0	0.18	-	0
Pier St NB left/thru/right	C	25.0	0.45	-	56
Marina Park SB left/right	D	27.8	0.22	-	21
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.1	0.00	-	0
Northern Ave WB left/thru/right	A	0.0	0.00	-	0
Harbor Shore Dr NB left/thru/right	A	0.0	0.00	-	0
Harbor Shore Dr SB left/thru/right	B	13.5	0.03	-	2
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.35	-	0
Seaport Blvd WB left/thru | thru	A	2.3	0.15	-	3

Table 3-15 No-Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	C	21.1	0.37	-	40
Congress St WB left/thru/right	A	0.3	0.01	-	1
Driveway NB left/thru/right	E	43.7	0.04	-	3
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	-
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	5.2	0.15	-	13
Congress St WB thru/right	A	0.0	0.40	-	0
Farnsworth St SB left/right	F	>50.0	0.70	-	82

Grey Shading indicates a decrease to LOS E or F.

~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

\# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

m Volumes for 95th percentile queue is metered by upstream signal.

Table 3-16 No-Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**B**	**18.4**	-	-	-
Northern Ave EB left/thru	D	50.3	0.05	4	18
Northern Ave EB right	A	0.9	0.20	0	18
Driveway WB left/thru/right	D	49.6	0.09	7	26
Pier 4 Blvd NB left	A	5.7	0.14	21	m87
Pier 4 Blvd NB thru/right	A	1.4	0.04	0	m12
Pier 4 Blvd SB left/thru/right	E	59.4	0.72	120	186
Seaport Boulevard/Sleeper Street	**C**	**22.0**	-	-	-
Seaport Blvd EB left	C	20.2	0.30	14	m16
Seaport Blvd EB thru | thru/right	B	11.1	0.60	112	m113
Seaport Blvd WB thru | thru/right	C	21.4	0.89	100	#142
Sleeper St NB left/thru/right	E	56.6	0.84	150	m#238
Sleeper St SB left/thru	D	43.0	0.66	113	196
Sleeper St SB right	B	11.5	0.43	47	99

Table 3-16 No-Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Seaport Boulevard/Boston Wharf Road	**B**	**12.3**	-	-	-
Seaport Blvd EB thru | thru/right	B	10.5	0.76	139	144
Seaport Blvd WB left	C	26.6	0.55	112	202
Seaport Blvd WB thru | thru	A	3.5	0.40	71	90
Boston Wharf Rd NB left	E	57.9	0.59	86	m145
Boston Wharf Rd NB right	C	26.3	0.16	34	m74
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**26.4**	-	-	-
Seaport Blvd EB left	B	11.8	0.19	15	44
Seaport Blvd EB thru | thru	B	10.3	0.46	84	175
Seaport Blvd WB thru | thru/right	C	32.6	0.68	313	263
East Service Rd NB left/thru | thru	E	71.0	0.65	98	133
East Service Rd NB right	B	14.0	0.49	42	97
Pier 4 Blvd SB left | left	E	58.0	0.61	72	108
Seaport Boulevard/B Street	**B**	**10.1**	-	-	-
Seaport Blvd EB thru | thru/right	A	3.1	0.56	16	101
Seaport Blvd WB left/thru | thru	A	5.6	0.46	72	138
B St NB left | left	D	38.0	0.66	76	110
B St NB right	D	44.7	0.66	68	m115
D Street/Northern Avenue/Boston Fish Pier	**B**	**15.3**	-	-	-
Seaport Blvd EB left/thru | thru/right	A	8.1	0.50	96	181
Northern Ave WB left/thru | thru/right	B	12.2	0.41	109	184
D St NB left	D	51.2	0.70	126	194
D St NB right	A	0.4	0.08	0	0
Boston Fish Pier SB left/thru/right	D	39.5	0.48	31	75
Congress Street/A Street/Thomson Place	**C**	**34.0**	-	-	-
Congress St EB left/thru | thru	D	36.1	0.60	110	164
Congress St EB right	D	37.7	0.49	67	124
Congress St WB left	C	23.5	0.54	77	127
Congress St WB thru/right	C	22.2	0.54	165	236
A St NB left/thru	F	87.8	0.88	126	#254
A St NB right	A	6.7	0.52	0	54
Thomson Pl SB left/thru/right	F	83.6	0.54	48	m#96

Table 3-16 No-Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/Boston Wharf Road	**C**	**23.0**	-	-	-
Congress St EB left/thru	B	11.0	0.60	92	152
Congress St EB right	A	3.5	0.50	14	25
Congress St WB left	B	19.6	0.59	43	84
Congress St WB thru | thru/right	A	8.4	0.27	35	70
Boston Wharf Rd NB left	D	51.7	0.30	32	68
Boston Wharf Rd NB thru/right	C	29.1	0.40	14	56
Boston Wharf Rd SB left/thru	E	74.1	1.00	~264	m#462
Boston Wharf Rd SB right	B	12.5	0.40	22	m81
Congress Street/East Service Road/Highway Ramps	**B**	**19.6**	-	-	-
Congress St EB left	A	5.3	0.14	8	m16
Congress St EB thru | thru	A	4.9	0.28	40	m57
Congress St WB thru | thru/right	B	12.6	0.24	96	127
I-93 NB Off-Ramp NB left/thru | thru	D	49.8	0.51	68	103
I-93 NB Off-Ramp NB right	A	4.5	0.23	0	13
I-90 EB Off-Ramp NEB left/thru | thru/right	D	49.7	0.60	87	124
Congress Street/B Street/Highway Ramps	**C**	**31.4**	-	-	-
Congress St EB left/thru | thru	C	30.1	0.66	146	202
Congress St EB right	D	35.0	0.65	125	212
Congress St WB left	C	29.5	0.62	135	m81
Congress St WB left/thru | thru/right	C	27.6	0.70	156	m73
I-90 WB Off-Ramp NB left	D	50.9	0.63	138	218
I-90 WB Off-Ramp NB thru	C	27.9	0.37	123	191
I-90 WB Off-Ramp NB right	A	4.9	0.46	0	60
B St SB thru | thru	E	69.4	0.74	106	#153
B St SB right	A	4.2	0.13	3	m23
Congress Street/D Street	**F**	**>80.0**	-	-	-
Congress St EB left/thru | thru/right	C	21.0	0.54	70	105
Congress St EB right	C	23.9	0.54	69	m116
Congress St WB left/thru | thru/right	F	>80.0	>1.00	~218	#325
D St NB left | left	F	>80.0	>1.00	~224	#323
D St NB thru/right	E	55.3	0.82	139	#282
D St SB left/thru | thru/right	F	>80.0	0.99	245	#371

Table 3-16 No-Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
D Street/Silver Line Way	**A**	**6.3**	-	-	-
SL Way EB left/thru/right	E	58.4	0.38	23	54
SL Way WB left/thru/right	E	56.6	0.38	23	55
D St NB thru | thru | thru/right	A	5.6	0.16	58	38
D St SB thru | thru	A	3.1	0.36	60	m81
D Street/ Massport Haul Road (I-90 On-Ramps)	**C**	**26.4**	-	-	-
D St NB left	F	>80.0	0.94	342	m#473
D St NB thru | thru	A	1.9	0.19	0	m87
D St SB thru | thru/right	B	12.8	0.59	80	193
D Street/Summer Street	**C**	**34.8**	-	-	-
Summer St EB left	E	77.5	1.00	73	#286
Summer St EB thru | thru/right	B	11.6	0.56	77	140
Summer St WB left	E	75.8	0.58	15	m#67
Summer St WB thru	D	51.4	0.83	179	#396
Summer St WB right	C	22.8	0.67	139	227
D St NB left	D	40.9	0.28	51	98
D St NB thru | thru/right	D	42.8	0.52	108	156
D St SB left	D	42.9	0.62	129	219
D St SB left/thru | thru/right	C	31.6	0.68	129	196
Seaport Boulevard/Fan Pier Boulevard	**C**	**20.0**	-	-	-
Seaport Blvd EB left	A	9.3	0.11	10	m19
Seaport Blvd EB thru | thru/right	A	9.6	0.49	134	134
Seaport Blvd WB thru | thru/right	C	26.4	0.70	221	302
Thomson Pl NB left/thru/right	C	29.7	0.24	11	m23
Fan Pier Blvd SB left/thru/right	C	33.9	0.72	160	231
Unsignalized Intersections					
Sleeper Street/Northern Avenue	**-**	**-**	**-**	**-**	**-**
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.4	0.29	-	30
Sleeper St NB left/right	B	12.2	0.15	-	13
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	4.8	0.06	-	5
Northern Ave WB thru/right	A	0.0	0.17	-	0
Courthouse Way SB left/right	D	30.3	0.54	-	75

Table 3-16 No-Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.0	0.00	-	0
Northern Ave WB left/thru/right	A	0.0	0.01	-	1
Fan Pier Blvd NB left/thru/right	C	19.2	0.10	-	8
Fan Pier Blvd SB left/thru/right	F	>50.0	>1.00	-	412
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	1.1	0.02	-	1
Northern Ave WB thru/right	A	0.0	0.10	-	0
Pier St NB left/thru/right	C	20.8	0.28	-	29
Marina Park SB left/right	E	42.5	0.55	-	73
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.5	0.01	-	1
Northern Ave WB left/thru/right	A	0.0	0.00	-	0
Harbor Shore Dr NB left/thru/right	A	0.0	0.00	-	0
Harbor Shore Dr SB left/thru/right	C	17.3	0.18	-	16
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.40	-	0
Seaport Blvd WB left/thru | thru	A	3.4	0.29	-	8
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	A	9.1	0.25	-	25
Congress St WB left/thru/right	A	0.2	0.01	-	0
Driveway NB left/thru/right	C	17.6	0.03	-	2
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	264
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	0.9	0.03	-	2
Congress St WB thru/right	A	0.0	0.33	-	0
Farnsworth St SB left/right	F	>80.0	0.88	-	146

Grey Shading indicates LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
\# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

As shown in Table 3-15 and Table 3-16, the following operational deficiencies are expected under the No-Build (2023) Condition:

- The signalized intersection of **Northern Avenue/Pier 4 Boulevard** will operate at LOS B during the a.m. and p.m. peak hour. The Pier 4 Boulevard southbound approach will decrease to LOS E during the p.m. peak hour. The longest queues at the intersection will occur at the Pier 4 Boulevard southbound approach during the p.m. peak hour.

- The signalized intersection of **Seaport Boulevard/Boston Wharf Road** will continue to operate at LOS B during the p.m. peak hour. The Boston Wharf Road northbound left-turn lane decreases to LOS E during the p.m. peak hour. The longest queues in the intersection will occur in the Seaport Boulevard westbound left-turn lane during both the a.m. and p.m. peak hours.

- The signalized intersection of **Congress Street/A Street/Thomson Place** will continue to operate at LOS D during the a.m. peak hour and LOS C during the p.m. peak hour. The A Street northbound left-turn lane will continue to operate at LOS E during the a.m. peak hour and decrease to LOS F during the p.m. peak hour. The Thomson Place southbound approach will decrease to LOS E during the a.m. peak hour and decrease to LOS F during the p.m. peak hour. The longest queues at the intersection will occur at the Congress Street westbound through/right-turn lane during the a.m. peak hour and at the A Street northbound left-turn lane during the p.m. peak hour.

- The signalized intersection of **Congress Street/Boston Wharf Road** will continue to operate at LOS C during the a.m. peak hour. The Boston Wharf Road northbound through/right-turn lane will decrease to LOS E during the a.m. peak hour. The longest queues at the intersection will occur at the Congress Street eastbound left-turn/through lane during the a.m. peak hour.

- The signalized intersection of **Congress Street/B Street/Highway Ramps** will decrease to LOS D during the a.m. peak hour and continue to operate at LOS C during the p.m. peak hour. The I-90 WB Off-Ramp northbound left-turn lane will decrease to LOS E during the a.m. peak hour. The B Street southbound through lanes will continue to operate at LOS E during the a.m. peak hour and decrease to LOS E during the p.m. peak hour. The longest queues at the intersection will occur at the I-90 WB Off-Ramp northbound left-turn lane during the a.m. peak hour and at the Congress Street eastbound right-turn lane during the p.m. peak hour.

- The signalized intersection of **Congress Street/D Street** will continue to operate at LOS F during the p.m. peak hour. The D Street northbound through/right-turn lane will decrease to LOS E during the p.m. peak hour and the D Street southbound approach will decrease to LOS F during the p.m. peak hour. The longest queues at the intersection will occur at the D Street southbound approach during the p.m. peak hour.

- The signalized intersection of **D Street/Massport Haul Road (I-90 On-Ramps)** will continue to operate at LOS C during the p.m. peak hour. The D Street northbound left-turn lane will decrease to LOS F during the p.m. peak hour. The longest queues at the intersection will occur in the D Street northbound left-turn lane.

- The signalized intersection of **D Street/Summer Street** will continue to operate at LOS C during the a.m. and p.m. peak hours. The Summer Street eastbound left-turn lane will decrease to LOS E during the p.m. peak hour. The Summer Street westbound left-turn lane will decrease to LOS E during both the a.m. and p.m. peak hours. The longest queues at the intersection will occur at the Summer Street westbound through lane during both the a.m. and p.m. peak hours.

- At the unsignalized intersection of **Northern Avenue/Fan Pier Boulevard** the stop-controlled Fan Pier Boulevard southbound approach will decrease to LOS F during the p.m. peak hour.

- At the unsignalized intersection of **Northern Avenue/Marina Park Drive** the stop-controlled Marina Park Drive southbound approach will decrease to LOS E during the p.m. peak hour.

- At the unsignalized intersection of **Congress Street/Sleeper Street** the northbound driveway will decrease to LOS E in the a.m. peak hour while the Sleeper Street southbound approach will continue to operate at LOS F during both the a.m. and p.m. peak hours.

3.9.3 Build (2023) Condition Traffic Operations Analysis

The Build (2023) Condition analysis uses the same methodology as the Existing (2016) Condition and No-Build (2023) Condition analysis. The Build Condition analysis includes the traffic operations improvements due to the transportation mitigation discussed in section 3.6.4. Table 3-13 and Table 3-14 present the Build (2023) Condition capacity analysis for the a.m. and p.m. peak hours, respectively. The shaded cells in the tables indicate a worsening in LOS between the No-Build (2023) Condition and the Build (2023) Condition. Due the proposed mitigation measures discussed in Section 3.6.4, some of the Congress Street corridor intersections operate better than the No-Build Condition. The detailed analysis sheets are provided in Appendix A.

Table 3-17 Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**B**	**10.3**	**-**	**-**	**-**
Northern Ave EB left/thru	D	48.6	0.11	8	27
Northern Ave EB right	A	0.6	0.12	0	10
Driveway WB left/thru/right	E	56.9	0.35	25	59
Pier 4 Blvd NB left	A	4.7	0.29	69	96
Pier 4 Blvd NB thru/right	A	1.3	0.09	13	m20
Pier 4 Blvd SB left/thru/right	D	50.1	0.41	39	30
Seaport Boulevard/Sleeper Street	**B**	**15.6**	**-**	**-**	**-**
Seaport Blvd EB left/thru | thru/right	A	6.0	0.33	18	m15
Seaport Blvd WB left	A	5.3	0.63	68	m55
Seaport Blvd WB thru | thru/right	C	21.7	0.82	61	#321
Sleeper St NB left/thru/right	D	51.9	0.77	113	142
Sleeper St SB left/thru	D	44.7	0.31	51	87
Sleeper St SB right	B	16.9	0.25	13	43
Seaport Boulevard/Boston Wharf Road	**A**	**8.6**	**-**	**-**	**-**
Seaport Blvd EB thru | thru/right	A	5.6	0.61	31	43
Seaport Blvd WB left	A	7.7	0.32	15	54
Seaport Blvd WB thru | thru	A	4.2	0.40	82	108
Boston Wharf Rd NB left	E	55.7	0.67	108	m162
Boston Wharf Rd NB right	A	8.4	0.12	4	m12
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**24.7**	-	-	-
Seaport Blvd EB left	B	18.4	0.30	22	49
Seaport Blvd EB thru | thru	B	14.5	0.49	95	142
Seaport Blvd WB thru | thru/right	C	24.8	0.74	230	312
East Service Rd NB left/thru | thru	D	41.9	0.79	197	241
East Service Rd NB right	A	7.8	0.32	14	m29
Pier 4 Blvd SB left | left	E	57.0	0.51	39	68
Seaport Boulevard/B Street	**C**	**21.8**	**-**	**-**	**-**
Seaport Blvd EB thru | thru/right	B	14.9	0.49	304	392
Seaport Blvd WB left/thru | thru	A	6.4	0.33	50	93
B St NB left | left	D	47.4	0.77	108	m137
B St NB right	D	44.6	0.56	72	m102

Table 3-17 Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
D Street/Northern Avenue/Boston Fish Pier	**C**	**24.2**	-	-	-
Seaport Blvd EB left/thru | thru/right	C	21.1	0.71	209	325
Northern Ave WB left/thru | thru/right	B	16.3	0.32	49	89
D St NB left	D	41.3	0.64	153	235
D St NB right	A	0.3	0.08	0	0
Boston Fish Pier SB left/thru/right	D	46.8	0.50	37	79
Congress Street/A Street/Thomson Place	**C**	**22.7**	-	-	-
Congress St EB left/thru | thru	B	17.6	0.30	56	108
Congress St EB right	B	18.5	0.24	39	92
Congress St WB left	C	24.7	0.72	103	#257
Congress St WB thru/right	B	16.8	0.52	143	278
A St NB left	E	55.7	0.70	139	205
A St NB right	A	5.5	0.39	0	51
Thomson Pl SB left/thru/right	D	45.4	0.48	54	m101
Congress Street/Boston Wharf Road	**C**	**25.0**	-	-	-
Congress St EB left/thru	D	37.8	0.89	222	#563
Congress St EB right	A	1.2	0.27	0	3
Congress St WB left	C	24.9	0.75	94	m#317
Congress St WB thru | thru/right	B	11.7	0.55	126	186
Boston Wharf Rd NB left	D	51.3	0.58	71	120
Boston Wharf Rd NB thru/right	D	53.5	0.77	140	209
Boston Wharf Rd SB left/thru	D	35.8	0.35	82	89
Boston Wharf Rd SB right	B	13.3	0.14	13	m16
Congress Street/East Service Road/Highway Ramps	**C**	**33.7**	-	-	-
Congress St EB left	D	47.8	0.62	30	m52
Congress St EB thru | thru	C	22.3	0.30	67	m96
Congress St WB thru | thru/right	B	19.8	0.76	183	#365
I-93 NB Off-Ramp NB left/thru | thru	D	49.2	0.80	196	257
I-93 NB Off-Ramp NB right	A	8.4	0.25	0	42
I-90 EB Off-Ramp NEB left/thru | thru/right	D	45.3	0.85	262	328

Table 3-17 Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/B Street/Highway Ramps	**C**	**31.1**	-	-	-
Congress St EB left/thru | thru	D	41.1	0.89dl	190	237
Congress St EB right	C	21.9	0.20	79	m126
Congress St WB left	C	27.2	0.38	104	m135
Congress St WB left/thru | thru/right	D	37.8	0.84	229	m#345
I-90 WB Off-Ramp NB left	D	36.0	0.71	224	325
I-90 WB Off-Ramp NB thru	C	30.2	0.53	186	274
I-90 WB Off-Ramp NB right	A	5.0	0.49	0	60
B St SB thru | thru	D	40.3	0.38	30	55
B St SB right	A	3.1	0.07	2	m6
Congress Street/D Street	**D**	**52.6**	-	-	-
Congress St EB left/thru | thru/right	D	39.6	0.51	149	210
Congress St EB right	E	68.8	0.90	275	#471
Congress St WB left/thru | thru/right	E	59.2	0.73	85	#137
D St NB left | left	D	45.8	0.85	187	#264
D St NB thru/right	D	47.5	0.77	173	#284
D St SB left/thru | thru/right	E	60.9	0.83	132	#210
D Street/Silver Line Way	**A**	**8.4**	-	-	-
SL Way EB left/thru/right	E	61.0	0.47	32	69
SL Way WB left/thru/right	E	55.2	0.37	25	57
D St NB thru | thru | thru/right	A	7.5	0.23	55	176
D St SB thru | thru	A	3.8	0.29	49	m142
D Street/ Massport Haul Road (I-90 On-Ramps)	**B**	**14.5**	-	-	-
D St NB left	D	44.2	0.57	152	m233
D St NB thru | thru	A	1.7	0.26	0	98
D St SB thru | thru/right	B	17.0	0.47	101	143
D Street/Summer Street	**C**	**27.9**	-	-	-
Summer St EB left	D	50.2	0.73	67	#130
Summer St EB thru | thru/right	C	20.6	0.50	112	174
Summer St WB left	E	62.9	0.58	13	m#51
Summer St WB thru	D	43.7	0.84	204	#435
Summer St WB right	B	14.0	0.70	99	178
D St NB left	D	46.5	0.51	99	167
D St NB thru | thru/right	D	43.4	0.58	101	148
D St SB left	C	25.5	0.66	58	137
D St SB left/thru | thru/right	A	8.0	0.54	8	10

Table 3-17 Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Seaport Boulevard/Fan Pier Boulevard	**B**	**19.2**	-	-	-
Seaport Blvd EB left	B	19.9	0.35	35	107
Seaport Blvd EB thru | thru/right	A	5.2	0.46	65	97
Seaport Blvd WB left/thru | thru/right	C	30.7	0.80	197	#337
Thomson Pl NB left/thru/right	D	49.0	0.27	29	m64
Fan Pier Blvd SB left/thru/right	D	35.9	0.55	96	149
Unsignalized Intersections					
Sleeper Street/Northern Avenue	**-**	**-**	**-**	**-**	**-**
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.1	0.11	-	10
Sleeper St NB left/right	C	15.7	0.45	-	58
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	8.2	0.23	-	22
Northern Ave WB thru/right	A	0.0	0.09	-	0
Courthouse Way SB left/right	C	19.7	0.15	-	13
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.0	0.00	-	0
Northern Ave WB left/thru/right	A	0.7	0.01	-	1
Fan Pier Blvd NB left/thru/right	C	21.5	0.36		39
Fan Pier Blvd SB left/thru/right	C	22.1	0.35	-	38
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	2.2	0.03	-	2
Northern Ave WB thru/right	A	0.0	0.19	-	0
Pier St NB left/thru/right	D	25.7	0.46	-	58
Marina Park SB left/right	D	28.8	0.23	-	21
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.1	0.00	-	0
Northern Ave WB left/thru/right	A	0.3	0.01	-	1
Harbor Shore Dr NB left/thru/right	B	11.0	0.05	-	4
Harbor Shore Dr SB left/thru/right	B	13.8	0.03	-	2
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.37	-	0
Seaport Blvd WB left/thru | thru	A	2.2	0.18	-	4

Table 3-17 Build (2023) Condition, Capacity Analysis Summary, a.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	C	24.2	0.41	-	46
Congress St WB left/thru/right	A	0.3	0.01	-	1
Driveway NB left/thru/right	F	50.7	0.05	-	4
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	-
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	5.2	0.14	-	12
Congress St WB thru/right	A	0.0	0.40	-	0
Farnsworth St SB left/right	F	>50.0	0.66	-	77

Grey Shading indicates a decrease to LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

Table 3-18 Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Northern Avenue/Pier 4 Boulevard	**B**	**15.8**	-	-	-
Northern Ave EB left/thru	D	50.2	0.05	4	18
Northern Ave EB right	A	0.8	0.22	1	18
Driveway WB left/thru/right	D	49.6	0.09	7	26
Pier 4 Blvd NB left	A	5.5	0.17	21	m93
Pier 4 Blvd NB thru/right	A	1.3	0.04	0	m11
Pier 4 Blvd SB left/thru/right	E	58.8	0.69	106	168
Seaport Boulevard/Sleeper Street	**C**	**29.7**	-	-	-
Seaport Blvd EB left/thru | thru/right	C	25.3	0.41	17	m23
Seaport Blvd WB left	B	12.6	0.66	127	m130
Seaport Blvd WB thru | thru/right	D	35.9	0.99	100	#480
Sleeper St NB left/thru/right	E	58.3	0.88	154	#292
Sleeper St SB left/thru	D	52.6	0.80	162	#289
Sleeper St SB right	B	13.3	0.47	63	117

Table 3-18 Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Seaport Boulevard/Boston Wharf Road	**C**	**24.0**	**-**	**-**	**-**
Seaport Blvd EB thru | thru/right	C	31.0	0.94	82	#591
Seaport Blvd WB left	D	40.7	0.67	149	#289
Seaport Blvd WB thru | thru	A	4.7	0.44	80	103
Boston Wharf Rd NB left	E	55.3	0.71	137	m201
Boston Wharf Rd NB right	C	26.3	0.34	88	m148
Seaport Boulevard/East Service Road/Pier 4 Boulevard	**C**	**29.4**	-	-	-
Seaport Blvd EB left	B	16.1	0.22	23	49
Seaport Blvd EB thru | thru	B	17.0	0.61	190	250
Seaport Blvd WB thru | thru/right	D	39.5	0.76	336	271
East Service Rd NB left/thru | thru	D	49.3	0.51	81	114
East Service Rd NB right	C	20.1	0.69	89	145
Pier 4 Blvd SB left | left	E	66.3	0.74	82	#147
Seaport Boulevard/B Street	**B**	**12.6**	**-**	**-**	**-**
Seaport Blvd EB thru | thru/right	A	5.1	0.71	55	90
Seaport Blvd WB left/thru | thru	A	6.9	0.53	86	161
B St NB left | left	D	50.1	0.69	112	m148
B St NB right	D	54.6	0.64	95	m139
D Street/Northern Avenue/Boston Fish Pier	**B**	**16.9**	-	-	-
Seaport Blvd EB left/thru | thru/right	B	11.4	0.69	174	310
Northern Ave WB left/thru | thru/right	B	14.7	0.50	125	209
D St NB left	D	48.0	0.68	138	211
D St NB right	A	0.4	0.07	0	0
Boston Fish Pier SB left/thru/right	D	39.5	0.48	31	75
Congress Street/A Street/Thomson Place	**C**	**24.0**	**-**	**-**	**-**
Congress St EB left/thru | thru	C	25.1	0.47	124	127
Congress St EB right	C	31.1	0.52	79	119
Congress St WB left	C	34.2	0.81	71	#155
Congress St WB thru/right	B	14.8	0.57	135	185
A St NB left/thru	D	43.6	0.50	123	195
A St NB right	A	4.7	0.49	0	39
Thomson Pl SB left/thru/right	D	41.2	0.32	49	m71

Table 3-18 Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Congress Street/Boston Wharf Road	**C**	**30.2**	-	-	-
Congress St EB left/thru	C	20.4	0.75	308	#467
Congress St EB right	A	5.1	0.57	25	35
Congress St WB left	E	59.4	0.83	160	#266
Congress St WB thru | thru/right	B	18.9	0.29	123	174
Boston Wharf Rd NB left	E	56.8	0.53	42	90
Boston Wharf Rd NB thru/right	C	24.5	0.58	42	114
Boston Wharf Rd SB left/thru	E	59.3	0.95	365	m#480
Boston Wharf Rd SB right	B	18.5	0.59	78	m128
Congress Street/East Service Road/Highway Ramps	**C**	**22.1**	-	-	-
Congress St EB left	B	12.3	0.16	15	m32
Congress St EB thru | thru	B	11.1	0.36	104	m172
Congress St WB thru | thru/right	B	14.3	0.31	111	m154
I-93 NB Off-Ramp NB left/thru | thru	D	49.7	0.55	80	115
I-93 NB Off-Ramp NB right	B	10.6	0.24	0	32
I-90 EB Off-Ramp NEB left/thru | thru/right	D	49.1	0.63	102	140
Congress Street/B Street/Highway Ramps	**C**	**31.4**	-	-	-
Congress St EB left/thru | thru	D	40.4	0.68	193	252
Congress St EB right	B	15.1	0.43	149	233
Congress St WB left	D	43.5	0.67	157	m101
Congress St WB left/thru | thru/right	D	43.8	0.86	192	m112
I-90 WB Off-Ramp NB left	C	24.6	0.46	117	180
I-90 WB Off-Ramp NB thru	C	23.1	0.34	121	185
I-90 WB Off-Ramp NB right	A	3.9	0.43	0	53
B St SB thru | thru	D	48.7	0.73	109	161
B St SB right	A	3.3	0.12	4	m14
Congress Street/D Street	**F**	**>80.0**	-	-	-
Congress St EB left/thru | thru/right	C	26.4	0.57	174	214
Congress St EB right	C	30.6	0.61	181	265
Congress St WB left/thru | thru/right	F	>80.0	>1.00	~237	#345
D St NB left | left	F	>80.0	>1.00	~268	#372
D St NB thru/right	E	70.1	0.90	166	#325
D St SB left/thru | thru/right	F	>80.0	>1.00	~464	#595

Table 3-18 Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
D Street/Silver Line Way	**A**	**9.1**	-	-	-
SL Way EB left/thru/right	E	58.4	0.38	23	54
SL Way WB left/thru/right	E	56.6	0.38	23	55
D St NB thru | thru | thru/right	A	5.3	0.19	63	44
D St SB thru | thru	A	8.5	0.47	91	m60
D Street/ Massport Haul Road (I-90 On-Ramps)	**C**	**29.7**	-	-	-
D St NB left	F	>80.0	0.94	320	m#463
D St NB thru | thru	A	1.8	0.22	0	m93
D St SB thru | thru/right	C	22.3	0.76	134	#648
D Street/Summer Street	**D**	**40.8**	-	-	-
Summer St EB left	F	84.8	1.03	~78	#293
Summer St EB thru | thru/right	B	12.3	0.57	78	140
Summer St WB left	E	75.7	0.57	15	m#66
Summer St WB thru	D	54.4	0.85	183	#398
Summer St WB right	C	28.2	0.71	146	246
D St NB left	D	40.9	0.28	51	98
D St NB thru | thru/right	D	44.8	0.60	128	180
D St SB left	D	49.2	0.78	164	m#247
D St SB left/thru | thru/right	D	51.2	0.91	189	#306
Seaport Boulevard/Fan Pier Boulevard	**C**	**27.1**	-	-	-
Seaport Blvd EB left	B	19.7	0.26	12	m35
Seaport Blvd EB thru | thru/right	B	12.1	0.62	136	141
Seaport Blvd WB thru | thru/right	C	33.3	0.80	271	377
Thomson Pl NB left/thru/right	C	26.9	0.26	32	m64
Fan Pier Blvd SB left/thru/right	D	47.0	0.90	289	#465
Unsignalized Intersections					
Sleeper Street/Northern Avenue	**-**	**-**	**-**	**-**	**-**
Northern Ave EB thru/right	A	0.0	0.01	-	0
Northern Ave WB left/thru	A	8.5	0.30	-	32
Sleeper St NB left/right	B	12.5	0.16	-	14
Northern Avenue/Courthouse Way	-	-	-	-	-
Northern Ave EB left/thru	A	4.9	0.06	-	5
Northern Ave WB thru/right	A	0.0	0.18	-	0
Courthouse Way SB left/right	D	33.7	0.59	-	87

Table 3-18 Build (2023) Condition, Capacity Analysis Summary, p.m. Peak Hour (Continued)

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Unsignalized Intersections					
Northern Avenue/Fan Pier Boulevard	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.0	0.00	-	0
Northern Ave WB left/thru/right	A	1.4	0.02	-	2
Fan Pier Blvd NB left/thru/right	C	16.0	0.14	-	12
Fan Pier Blvd SB left/thru/right	F	>50.0	>1.00	-	516
Northern Avenue/Marina Park Drive	-	-	-	-	-
Northern Ave EB left/thru	A	1.0	0.02	-	1
Northern Ave WB thru/right	A	0.0	0.13	-	0
Pier St NB left/thru/right	C	22.9	0.31	-	32
Marina Park SB left/right	F	53.6	0.62	-	88
Northern Avenue/Harbor Shore Drive	-	-	-	-	-
Northern Ave EB left/thru/right	A	0.5	0.01	-	1
Northern Ave WB left/thru/right	A	1.4	0.03	-	2
Harbor Shore Dr NB left/thru/right	B	12.9	0.11	-	9
Harbor Shore Dr SB left/thru/right	C	22.0	0.24	-	22
Seaport Boulevard/Seaport Lane	-	-	-	-	-
Seaport Blvd EB thru | thru/right	A	0.0	0.50	-	0
Seaport Blvd WB left/thru | thru	A	4.8	0.30	-	12
Congress Street/Sleeper Street	-	-	-	-	-
Congress St EB left/thru/right	B	10.4	0.28	-	28
Congress St WB left/thru/right	A	0.2	0.01	-	0
Driveway NB left/thru/right	C	18.4	0.03	-	2
Sleeper St SB left/thru/right	F	>50.0	>1.00	-	285
Congress Street/Farnsworth Street	-	-	-	-	-
Congress St EB left/thru	A	1.0	0.03	-	3
Congress St WB thru/right	A	0.0	0.35	-	0
Farnsworth St SB left/right	F	>80.0	0.92	-	154

Grey Shading indicates LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
\# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

As shown in Table 3-13 and Table 3-14, the following operational deficiencies are expected to begin to occur under the Build (2023) Condition:

- The signalized intersection of **Seaport Boulevard/Boston Wharf Road** continues to operate at LOS A during the a.m. peak hour and LOS C during the p.m. peak hour. The Boston Wharf Road northbound left-turn lane decreases to LOS E during the a.m. peak hour and continues to operate at LOS E during the p.m. peak hour. The longest queues at the intersection will occur in the Boston Wharf Road northbound left-turn lane during the a.m. peak hour and the Seaport Boulevard eastbound approach during the p.m. peak hour.

- The signalized intersection of **Congress Street/Boston Wharf Road** continues to operate at LOS C during the a.m. and p.m. peak hours. The Congress Street westbound left-turn lane and the Boston Wharf Road northbound left-turn lane both decrease to LOS E during the p.m. peak hour. The longest queues at the intersection will occur at the Boston Wharf Road southbound left-turn/through lane.

- The signalized intersection of **Congress Street/D Street** continues to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour. The Congress Street eastbound right-turn lane, westbound approach, and the D Street southbound approach all decrease to LOS E during the a.m. peak hour and continue to operate at LOS F during the p.m. peak hour. The longest queues at the intersection will occur in the Congress Street eastbound right-turn lane during the a.m. peak hour and in the D Street southbound approach during the p.m. peak hour.

- The unsignalized intersection of **Northern Avenue/Marina Park Drive** will have the stop-controlled Marina Park Drive southbound approach decrease to LOS F during the p.m. peak hour.

- The unsignalized intersection of **Congress Street/Sleeper Street** will have the stop-controlled northbound driveway approach decrease to LOS F during the a.m. peak hour.

3.9.4 Traffic Operations Analysis Comparison

Table 3-19 below highlights operational improvements and deficiencies in overall LOS for the signalize study area intersections.

Table 3-19 Level of Service Comparison NPC Project Conditions

Intersection	a.m. Peak Hour			p.m. Peak Hour		
	Existing	No Build	Build	Existing	No Build	Build
Signalized Intersections						
Northern Ave/Pier 4 Blvd	A	B	B	A	B	B
Seaport Blvd/Sleeper St	D	B	B	D	C	C
Seaport Blvd/Boston Wharf Rd	A	A	A	B	B	C
Seaport Blvd/East Service Rd	C	C	C	C	C	C
Seaport Blvd/B St	C	B	C	D	B	B
D St/Northern Ave/Boston Fish Pier	B	C	C	B	B	B
Congress St/A St/Thomson Pl	D	D	C	C	C	C

Table 3-19 Level of Service Comparison NPC Project Conditions (Continued)

Intersection	a.m. Peak Hour			p.m. Peak Hour		
	Existing	No Build	Build	Existing	No Build	Build
Signalized Intersections						
Congress St/Boston Wharf Rd	C	C	C	B	C	C
Congress St/East Service Rd/Ramps	C	C	C	B	B	C
Congress St/B St/Ramps	C	D	C	C	C	C
Congress St/D St	C	D	D	F	F	F
D St/Silver Line Way	A	A	A	A	A	A
D St/Massport Haul Rd	B	B	B	B	C	C
D St/Summer St	C	C	C	C	C	D
Seaport Blvd/Fan Pier Blvd	-	B	B	-	C	C

Grey Shading indicates a decrease in LOS from the previous condition; black shading indicates an improvement in LOS.

As shown in Table 3-19, changes in overall intersection level of service from Existing condition to No Build condition to Build condition are fairly minimal and several intersections improve as a result of the proposed mitigation. As discussed in Section 3.3.3, there will be roadway improvements along Seaport Boulevard which is the reason for improvements at Seaport Boulevard/Sleeper Street and Seaport Boulevard/B Street during the a.m. and p.m. peak hours under the No Build Condition.

The Build (2023) Condition traffic operations were compared to the Build Mitigated traffic operations contained in the 2010 DPIR. Overall, the traffic operations are very similar to previous projections with some intersections experiencing improved level of service and others experiencing a decrease in level of service. Table 3-20 shows the comparison of signalized intersection overall level of service of the NPC Project to the 2010 DPIR.

Table 3-20 Level of Service Comparison, 2010 DPIR to NPC

Intersection	a.m. Peak Hour		p.m. Peak Hour	
	2010 DPIR	NPC	2010 DPIR	NPC
Signalized Intersections				
Seaport Boulevard/Sleeper Street	C	B	C	C
Seaport Boulevard/Boston Wharf Road	A	A	A	C
Seaport Boulevard/East Service Road	C	C	C	C
Seaport Boulevard/B Street	C	C	D	B
D Street/Northern Avenue/Boston Fish Pier	C	C	C	B
Congress Street/A Street/Thomson Place	D	C	E	C
Congress Street/Boston Wharf Road	C	C	D	C
Congress Street/East Service Road	D	C	C	C
Congress Street/B Street/Highway Ramps	F	C	F	C

Table 3-20 Level of Service Comparison, 2010 DPIR to NPC (Continued)

Intersection	a.m. Peak Hour		p.m. Peak Hour	
	2010 DPIR	NPC	2010 DPIR	NPC
Signalized Intersections				
Congress Street/D Street	C	D	E	F
D Street/Silver Line Way	A	A	A	A
D Street/Summer Street	E	C	E	D
Seaport Boulevard/Fan Pier Boulevard	B	B	C	C

Grey Shading indicates a decrease in LOS in the NPC; black shading indicates an improvement in LOS.

As shown in Table 3-20, the following operational improvements and deficiencies are expected comparing the 2010 DPIR to the NPC Project:

- The intersection of **Seaport Boulevard/Sleeper Street** improves from LOS C to LOS B during the a.m. peak hour.
- The intersection of **Seaport Boulevard/Boston Wharf Road** decreases from LOS A to LOS C during the p.m. peak hour.
- The intersection of **Seaport Boulevard/B Street** improves from LOS D to LOS B during the p.m. peak hour.
- The intersection of **D Street/Northern Avenue/Boston Fish Pier** improves from LOS C to LOS B during the p.m. peak hour.
- The intersection of **Congress Street/A Street/ Thomson Place** improves from LOS D to LOS C during the a.m. peak hour and improves from LOS E to LOS C during the p.m. peak hour.
- The intersection of **Congress Street/East Service Road** improves from LOS D to LOS C during the a.m. peak hour.
- The intersection of **Congress Street/B Street/Highway Ramps** improves from LOS F to LOS C during both the a.m. and p.m. peak hour.
- The intersection of **Congress Street/D Street** decreases from LOS C to LOS D during the a.m. peak hour and decreases from LOS E to LOS F during the p.m. peak hour.
- The intersection of **D Street/Summer Street** improves from LOS E to LOS C during the a.m. peak hour and improves from LOS E to LOS D during the p.m. peak hour.

Chapter 4.0

Environmental Protection

4.0 ENVIRONMENTAL PROTECTION

4.1 Wind

4.1.1 Introduction

A pedestrian wind study was conducted for the NPC Project. The purpose of the study was to assess the effect of the NPC Project on local conditions in pedestrian areas around the study site and provide recommendations for minimizing adverse effects.

The study involved wind simulations on a 1:500 scale model of the proposed buildings and surroundings. These simulations were then conducted in RWDI's boundary-layer wind tunnel at Guelph, Ontario, for the purpose of quantifying local wind speed conditions and comparing to appropriate criteria for gauging wind comfort in pedestrian areas. A list of the drawings used for the construction of the model can be found in Appendix B. The criteria recommended by the BPDA were used in the study. The report describes the study methods and presents the results of the wind tunnel simulations.

Generally, the wind conditions improved or stayed the same with the NPC Project in place. The Full Build Configuration results in improved overall wind conditions. In general, the wind speeds are appropriate for the intended uses. Almost 90% (vs 83% in the No Build) of the locations studied have wind speeds suitable for walking or better in the Full Build Configuration. This represents an improvement over the Project studied in the 2009 DPIR/DEIR as well which indicated that 88% of the locations studied had wind speeds suitable for walking or better.

4.1.2 Overview

Major buildings, especially those that protrude above their surroundings, often cause increased local wind speeds at the pedestrian level. Typically, wind speeds increase with elevation above the ground surface, and taller buildings intercept these faster winds and deflect them down to the pedestrian level. The funneling of wind through gaps between buildings and the acceleration of wind around corners of buildings may also cause increases in wind speed. Conversely, if a building is surrounded by others of equivalent height, it may be protected from the prevailing upper level winds, resulting in no significant changes to the local pedestrian level wind environment. The most effective way to assess potential pedestrian level wind impacts around a proposed new building is to conduct scale model tests in a wind tunnel.

The consideration of wind in planning outdoor activity areas is important since high winds in an area tend to deter pedestrian use. For example, winds should be light or relatively light in areas where people would be sitting, such as outdoor cafes or playgrounds. For bus stops and other locations where people would be standing, somewhat higher winds can be tolerated. For frequently used sidewalks, where people are primarily walking, stronger winds are acceptable. For infrequently used areas, the wind comfort criteria can be relaxed even further. The actual effects of wind can range from pedestrian inconvenience, due to the blowing of dust and other loose material in a moderate breeze, to severe difficulty with walking due to the wind forces on the pedestrian.

4.1.3 Methodology

Information concerning the site and surroundings was derived from: site photographs; information on surrounding buildings and terrain; and design drawings provided by the design team. The following configurations were simulated:

- **No Build Configuration:** includes the existing site and all existing surrounding buildings including portions of the Seaport Square Project already built; and,

- **Full Build Configuration:** includes the proposed Seaport Square development, the associated landscaping plan, future buildings and all existing surroundings. (The influence of the future buildings as indicated on Figures 4.1-7, 4.1-9 and 4.1-10) on the overall wind conditions at Seaport Square is anticipated to be negligible.)

As shown in Figures 4.1-1 and 4.1-2, the wind tunnel model included the proposed Project and all relevant surrounding buildings and topography within a 1,600 foot radius of the study site. The mean speed profile and turbulence of the natural wind approaching the modelled area were also simulated in RWDI's boundary layer wind tunnel. The scale model was equipped with 196 specially designed wind speed sensors that were connected to the wind tunnel's data acquisition system to record the mean and fluctuating components of wind speed at a full scale height of five feet above grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 wind directions, in 10 degree increments, starting from true north. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the reference wind speed in the free stream above the model. The results were then combined with long term meteorological data, recorded during the years 1991 to 2015 at Boston's Logan International Airport, in order to predict full scale wind conditions. The analysis was performed separately for each of the four seasons and for the entire year.

Figures 4.1-3 through 4.1-5 presents "wind roses", summarizing the seasonal and annual wind climates in the Boston area, based on the data from Logan Airport. The first wind rose in Figure 4.1-3, for example, summarizes the spring (March, April, and May) wind data. In general, the prevailing winds at this time of year are from the west northwest, northwest, west, southwest and south-southwest. In the case of strong winds (speeds greater than 20 mph, red bands), however, the most common wind directions are northeast and west-northwest.

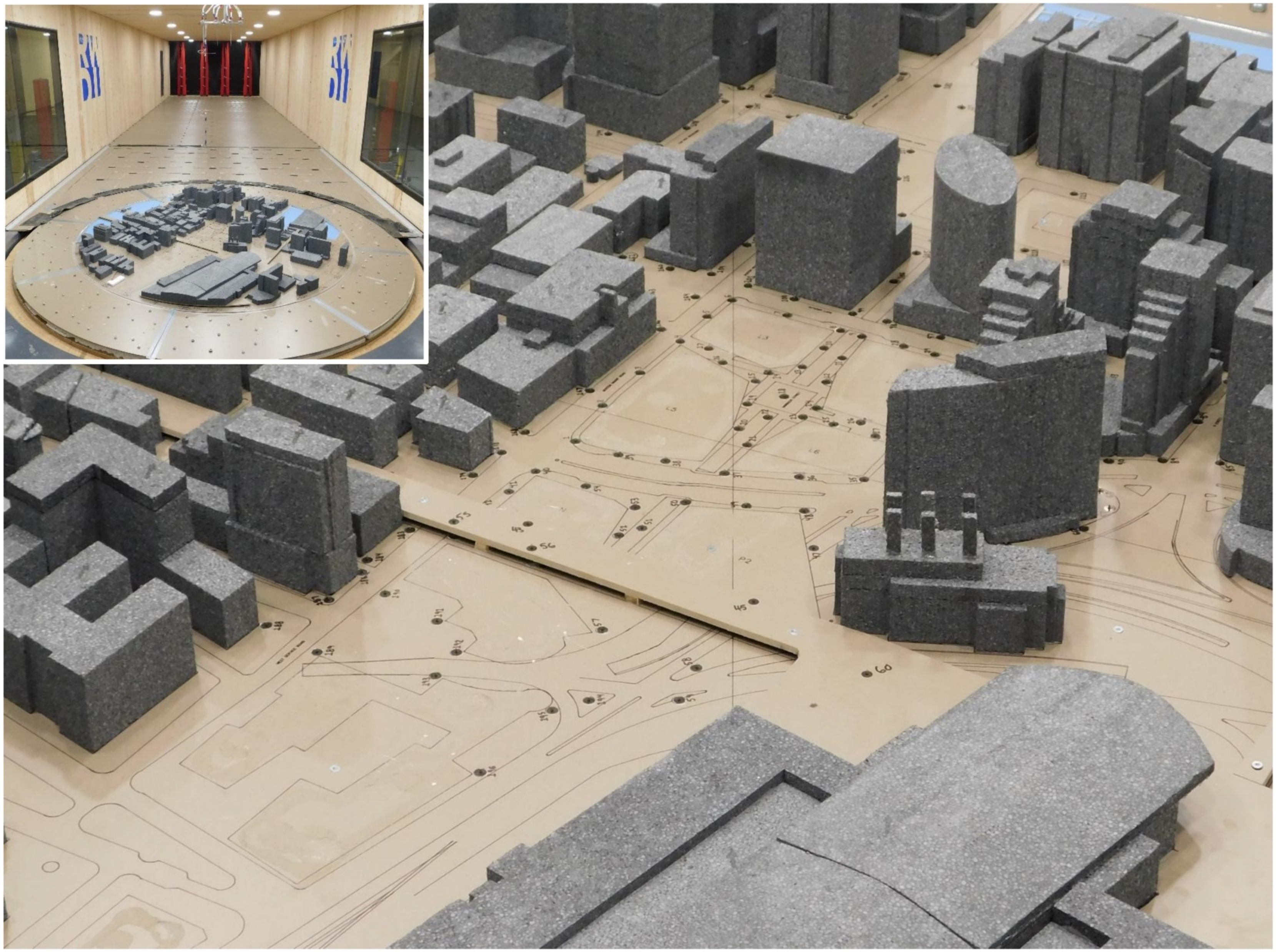


Figure 4.1-1

Wind Tunnel Study – No Build

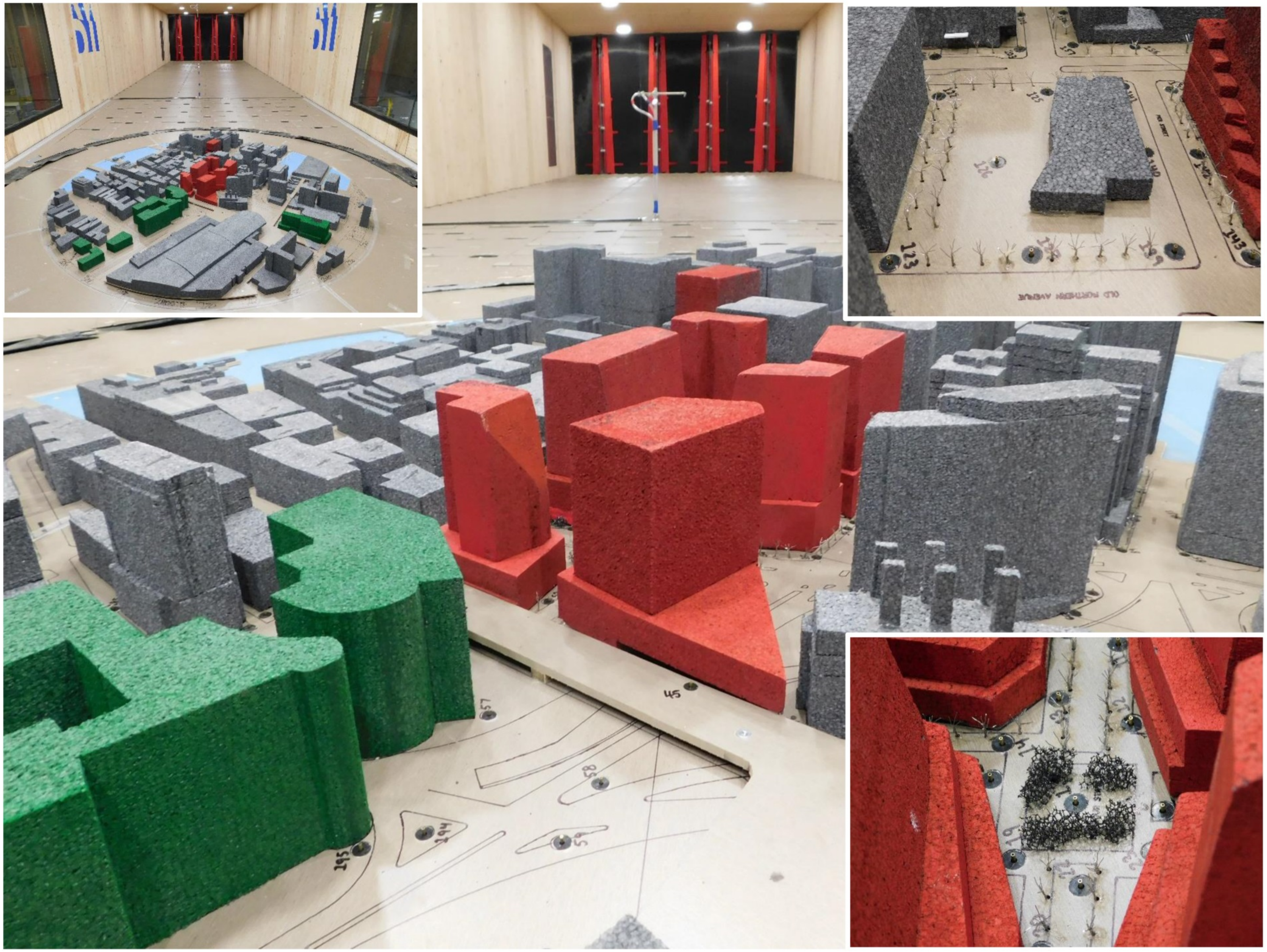
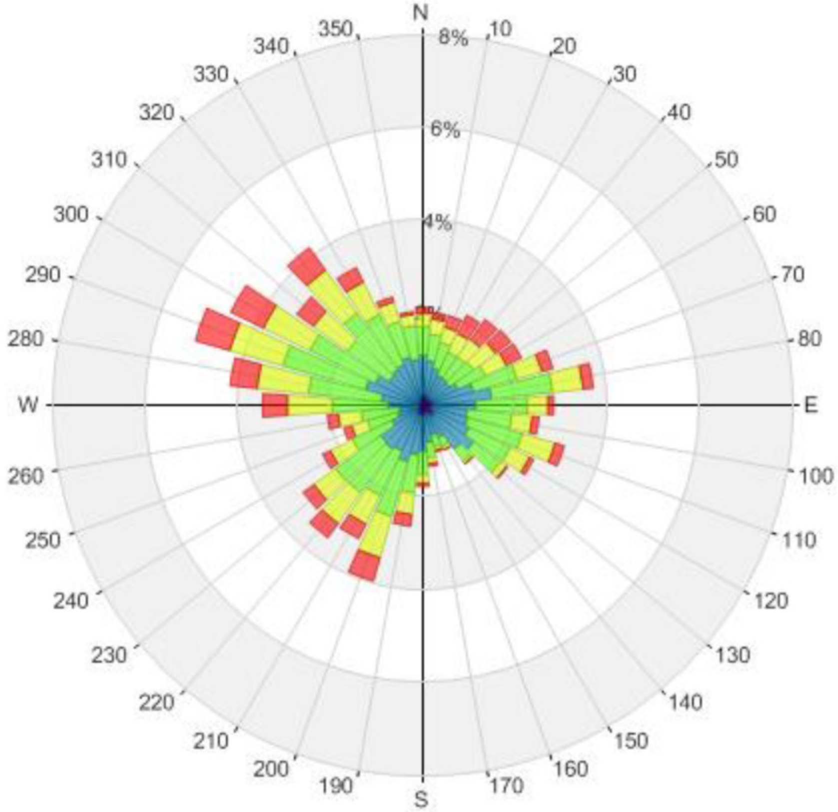
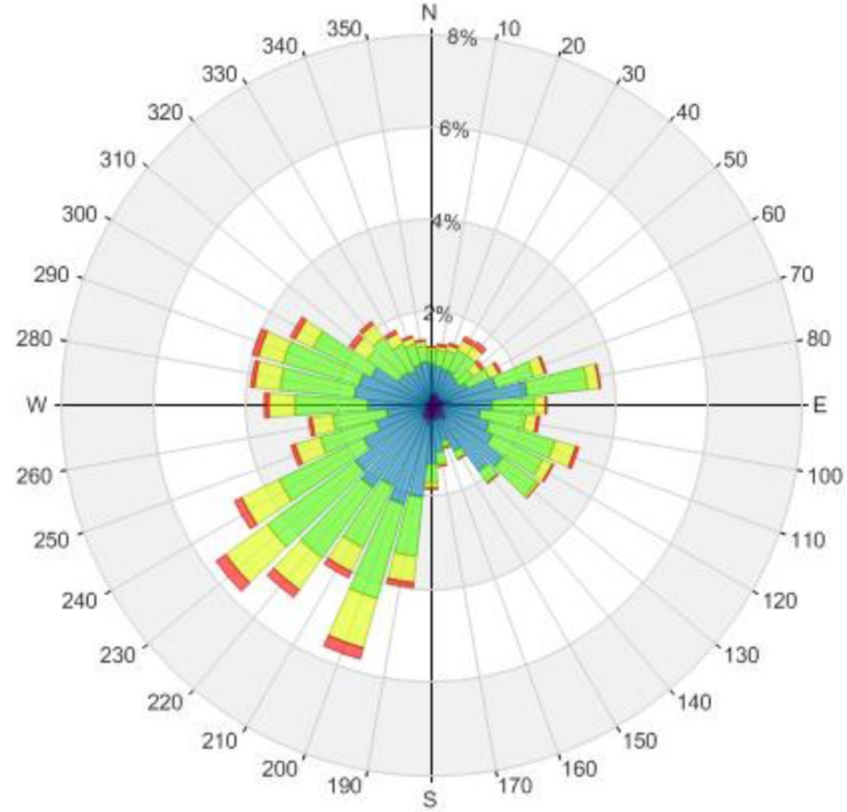


Figure 4.1-2

Wind Tunnel Study – Full Build



Spring
(March - May)

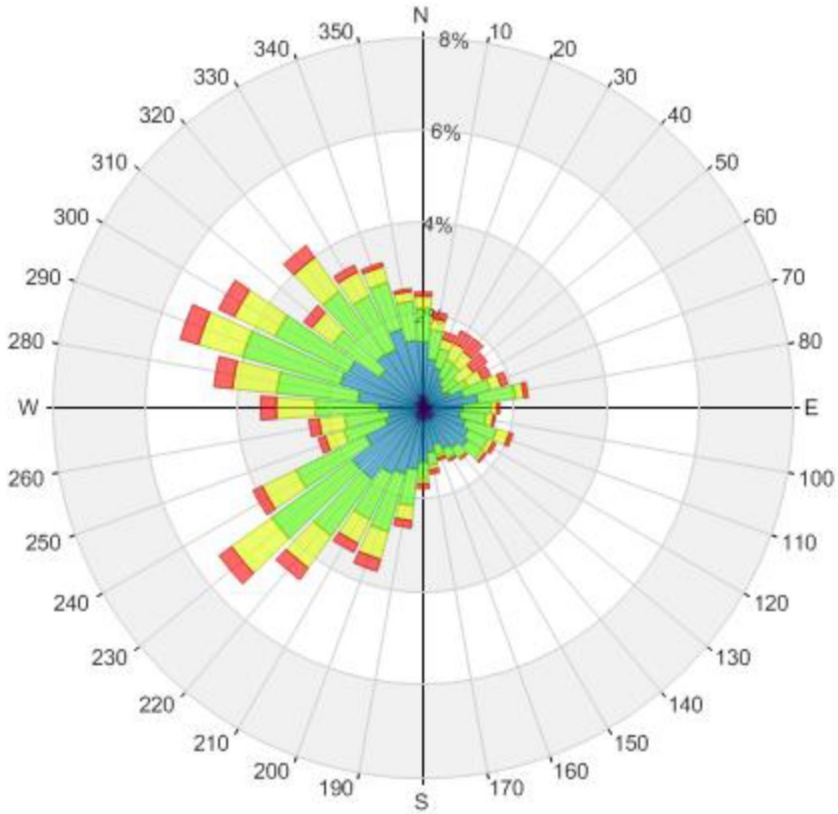


Summer
(June - August)

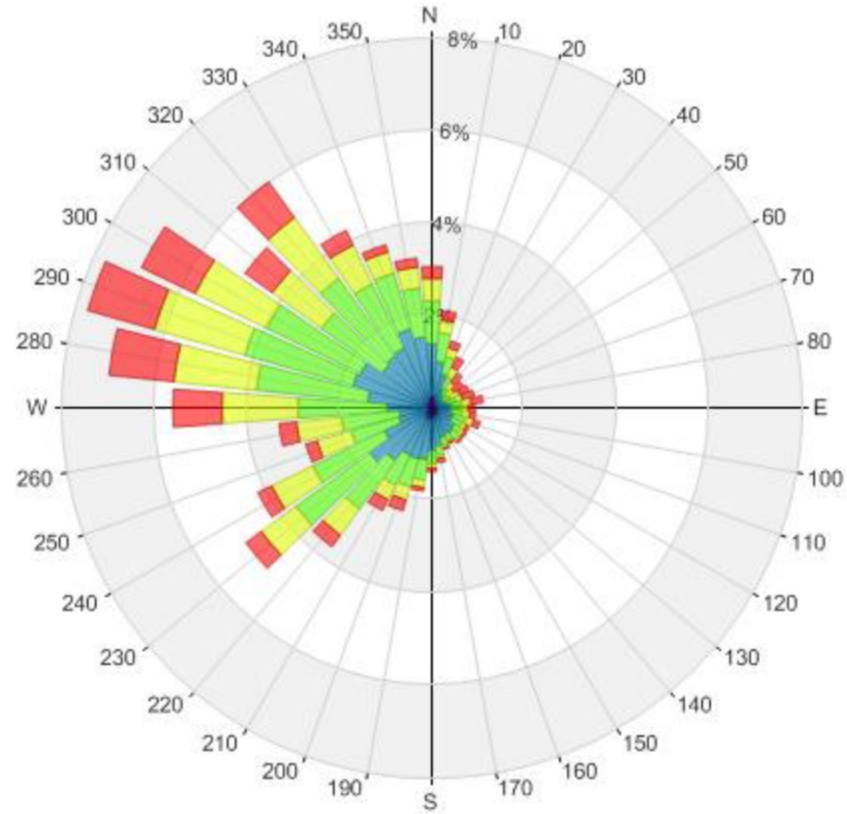
Wind Speed (mph)	Probability (%) Spring	Summer
Calm	2.4	2.7
1-5	6.4	8.9
6-10	28.5	38.1
11-15	32.9	35.1
16-20	19.7	12.6
>20	10.2	2.7

Figure 4.1-3

Directional Distribution (%) of Winds (Blowing From) Boston Logan International Airport (1991 – 2015)



Fall
(September - November)

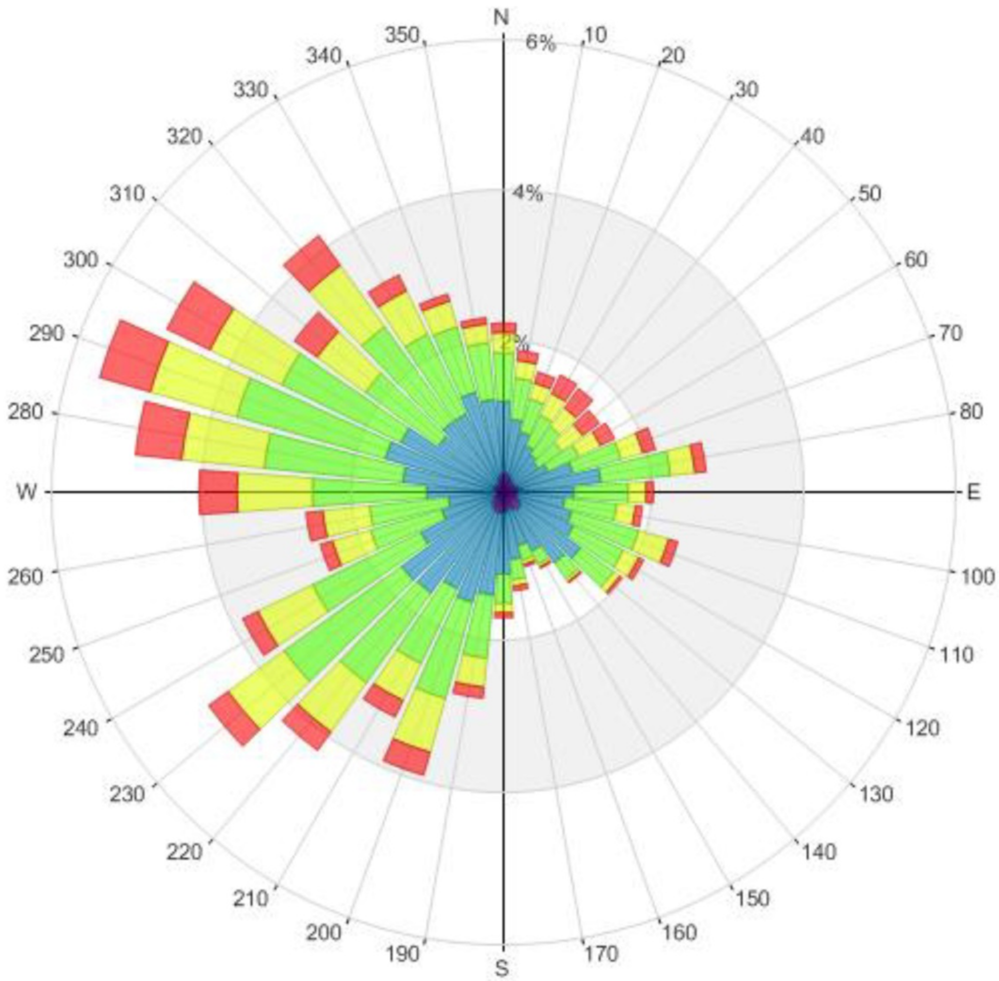


Winter
(December - February)

Wind Speed (mph)	Probability (%) Fall	Winter
Calm	2.9	2.3
1-5	8.0	6.2
6-10	34.3	27.5
11-15	32.8	31.1
16-20	15.3	20.1
>20	6.7	12.8

Figure 4.1-4

Directional Distribution (%) of Winds (Blowing From) Boston Logan International Airport (1991 – 2015)



Annual Winds

Wind Speed (mph)	Probability (%)
Calm	2.5
1-5	7.4
6-10	32.1
11-15	33.0
16-20	16.9
>20	8.1

Figure 4.1-5

Directional Distribution (%) of Winds (Blowing From) Boston Logan International Airport (1991 – 2015)

On an annual basis (the last wind rose in Figure 4.1-5) the most common wind directions are those between south-southwest and northwest. Winds from the east and east-southeast are also relatively common. In the case of strong winds, northeast and west-northwest are the dominant wind directions.

This study involved state of the art measurement and analysis techniques to predict wind conditions at the study site. Nevertheless, some uncertainty remains in predicting wind comfort. For example, the sensation of comfort among individuals can be quite variable. Variations in age, individual health, clothing, and other human factors can change a particular response of an individual. The comfort limits used in this report represent an average for the total population. Also, unforeseen changes in the Project area, such as the construction or removal of buildings, can affect the conditions experienced at the site. Finally, the prediction of wind speeds is necessarily a statistical procedure. The wind speeds reported are for the frequency of occurrence stated (one percent of the time). Higher wind speeds will occur but on a less frequent basis.

4.1.4 Pedestrian Wind Comfort Criteria

The BPDA has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BPDA wind design guidance criterion states that an effective gust velocity (hourly mean wind speed +1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than one percent of the time. The second set of criteria used by the BPDA to determine the acceptability of specific locations is based on the work of Melbourne[1]. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed). They are as follows:

Table 4.1-1 Boston Planning & Development Agency Mean Wind Criteria*

Level of Comfort	Wind Speed
Dangerous	> 27 mph
Uncomfortable for Walking	> 19 and ≤ 27 mph
Comfortable for Walking	> 15 and ≤ 19 mph
Comfortable for Standing	> 12 and ≤ 15 mph
Comfortable for Sitting	< 12 mph

* Applicable to the hourly mean wind speed exceeded one percent of the time.

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1 Melbourne, W.H., 1978, "Criteria for Environmental Wind Conditions", Journal of Industrial Aerodynamics, 3 (1978) 241 - 249.

The wind climate found in a typical downtown location in Boston is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the BPDA effective gust velocity criterion of 31 mph. However, without any mitigation measures, this wind climate is likely to be frequently uncomfortable for more passive activities such as sitting.

4.1.5 Test Results

Figures 4.1-6 through 4.1-9 graphically depict the wind comfort conditions at each wind measurement location based on the annual winds. Figure 4.1-10 shows the difference in the mean wind speeds between the No Build and Full Build configurations at each measurement location. Table 1 in Appendix B presents the mean and effective gust wind speeds for each season as well as annually. Typically, the summer and fall winds tend to be more comfortable than the annual winds, while the winter and spring winds are less comfortable than the annual winds. The following summary of pedestrian wind comfort is based on the annual winds for each configuration tested, except where noted below in the text.

4.1.5.1 Seaport Square Development (Locations 1 through 54)

The discussion in this section pertains to the perimeter and walkways between the proposed buildings represented by 54 wind measurement locations numbered 1 through 54. A wind comfort categorization of walking is considered appropriate for sidewalks. Lower wind speeds conducive to standing are preferred at building entrances.

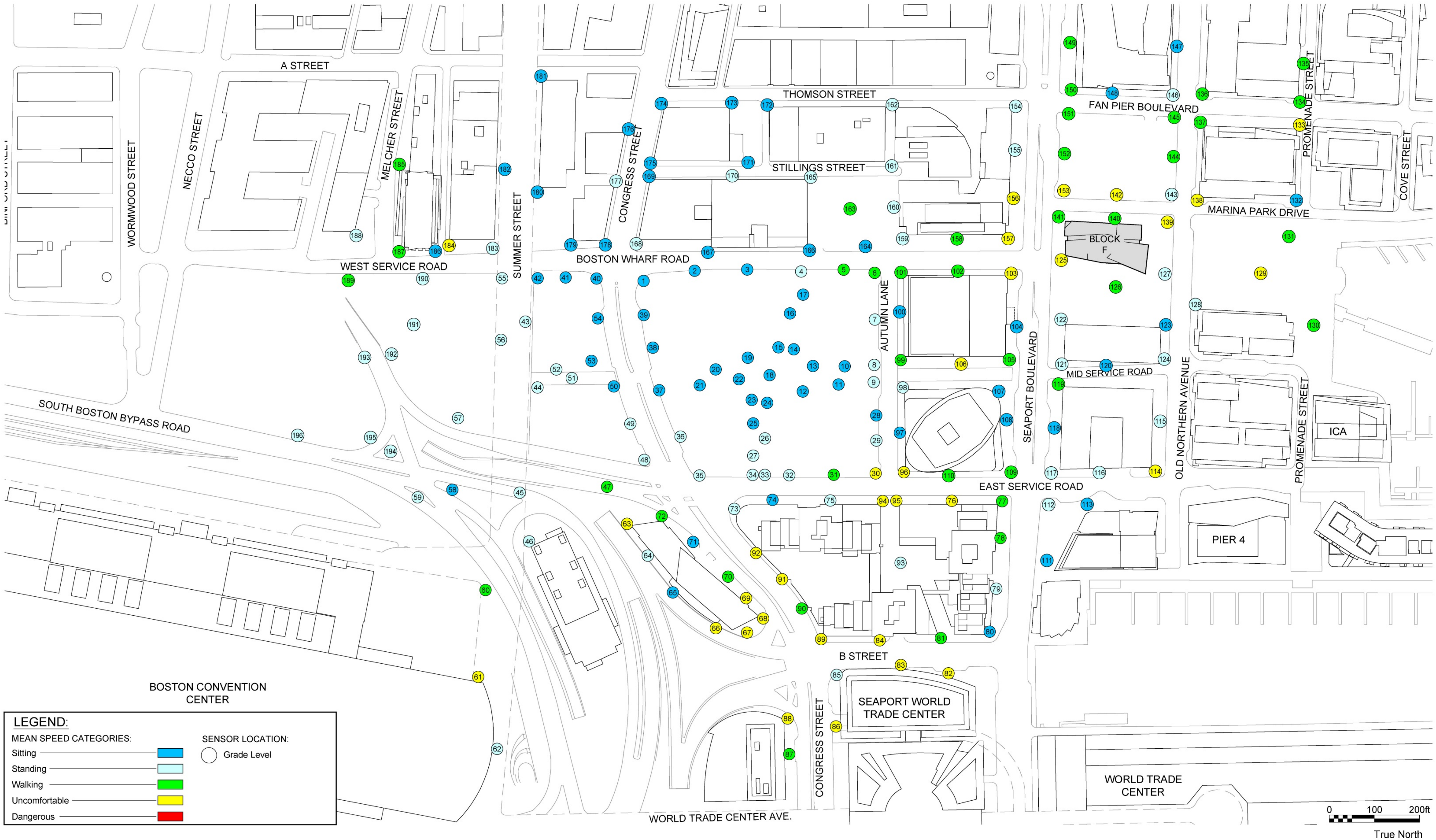
4.1.5.1.1 Comfort Criteria

No Build Configuration

Aside from the intersection of East Service Road and Autumn Lane (Location 30 in Figure 4.1-6), wind conditions comfortable for walking or better characterize the existing area where the Seaport Square Project is proposed (Locations 1 through 29 and 31 through 54 in Figure 4.1-6).

Full Build Configuration

The addition of the proposed NPC Blocks (D, F G, L3, L4, L5, L6, N and P), other future buildings and associated landscaping plan would result in wind speeds that either stayed the same or improved at 33 of the 54 locations studied. Wind speeds would increase at 21 of the 54 locations studied.

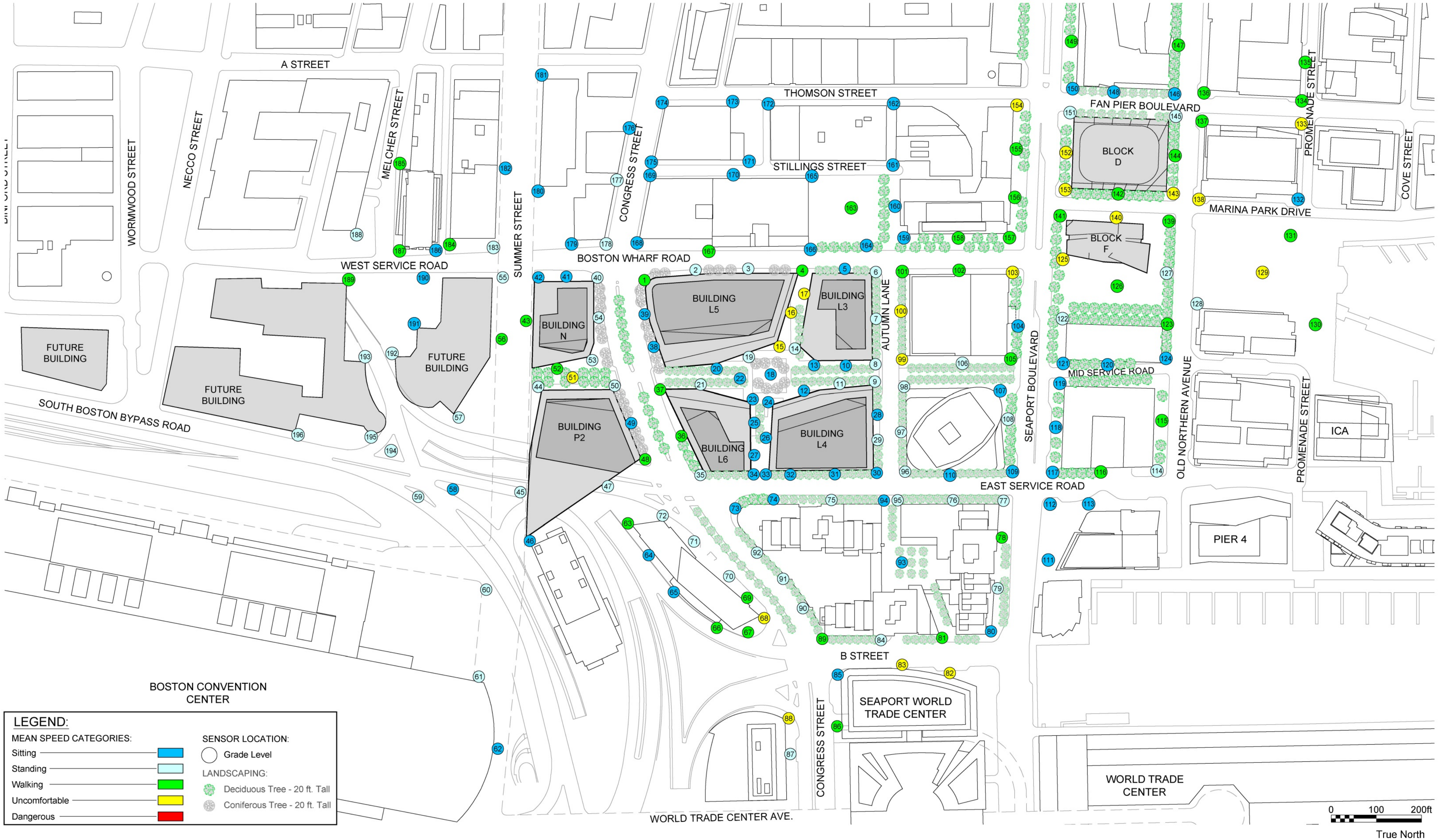


Seaport Square Boston

SEAPORT

Figure 4.1-6

Pedestrian Wind Conditions – Mean Speed – No Build (Annual)

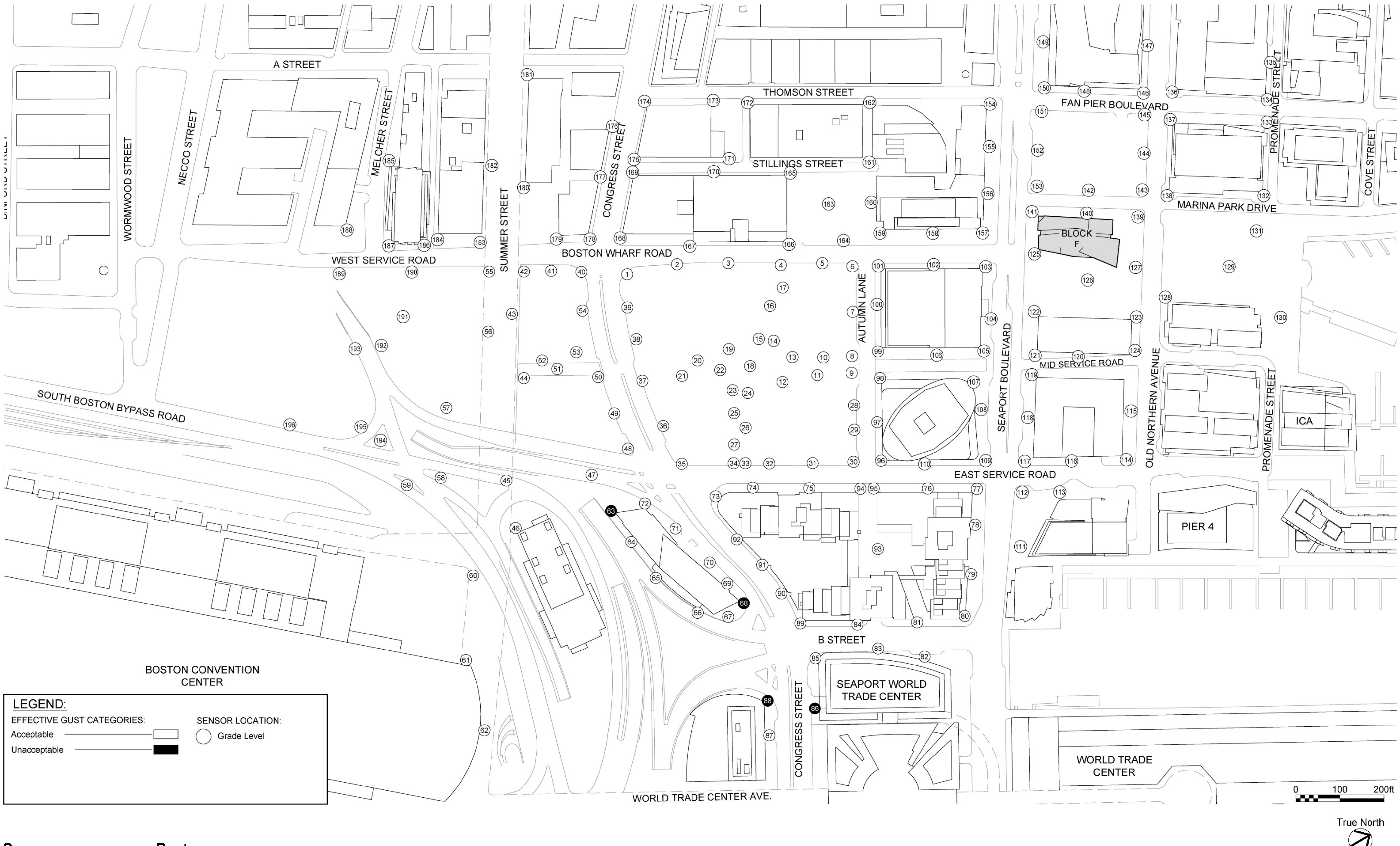


Seaport Square **Boston**

SEAPORT

Figure 4.1-7

Pedestrian Wind Conditions – Mean Speed -- Full Build (Annual)



Seaport Square **Boston**

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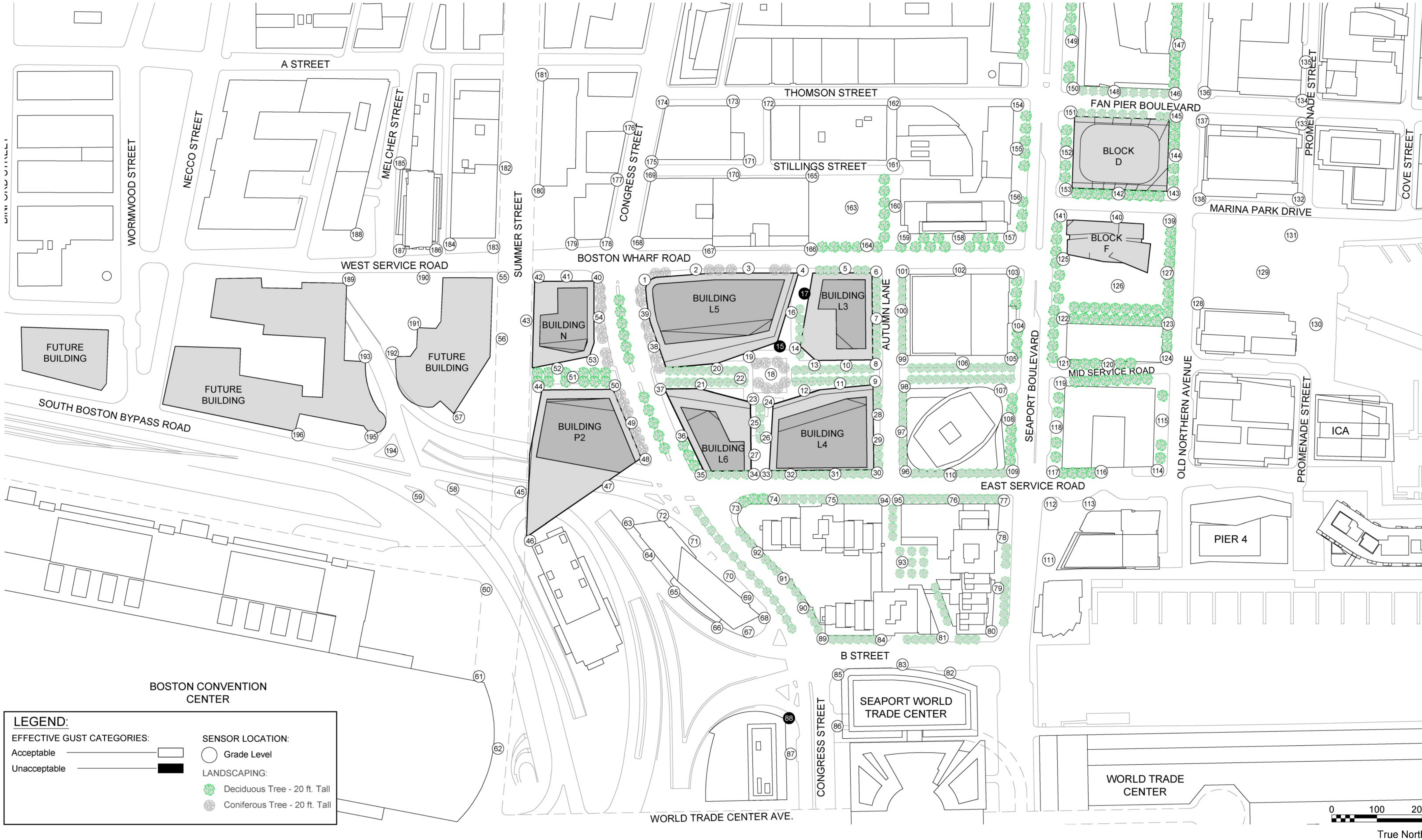
Figure 4.1-8

Pedestrian Wind Conditions – Effective Gust – No Build (Annual)



Seaport Square **Boston**

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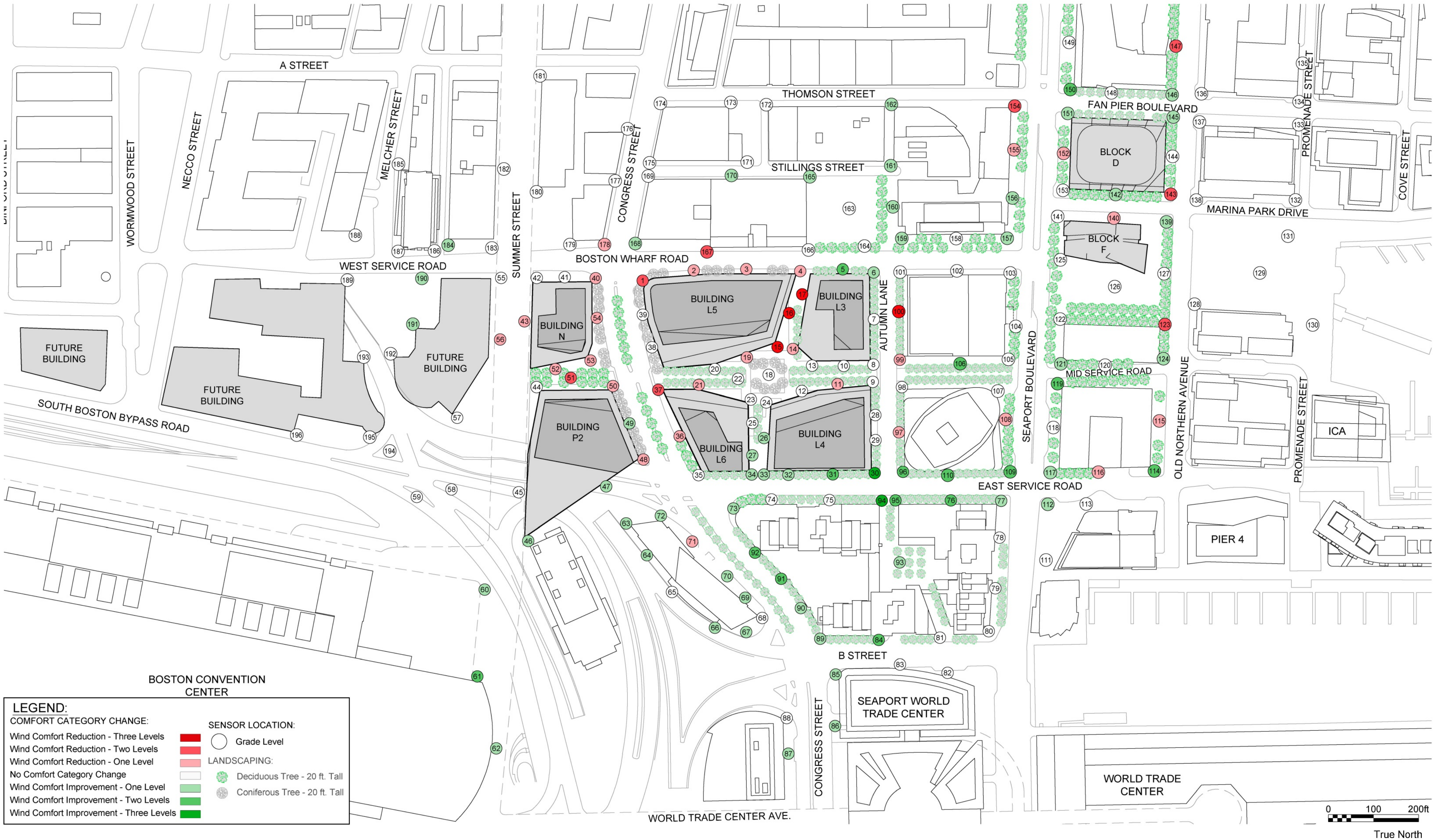
Figure 4.1-9

Pedestrian Wind Conditions – Effective Gust – Full Build (Annual)



Seaport Square **Boston**

SEAPORT

Figure 4.1-10

Pedestrian Wind Conditions – Comfort Category Change – No Build to Full Build (Annual)

Locally, wind speeds would be improved by two or three comfort categories at the eastern portion of the site due to the protection offered by the buildings from westerly winds (Locations 30 and 31 in Figure 4.1-7). Wind conditions comfortable for walking or better are expected at all locations around the proposed Project except for the corridors between Buildings L3 and L5 and between Buildings N and P (Locations 15 through 17 and 51 in Figure 4.1-7).

The effective gust criterion is met seasonally and annually at all locations except for the corridor between Buildings L3 and L5 (Locations 15 and 17) in Figure 4.1-9.

Mitigation such as the addition of coniferous/marcescent trees and/or a series of porous wind screens in the corridor between Buildings L3 and L5and between Buildings N and P is being considered. Potential mitigation will be determined through the design review process as individual buildings within the NPC Project Site are designed.

4.1.5.2 Area Surrounding the Proposed Seaport Square Project (Locations 55 through 196)

The discussion in this section pertains to the area surrounding the proposed Project, represented by 142 wind measurement locations numbered 55 through 196.

No Build Configuration

The pedestrian wind conditions in the area surrounding the proposed Seaport Square Project are generally comfortable for walking or better west and south of the Project. Uncomfortable wind conditions are relatively frequent to the east and north of the Project.

The effective gust criterion is exceeded annually at three locations along Congress Street (Locations 68, 86 and 88 in Figure 4.1-8) and at one location just south of Congress Street (Location 63 in Figure 4.1-8).

Full Build Configuration

In the areas surrounding the Project Site, wind comfort conditions are expected to improve overall with the addition of the proposed Seaport Square Project, associated landscaping plan and additional future buildings. The additional buildings and landscaping would result in wind speeds that either stayed the same or improved at 125 of the 142 locations studied (88 %). Wind speeds would increase at only 17 of the 142 locations studied (less than 12%).

The Seaport Square buildings would improve wind comfort conditions from being uncomfortable in the No Build Configuration to being comfortable for walking or better in the Full Build Configuration at 21 locations (Locations 61, 63, 66, 67, 69, 76, 84, 86, 89, 91, 92, 94 through 96, 106, 114, 139, 142, 156, 157 and 184 in Figure 4.1-7) and worsen wind comfort conditions to being uncomfortable at six locations (Locations 99, 100, 140, 143, 152 and 154 in Figure 4.1-7). The net effect is an improvement in the overall wind conditions. Of the 142 locations, less than 80% are suitable for walking or better in the No Build Configuration. Conditions improve in the Full Build Configuration and of the 142 locations, almost 89% are suitable for walking or better.

The effective gust criterion would be met annually at all locations but one along Congress Street (Location 88 in Figure 4.1-9). This location currently exceeds the gust criterion in the No Build scenario (Location 88 in Figure 4.1-8). The addition of the proposed and future buildings is expected to reduce the effective gust speed at this location, however, the resulting speed would still be higher than the effective gust criterion. As noted above, the No Build configuration resulted in three exceedances. Again, the number of exceedances has been reduced in the Full Build and the net effect is an improvement in the overall wind conditions.

4.1.6 Conclusion

Generally, the wind conditions improved or stayed the same with the NPC Project in place. The Full Build Configuration results in improved overall wind conditions. In general, the wind speeds are appropriate for the intended uses. Approximately 80 % of the locations studied had wind speed categories that improved or did not change from the No Build to Full Build Configuration. Almost 90% (vs 83% in the No Build) of the locations studied have wind speeds suitable for walking or better in the Full Build Configuration (vs 88% in the 2009 DPIR/DEIR). The number of locations with unacceptable gust winds speeds was reduced with the Full Build Configuration. No locations have dangerous wind speeds in the Full Build Configuration.

4.2 Shadow

4.2.1 Introduction and Methodology

A shadow impact analysis was conducted to investigate shadow impacts from the Project during three time periods (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the vernal equinox (March 21), summer solstice (June 21), autumnal equinox (September 21), and winter solstice (December 21). In addition, shadow studies were conducted for the 6:00 p.m. time period during the summer solstice and autumnal equinox.

The shadow analysis presents the existing shadow and new shadow that would be created by the NPC Project, illustrating the incremental impact of the NPC Project. The analysis focuses on nearby open spaces, sidewalks and bus stops adjacent to and in the vicinity of the Project Site. Shadows have been determined using the applicable Altitude and Azimuth data for Boston. Figures showing the net new shadow from the NPC Project are provided in Figures 4.2-1 to 4.2-14, at the end of this section.

4.2.2 Vernal Equinox (March 21)

At 9:00 a.m. during the vernal equinox, shadows will be cast to the northwest, with new shadow from the NPC Project mostly limited to rooftops across Boston Wharf Road, Stillings Street, and Thomson Place. Small patches of new shadow will fall next to existing shadow on Congress Street and Summer Street and on Seaport Boulevard at Block B.

Because of the proposed changes to the Project, some areas that were in shadow due to the 2010 Project will no longer be in shadow. Portions of the shadows previously proposed have been eliminated along Seaport Boulevard at Blocks B, C, D, and F, on Congress Street near Stillings Street, and on Summer Street near A Street and on some of the proposed and existing open spaces.

At 12:00 p.m., shadows will be cast to the north, with new shadow from the NPC Project limited to the Project Site. The NPC Project will cast additional shadow onto both Harbor Square (the open space proposed to be built internal to Blocks L3 through L6), and Seaport Common (the open space at Block F), and Sea Green (the new open space at Block Q).

The new shadow on Sea Green and Seaport Common are offset by shadows that have been eliminated with the NPC Project. Other areas no longer proposed to be in shadow include portions of Blocks G, L1, and L5. Shadows cast by buildings on Block N and P have been made substantially narrower.

At 3:00 p.m., shadows will be cast to the northeast, with slivers of new shadow from the NPC Project cast roughly parallel to existing shadow along Harbor Way and Pier 4 Boulevard. New shadow from Block F will cross Northern Avenue.

The area of new shadow on Harbor Way is more than offset by the shadow that has been eliminated with the NPC Project. In addition, buildings on Block D, F, and G will cast narrower shadows than were previously studied, and a portion of the previously proposed shadow on Seaport Common will be eliminated.

4.2.3 Summer Solstice (June 21)

At 9:00 a.m. during the summer solstice, shadows will be cast to the west, with new shadow from the NPC Project cast across Boston Wharf Road. A small area of new shadow reaches Congress Street near Stillings Street, and slivers of new shadow fall on Summer Street and Seaport Boulevard. There are new shadows on Harbor Square, Seaport Common, and Sea Green.

Under the NPC Project, previously-studied shadows on Seaport Common and Harbor Square have been lessened, as have shadows on Congress Street, Summer Street, and Seaport Boulevard.

At 12:00 p.m., shadows will be cast to the north, with new shadow from the NPC Project cast across portions of Boston Wharf Road, Northern Avenue and Thomson Place. Slivers of shadow are cast onto and across Summer Street, and patches of new shadow fall on Harbor Square, Seaport Common, and Sea Green.

Because of changes to the Project, shadows cast on Seaport Common and Harbor Way have been lessened, as have shadows on Congress Street and Boston Wharf Road.

At 3:00 p.m., shadows will be cast to the northeast, with new shadow from the NPC Project cast onto Northern Avenue, Pier 4 Boulevard, and Congress Street. New shadow is cast on Harbor Square.

Shadows on Seaport Common, Harbor Square, and Harbor Way and shadows cast by buildings on Blocks N and P have been reduced from the 2010 Project.

At 6:00 p.m., shadows will be cast to the southeast, with minor new shadow from the NPC Project cast between Blocks L4 and L6, onto Block L2, across Pier 4 Boulevard onto Blocks M1 and M2, and onto Congress Street near the highway ramps.

Changes to the Project result in reduced new shadow on Seaport Common, on Congress Street near Blocks L5, L6, N, and P, and on the highway ramps.

4.2.4 Autumnal Equinox (September 21)

At 9:00 a.m. during the autumnal equinox, shadows will be cast to the northwest, with minimal new shadow from the NPC Project cast across Boston Wharf Road and Stillings Street, onto Sea Green, and onto the edge of Summer Street.

Because of changes to the Project, shadows have been reduced on certain areas of Congress Street and Harbor Square which were previously proposed to be in shadow.

At 12:00 p.m., shadows will be cast to the north, with new shadow from the NPC Project cast across Boston Wharf Road, onto Sea Green, onto Blocks K, L1 and L2, and onto Harbor Square.

Shadow has been eliminated from portions of Seaport Common, Harbor Square, and Sea Green, as well as from portions of Northern Avenue, Boston Wharf Road, and Congress Street.

At 3:00 p.m., shadows will be cast to the northeast, with new shadow from the NPC Project cast onto Harbor Square, onto Blocks L1 through L4, onto Congress Street and the highway ramps near Block P, and across Northern Avenue near Block F.

Portions of Seaport Common and Harbor Square that were previously proposed to be in shadow will, under the NPC Project, be in daylight. The NPC also results in less shadow on Congress Street at Blocks N and P than the 2010 Project.

At 6:00 p.m., most of the area is under existing shadow. A small portion of new shadow from the NPC Project will be cast to the east onto Northern Avenue near Block F, onto Blocks M1 and M2, and onto the highway ramps near Block P.

The shadow at highway ramps has been reduced with the NPC Project.

4.2.5 Winter Solstice (December 21)

The winter solstice creates the least favorable conditions for sunlight in New England. The sun angle during the winter is lower than in any other season, causing the shadows in urban areas to elongate and be cast onto large portions of the surrounding area.

At 9:00 a.m., shadows will be cast to the northwest, with new shadow from the NPC Project cast across Boston Wharf Road, Stillings Street, and Thomson Place to Fransworth Street, primarily on rooftops with very limited new shadow on streets or sidewalks.

Because of the changes proposed in the NPC Project, areas on both sides of Thomson Place will not be in shadow, nor will slivers along Congress Street and Northern Avenue.

At 12:00 p.m., shadows will be cast to the north, with new shadow from the NPC Project cast across Boston Wharf Road, and onto Seaport Common and Fan Pier Park.

Portions of the shadows on Congress Street and Boston Wharf Road previously proposed will be eliminated, as will a patch on Northern Avenue near Block D.

At 3:00 p.m., shadows will be cast to the northeast, with new shadow from the NPC Project cast onto Congress Street and the highway ramps near Block P and onto Block M2.

An area of shadow has been eliminated from the site opposite Block G.

4.2.6 Conclusions

New shadow from the NPC Project will generally be limited to the Project Site. In only one case of the 14 studied, will new shadow be created on a bus stop and in only one of the 14 cases studied will new shadow be created on an off-site public open space (Fan Pier Park). In several cases, shadows have been reduced on Fan Pier Park from the 2010 Project. New shadows are partially offset by the Proponent's success at reducing the area of previously proposed shadow.

Existing shadows*

New shadow

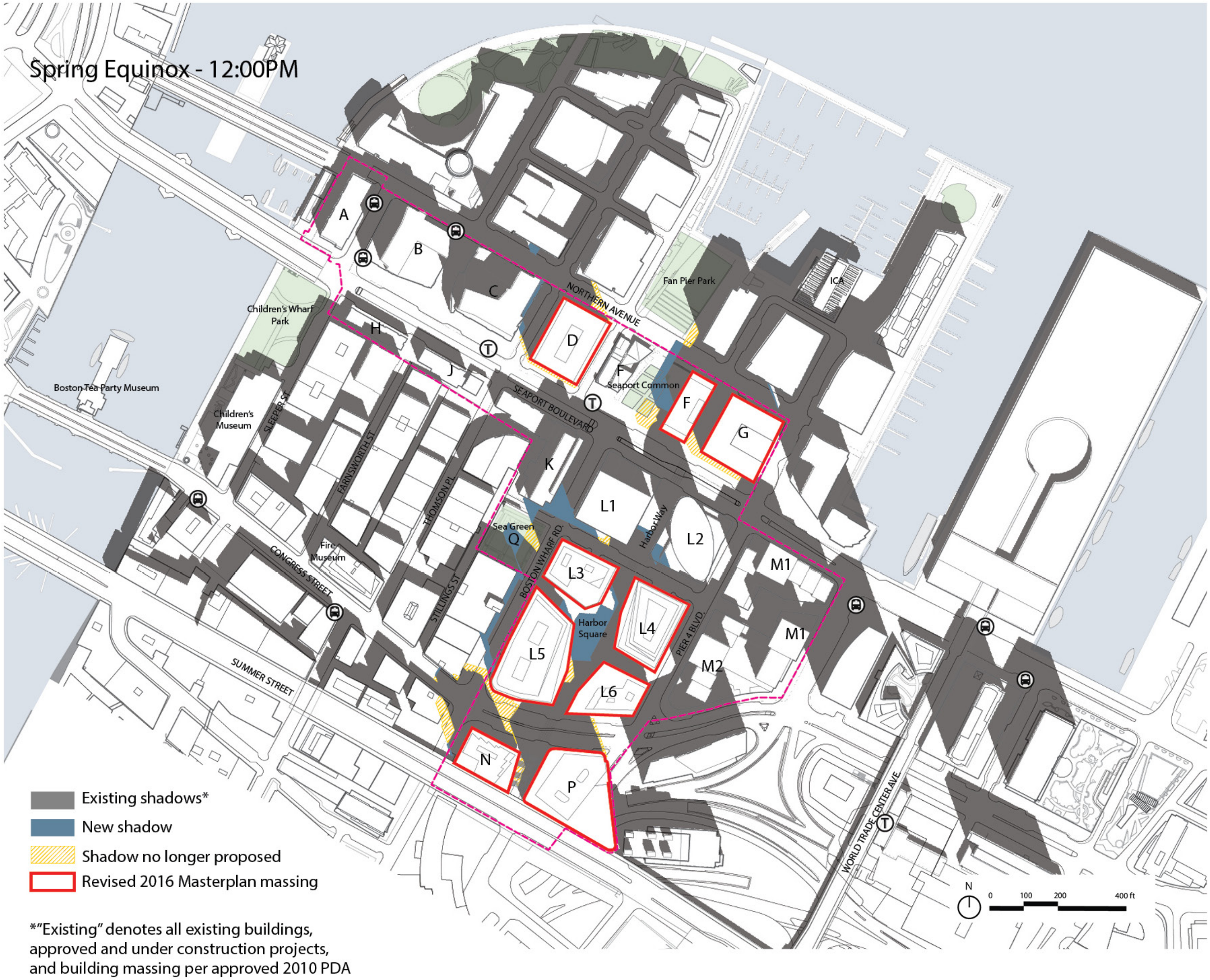
Shadow no longer proposed

Revised 2016 Masterplan massing

*"Existing" denotes all existing buildings, approved and under construction projects, and building massing per approved 2010 PDA

Figure 4-2.1

Shadow Study: Spring Equinox, 9 a.m.



Seaport Square Boston, Massachusetts

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Figure 4-2.2

Shadow Study: Spring Equinox, 12 p.m.

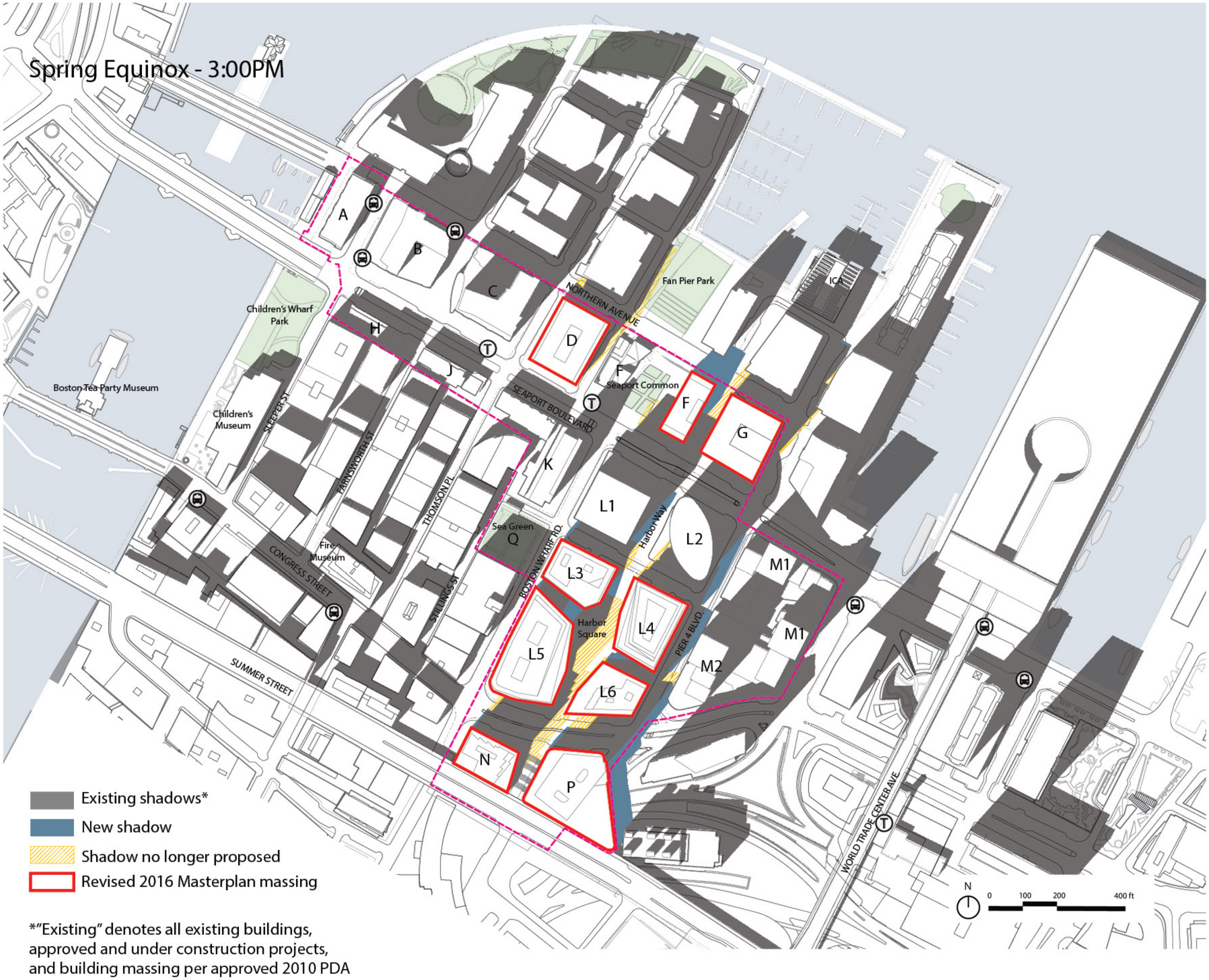


Figure 4.2-3

Shadow Study: Spring Equinox, 3 p.m.

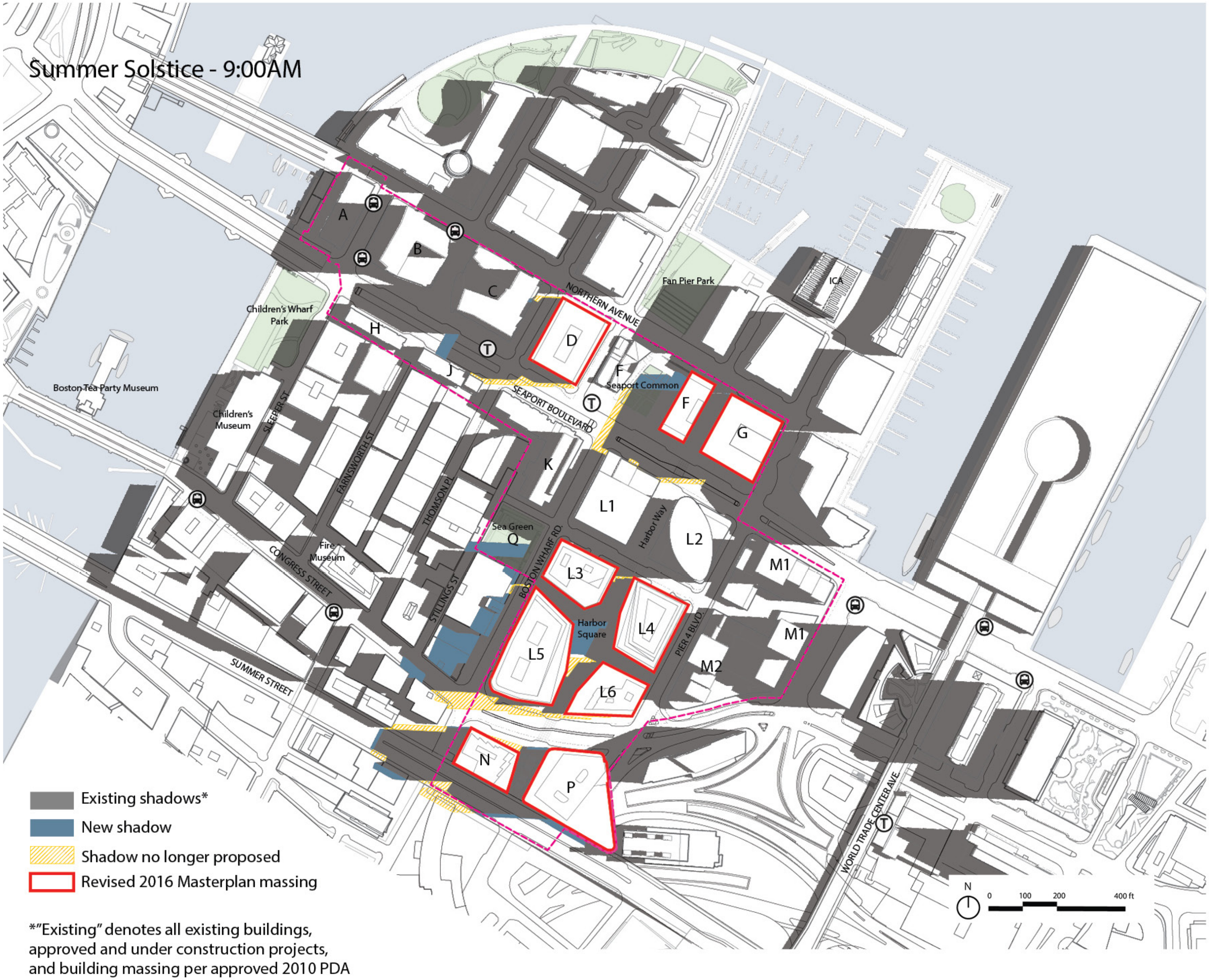
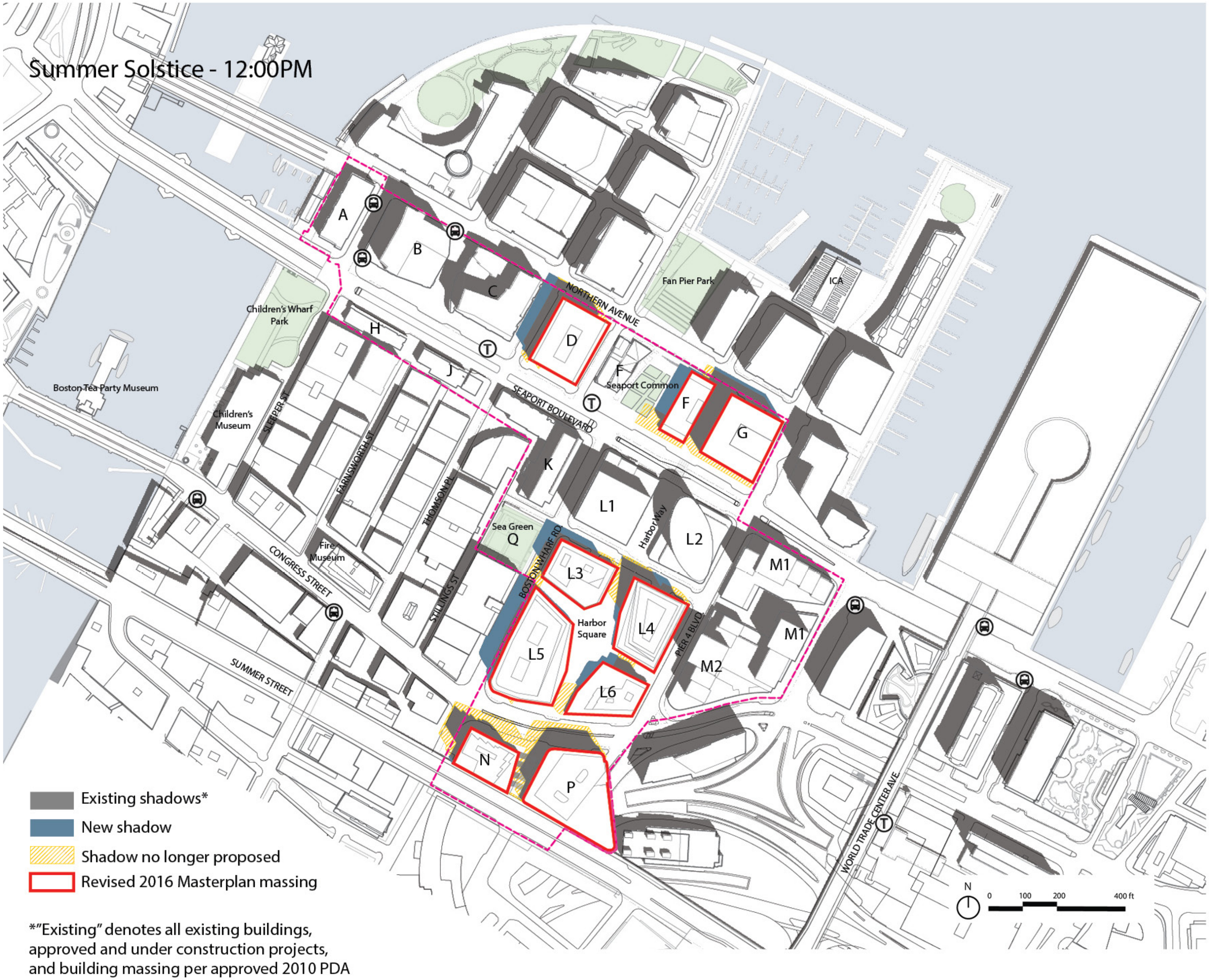


Figure 4-2.4

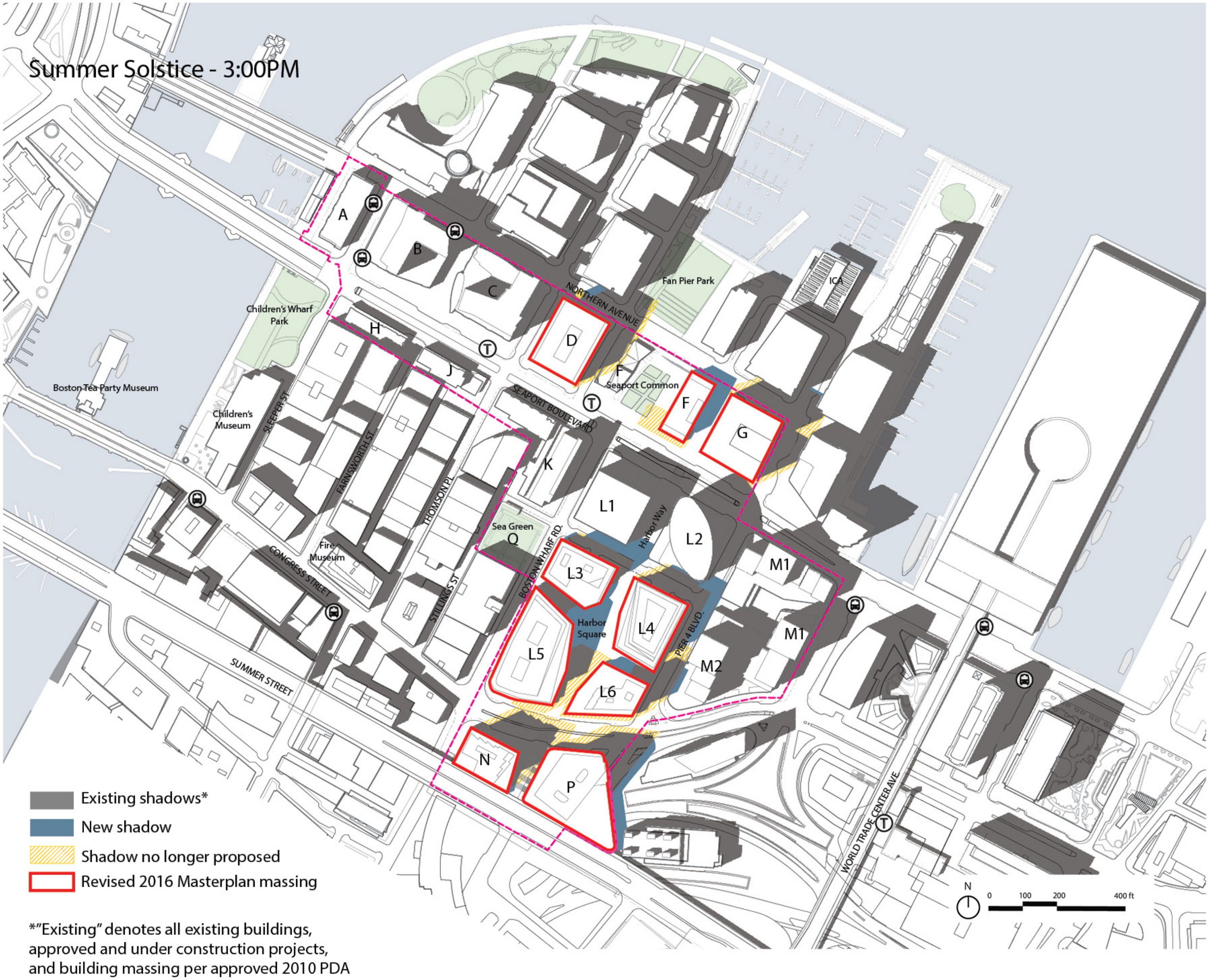
Shadow Study: Summer Solstice, 9 a.m.



Seaport Square   Boston, Massachusetts

Figure 4-2.5

Shadow Study: Summer Solstice, 12 p.m.



Seaport Square Boston, Massachusetts

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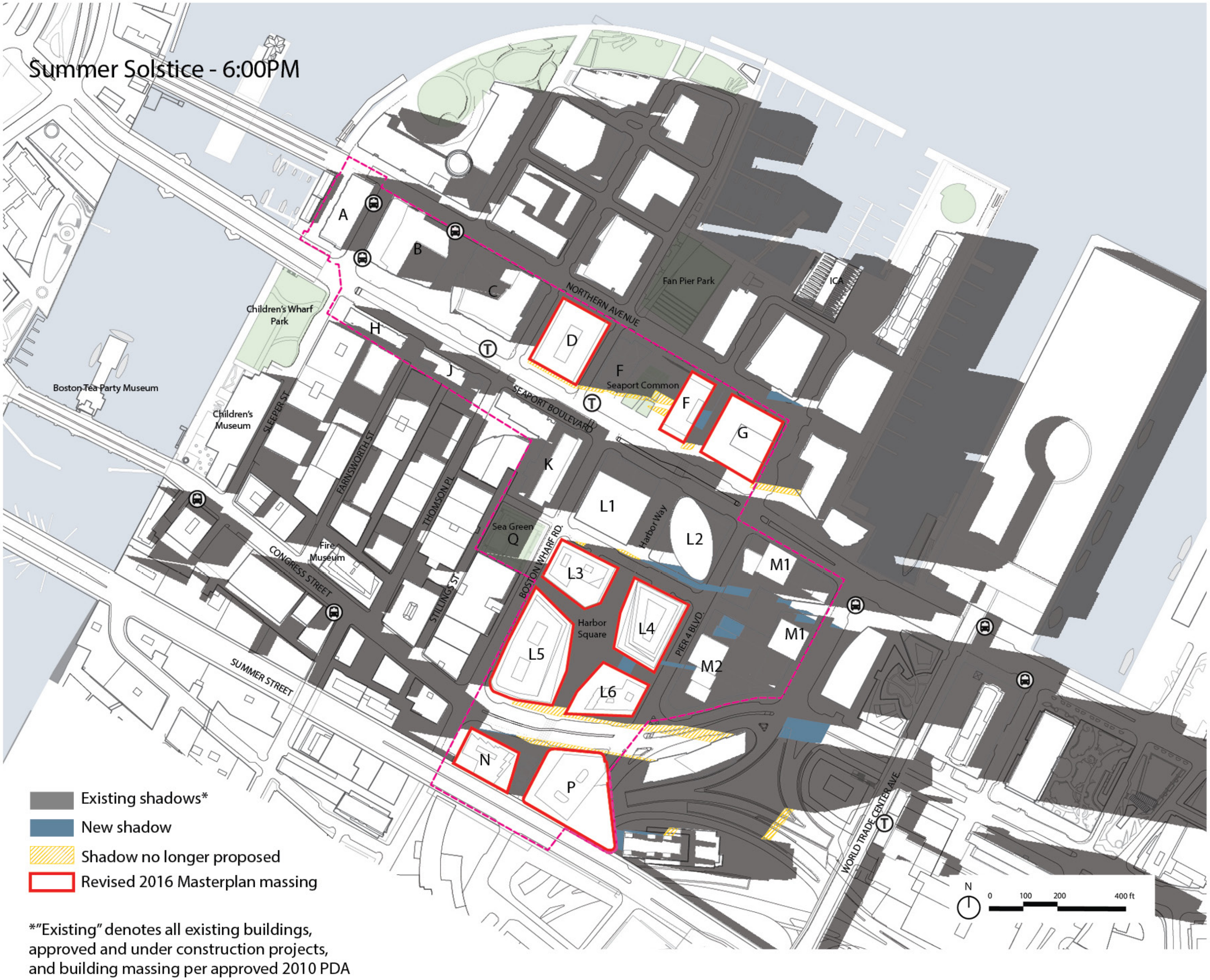
Figure 4-2.6

Shadow Study: Summer Solstice, 3 p.m.



Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 4-2.7

Shadow Study: Summer Solstice, 6 p.m.

Seaport Square Boston, Massachusetts

SEAPORT

Figure 4-2.8

Shadow Study: Fall Equinox, 9 a.m.

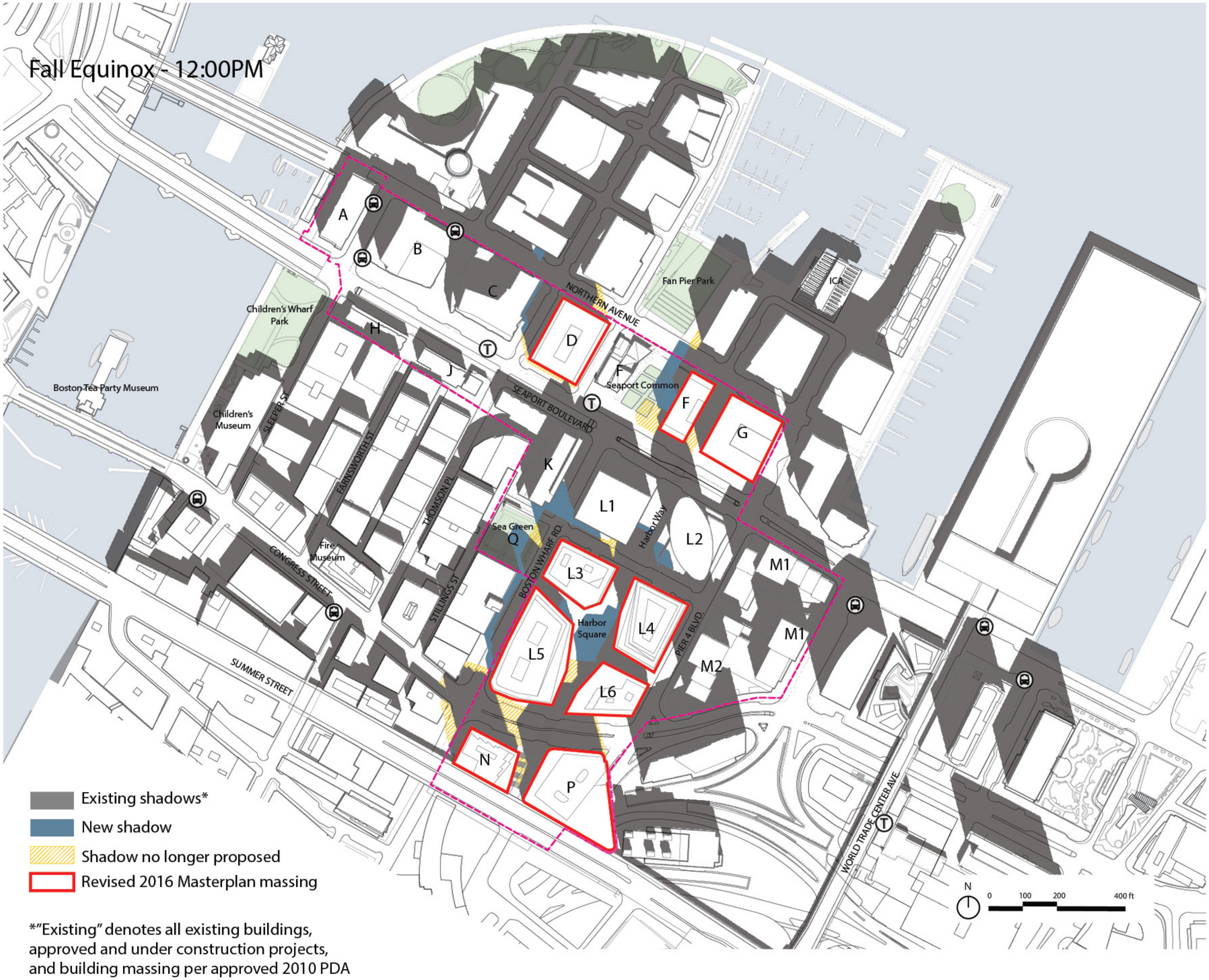
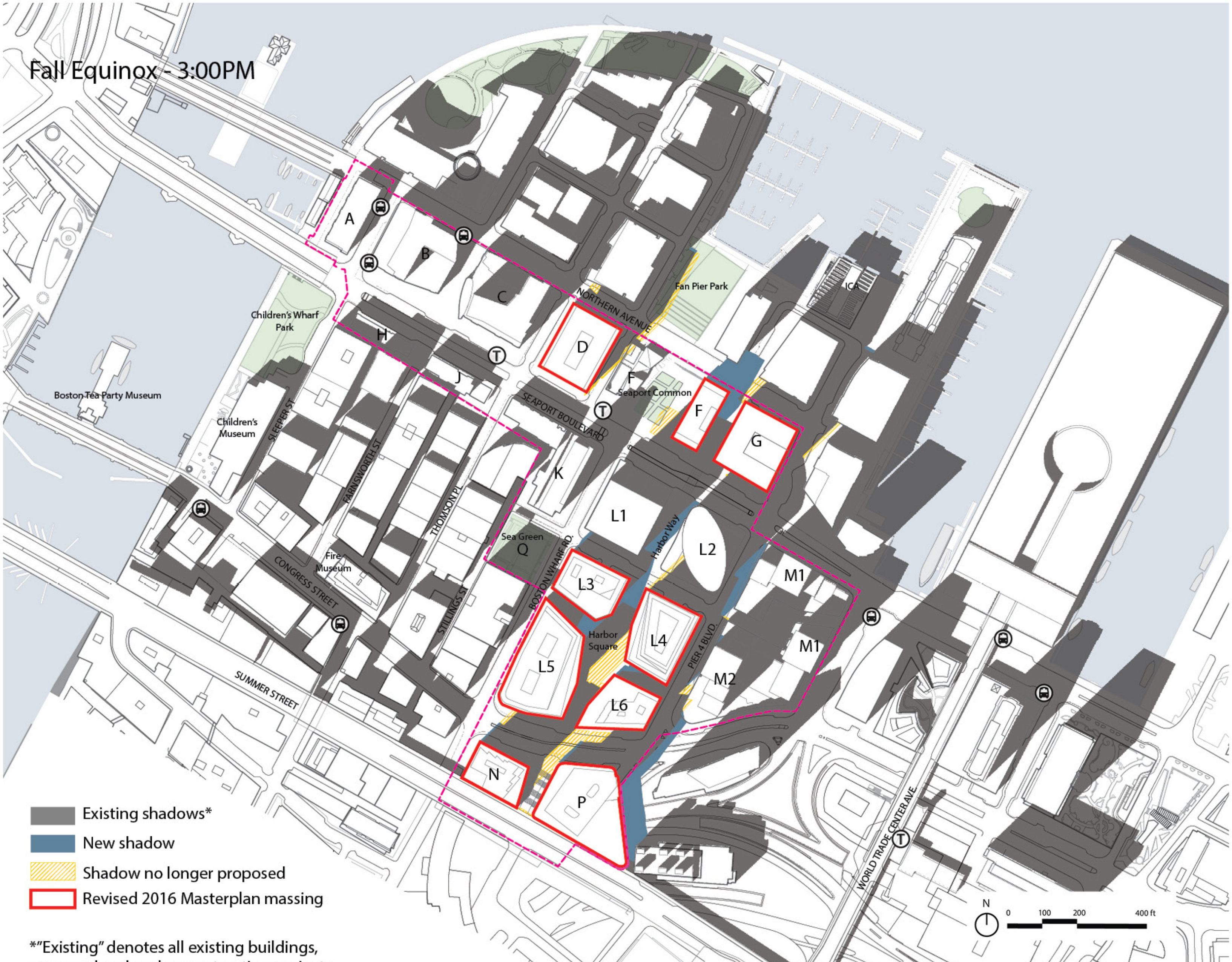


Figure 4-2.9

Shadow Study: Fall Equinox, 12 p.m.



*"Existing" denotes all existing buildings, approved and under construction projects, and building massing per approved 2010 PDA

Seaport Square Boston, Massachusetts

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Figure 4-2.10

Shadow Study: Fall Equinox, 3 p.m.

Seaport Square Boston, Massachusetts

SEAPORT

Figure 4-2.11

Shadow Study: Fall Equinox, 6 p.m.

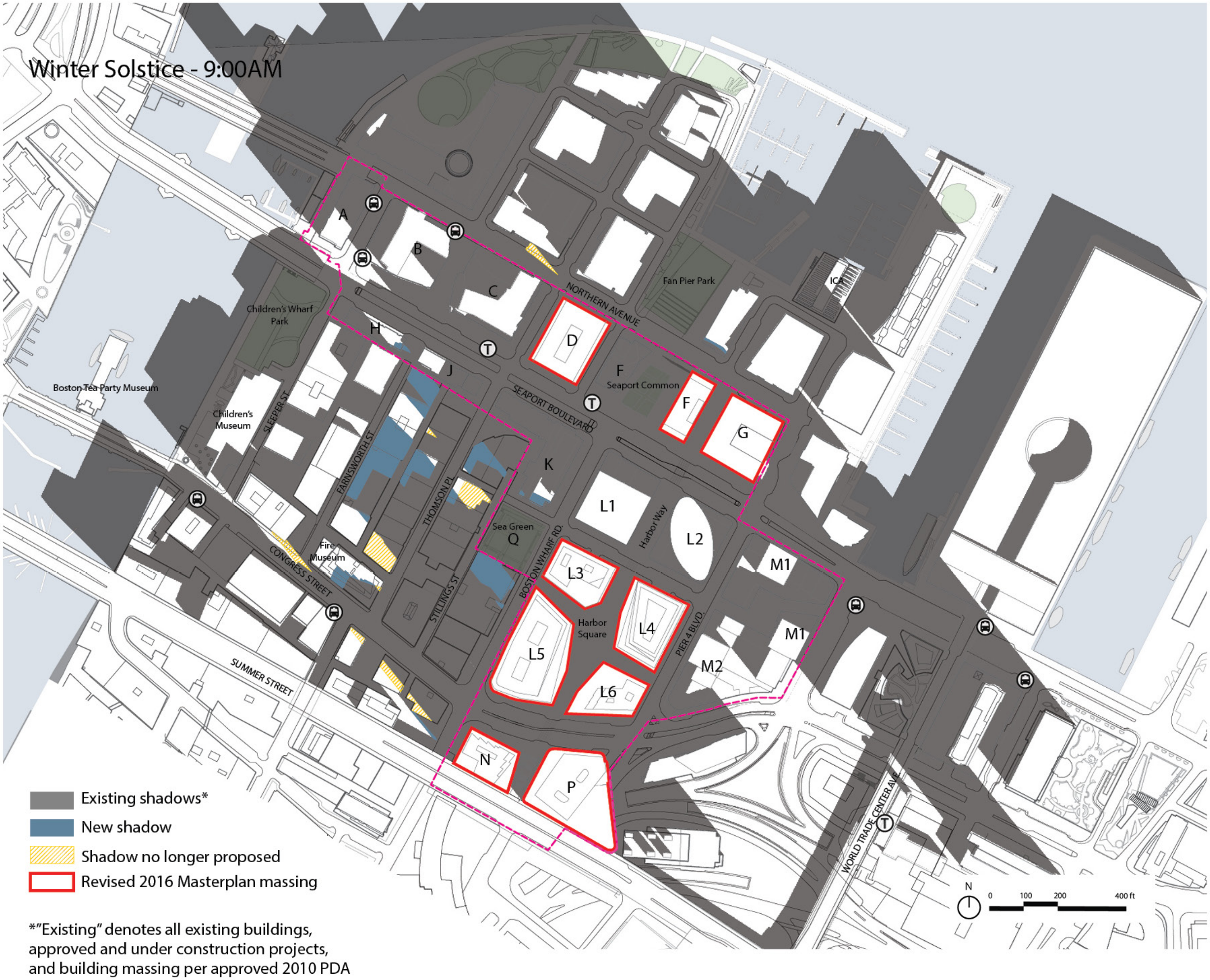

Figure 4-2.12

Shadow Study: Winter Solstice, 9 a.m.

Existing shadows*

New shadow

Shadow no longer proposed

Revised 2016 Masterplan massing

*"Existing" denotes all existing buildings, approved and under construction projects, and building massing per approved 2010 PDA

Seaport Square Boston, Massachusetts

SEAPORT

Figure 4-2.13

Shadow Study: Winter Solstice, 12 p.m.

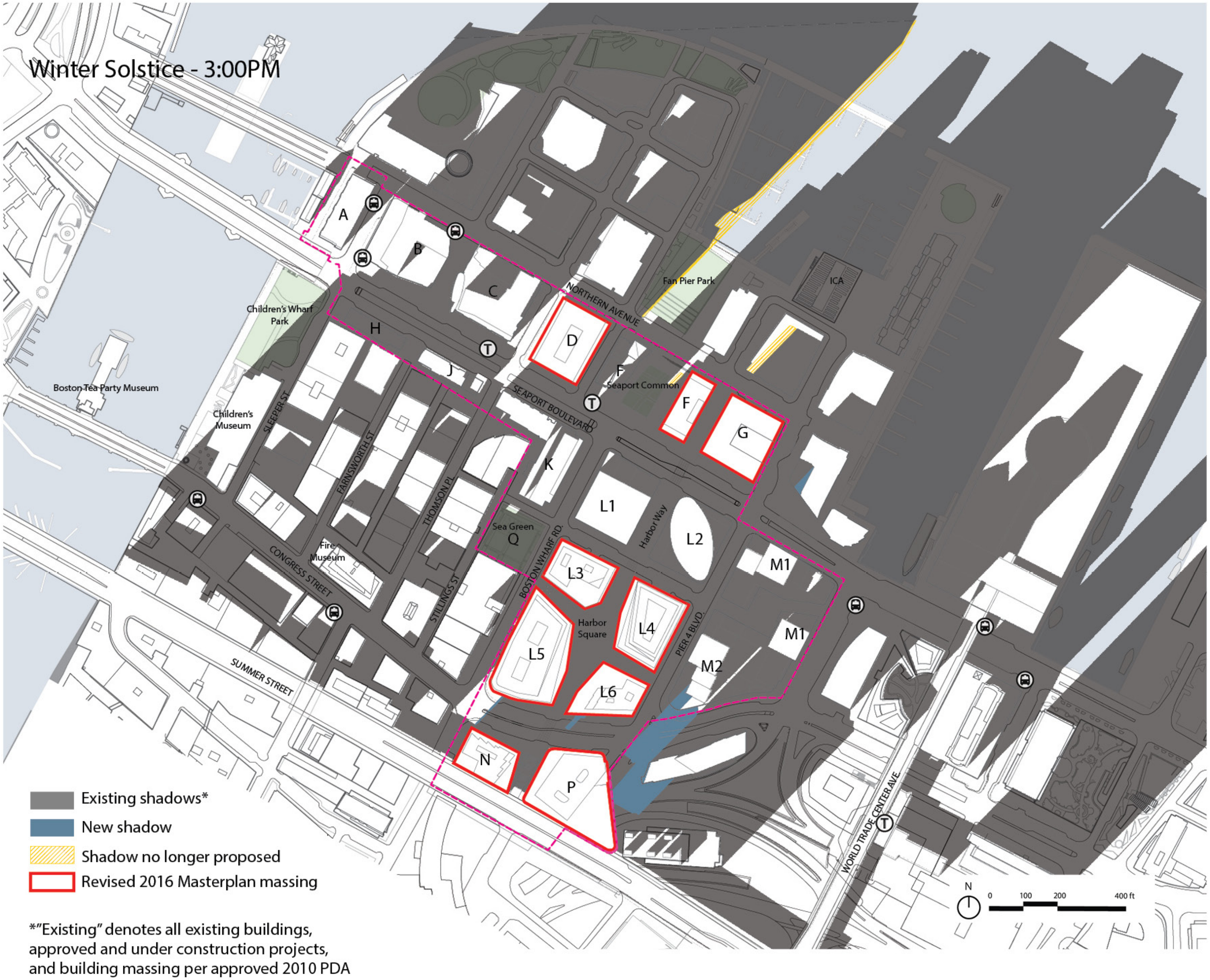

Figure 4.2-14

Shadow Study: Winter Solstice, 3 p.m.

4.3 Daylight

4.3.1 Introduction

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of a project site.

Most of the NPC Project Site is currently used for surface parking. Therefore, there is currently little daylight obstruction on the Project site, and the development of the Project inherently leads to an increase in daylight obstruction. The resulting conditions for the proposed buildings will be within the range of existing daylight obstruction values in the Project vicinity. Overall, daylight conditions from the NPC Project are typical of urban areas, and similar to the previously approved project.

4.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program[2]. This program measures the percentage of sky dome that is obstructed by a project and calculates the net change in daylight obstruction from existing to build conditions at a specific site.

Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent city streets or pedestrian ways centered on the proposed building. The façade of the building facing the viewpoint, including heights, setbacks, corners and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the "sky dome" from the viewpoint chosen. The BRADA program calculates the percentage of daylight that will be obstructed on a scale of 0 to 100 percent based on the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

The analysis compares three conditions: Existing Conditions, Proposed Conditions, and the context of the area.

Five viewpoints were chosen to evaluate the daylight obstruction for the Existing and Proposed Conditions. Viewpoints were selected based on the height and massing of the proposed buildings, as well as the width of the roadways, to provide a comprehensive study

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[2] Method developed by Harvey Bryan and Susan Stuebing, computer program developed by Ronald Fergle, Massachusetts Institute of Technology, Cambridge, MA, September 1984.

of the Project. Four area context points were evaluated to provide a basis of comparison to existing conditions in the surrounding area. The viewpoint and area context viewpoints were taken in the locations identified in Table 4.3-1 and are shown on Figure 4.3-1.

4.3.3 Daylight Analysis Results

The results for each viewpoint under each alternative condition are described in Table 4.3-1. Figures 4.3-2 through 4.3-4 illustrate the BRADA results for each analysis and are located at the end of this section.

Table 4.3-1 Daylight Obstruction Values

Viewpoint Locations		**Existing Conditions**	**Proposed Conditions**
Viewpoint 1	Seaport Boulevard facing northeast toward Blocks F and G	0%	43.0%
Viewpoint 2	Boston Wharf Road facing southeast toward Blocks L3 and L5	0%	83.0%
Viewpoint 3	Pier Four Boulevard facing northwest toward Blocks L4 and L6	0%	83.3%
Viewpoint 4	Congress Street facing southwest toward Blocks N and P	0%	53.6%
Viewpoint 5	The center of Blocks L3, L4, L5 and L6	0%	59.0%
Area Context Viewpoints			
AC1	Marina Park Drive facing northwest toward 1 Marina Park Drive	87.9%	N/A
AC2	Pier Four Boulevard facing northeast toward 100 Pier Four Boulevard	82.2%	N/A
AC3	B Street facing east toward 155 Seaport Square Boulevard	88.4%	N/A
AC4	Sleeper Street facing northwest toward 70 Sleeper Street	83.7%	N/A

Seaport Boulevard (Blocks F and G) – Viewpoint 1

Seaport Boulevard runs along the southern edge of Blocks G and F. Viewpoint 1 was taken from the center of Seaport Boulevard facing northeast toward the NPC Project Site. The location has an existing daylight obstruction value of 0% due to the surface parking lot that covers the majority of it. The development of Blocks F and G will increase the daylight obstruction value to 43.0%. The daylight obstruction value is less than the daylight obstruction values of other buildings in the area, including the Area Context buildings.

Boston Wharf Road (Blocks L3 and L5) – Viewpoint 2

Boston Wharf Road runs along the western edge of Blocks L3 and L5. Viewpoint 2 was taken from the center of Boston Wharf Road facing east toward the NPC Project Site. The location has an existing daylight obstruction value of 0% due to the surface parking lot that occupies it. The development of Blocks L3 and L5 will increase the daylight obstruction value to 83.0%. The daylight obstruction value is consistent with or less than the daylight obstruction values of other buildings in the area, including the Area Context buildings.

Pier Four Boulevard (Blocks L4 and L6) – Viewpoint 3

Pier Four Boulevard runs along the eastern edge of Blocks L4 and L6. Viewpoint 3 was taken from the center of Pier Four Boulevard facing west toward the NPC Project Site. The location has an existing daylight obstruction value of 0% due to the surface parking lot that occupies it. The development of Blocks L4 and L6 will increase the daylight obstruction value to 83.3%. The daylight obstruction value is consistent with the daylight obstruction values of other buildings in the area, including the Area Context buildings.

Congress Street (Blocks N and P) – Viewpoint 4

Congress Street runs along the northern edge of Blocks N and P. Viewpoint 4 was taken from the center of Congress Street facing southwest toward Blocks N and P. The location is occupied by a surface parking lot. The development of Blocks N and P will result in a daylight obstruction value of 53.6%. The daylight obstruction value is substantially less than the daylight obstruction values of other buildings in the area, including the Area Context buildings.

Center of Block L – Viewpoint 5

Viewpoint 5 was taken from the center of Block L facing Blocks L3 and L5. The site has an existing daylight obstruction value of 0% due to the surface parking lot that occupies the site. The development Block L will result in a daylight obstruction value of 59.0%. The daylight obstruction value is less than the daylight obstruction values of other buildings in the area, including the Area Context buildings.

Area Context Viewpoints

The area around the NPC Project Site is characterized by a mix of commercial, cultural, institutional, and residential uses in buildings heights ranging between one and 22 stories, as well as surface parking lots and recreational open space. Overall, the Project's daylight obstruction values fit within the context of these areas.

To provide a larger context for comparison of daylight conditions, obstruction values were calculated for four Area Context Viewpoints described above and shown on Figure 4.3-1. The daylight obstruction values ranged from a low of 82.2% for AC2 to a high of 88.4% for AC3.

4.3.4 Conclusions

The daylight analysis conducted for the NPC Project describes existing and proposed daylight obstruction conditions at the Project Site and in the surrounding area. The NPC Project Site generally consists of surface parking lots, and the results of the BRADA analysis indicate that the development of the NPC Project will result in increased daylight obstruction at the NPC Project Site over existing conditions. The proposed daylight obstruction values of the NPC Project are similar to the daylight value results described in the 2009 DPIR/DEIR, and the resulting conditions of the proposed changes will be within the range of daylight obstruction values within the surrounding area and typical of densely built urban areas.

G:\Projects2\MA\Boston\4698\2017\viewpoints.mxd

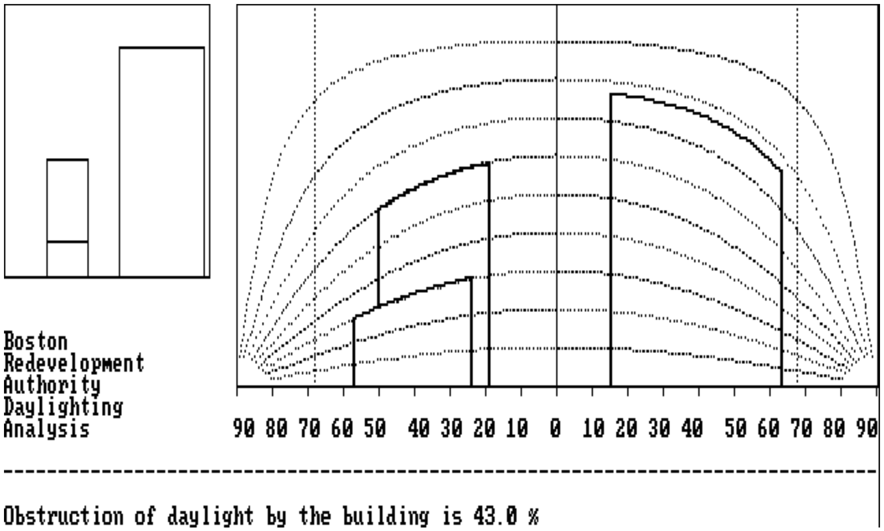
Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

Seaport Square **Boston, Massachusetts**

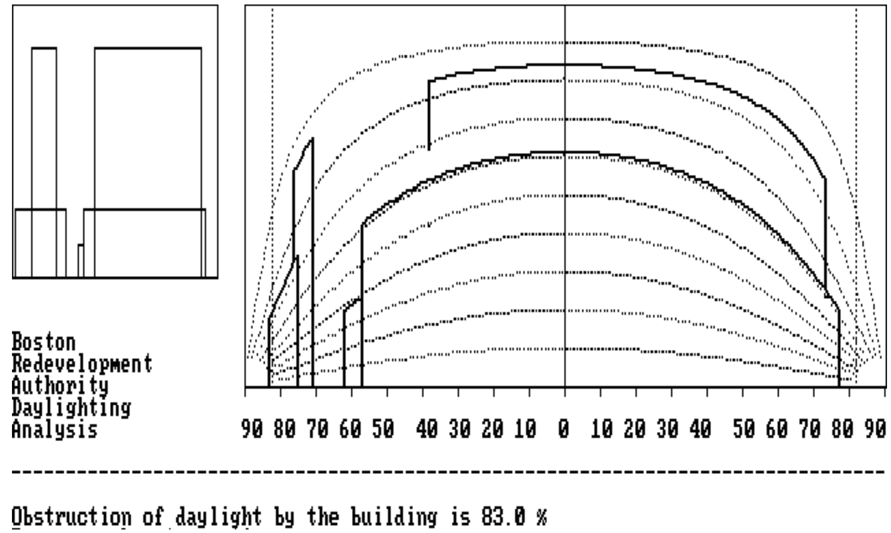
SEAPORT

Figure 4.3-1

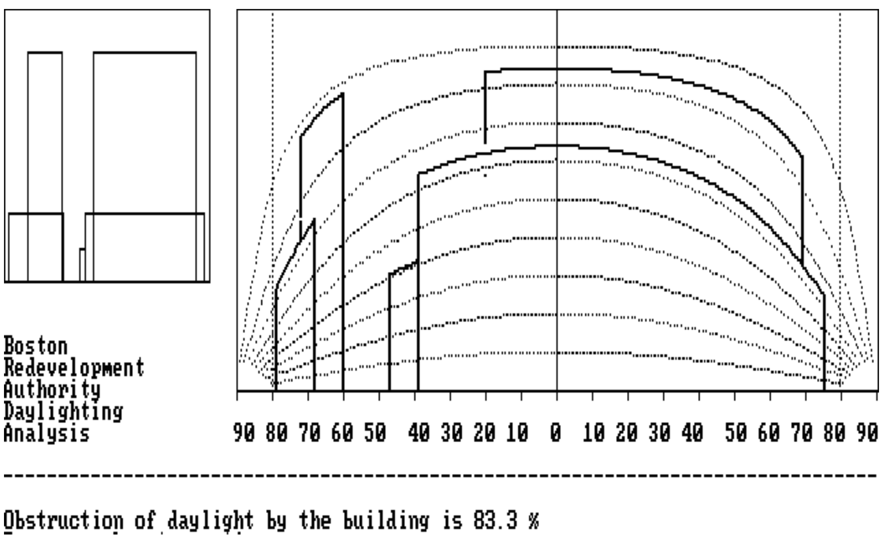
Viewpoint and Area Context Locations



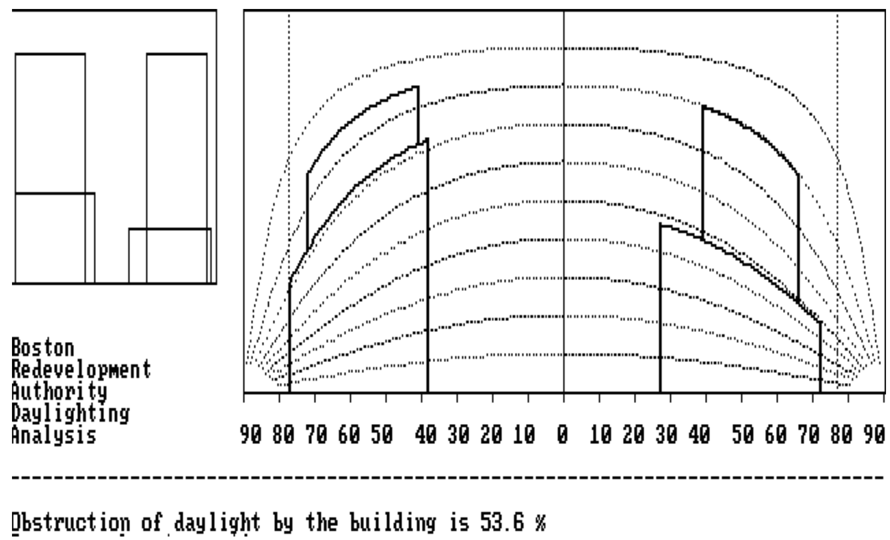
Viewpoint 1 (Proposed): View from Seaport Boulevard facing northeast toward Blocks F and G



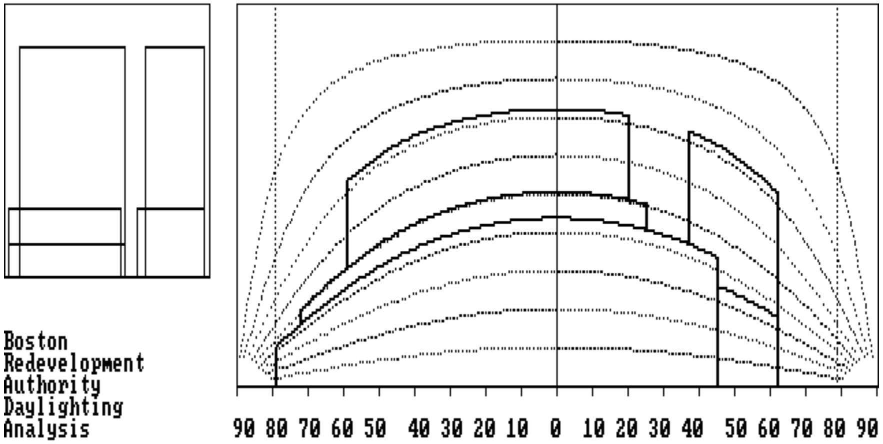
Viewpoint 2 (Proposed): View from Boston Wharf Road facing southeast toward Blocks L3 and L5



Viewpoint 3 (Proposed) View from Pier Four Boulevard facing northwest toward Blocks L4 and L6

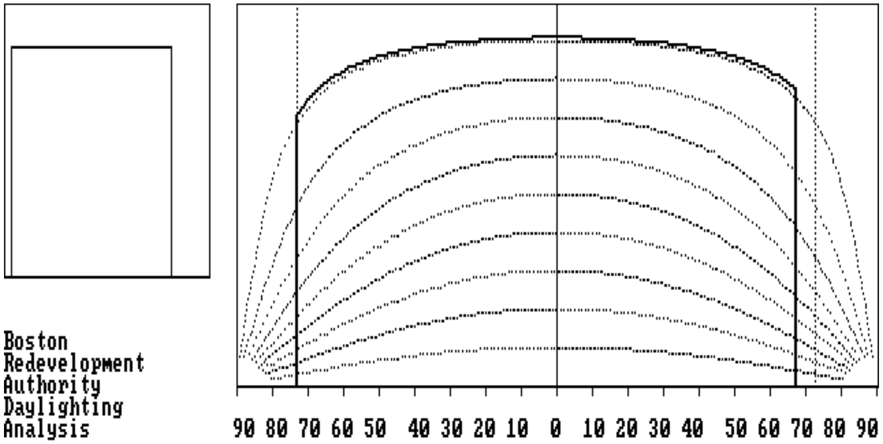


Viewpoint 4 (Proposed) View from Congress Street facing southwest toward Blocks N and P



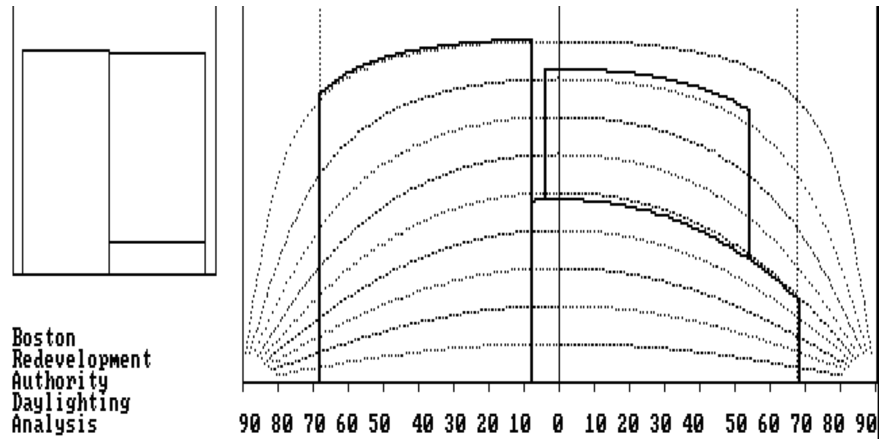
Obstruction of daylight by the building is 59.0 %

Viewpoint 5 (Proposed): View from the center of Blocks L3, L4, L5 and L6 facing west



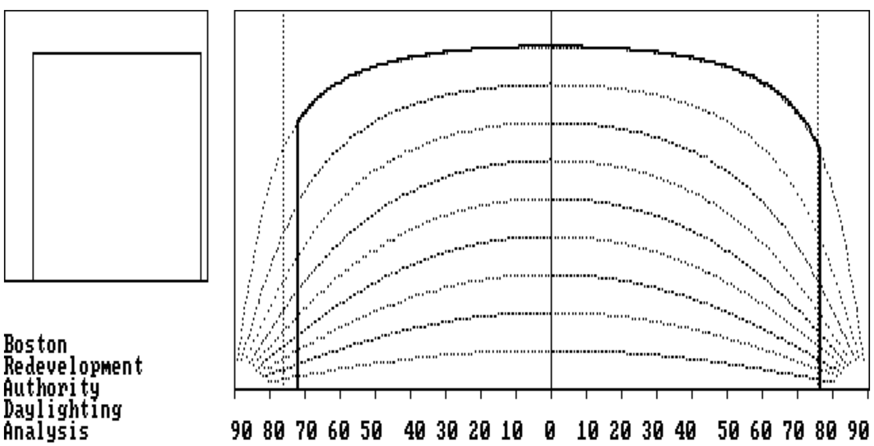
Obstruction of daylight by the building is 87.9 %

AC1: View from Marina Park Drive facing northwest toward 1 Marina Park Drive



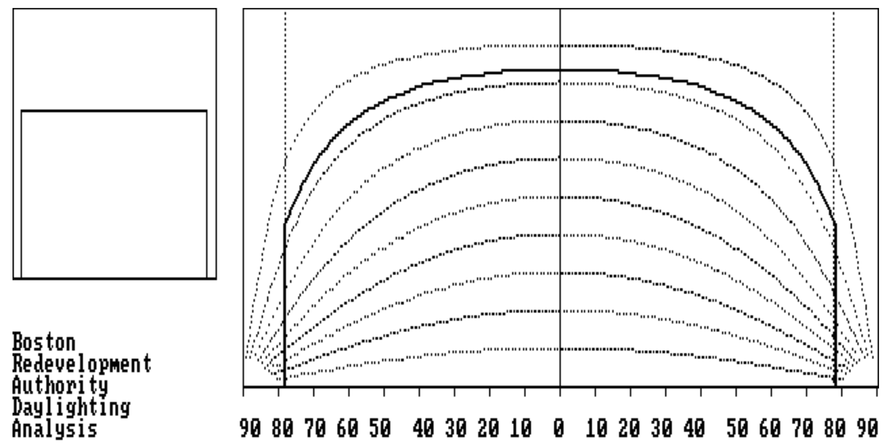
Obstruction of daylight by the building is 82.2 %

AC2: View from Pier Four Boulevard facing northeast toward 100 Pier Four Boulevard



Obstruction of daylight by the building is 88.4 %

AC3: View from B Street facing east toward 155 Seaport Boulevard



Obstruction of daylight by the building is 83.7 %

AC4: View from Sleeper Street facing northwest toward 70 Sleeper Street

Figure 4.3-4

Area Context Viewpoints

4.4 Solar Glare

The buildings are still being designed, and the glazing of the windows will be determined as the design of each building progresses. Neither the buildings that have been built nor the ones under construction have had negative solar glare impacts. For the NPC Project buildings, solar glare impacts are not anticipated.

4.5 Air Quality

An air quality analysis has been conducted for the Project. Mobile sources do not meet the thresholds requiring a quantitative analysis. Any new stationary sources will be reviewed by the Massachusetts Department of Environmental Protection (MassDEP) during permitting under the Environmental Results Program (ERP).

4.5.1 Background Air Quality and Health Standards

Background air quality concentrations and federal air quality standards were utilized to conduct the air quality impact analyses. Federal National Ambient Air Quality Standards (NAAQS) were developed by US Environmental Protection Agency (EPA) to protect the human health against adverse health effects with a margin of safety. The following sections outline the NAAQS standards and detail the sources of background air quality data.

4.5.2 National Ambient Air Quality Standards

The 1970 Clean Air Act was enacted by the U.S. Congress to protect the health and welfare of the public from the adverse effects of air pollution. As required by the Clean Air Act, EPA promulgated National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) (PM_0 and $PM_{2.5}$), carbon monoxide (CO), ozone (O_3), and lead (Pb). The NAAQS are listed in Table 4.5-1. Massachusetts Ambient Air Quality Standards (MAAQS) are typically identical to NAAQS.

NAAQS specify concentration levels for various averaging times and include both "primary" and "secondary" standards. Primary standards are intended to protect human health, whereas secondary standards are intended to protect public welfare from any known or anticipated adverse effects associated with the presence of air pollutants, such as damage to vegetation. The more stringent of the primary or secondary standards were applied when comparing to the modeling results for this Project.

A one-hour NO_2 standard was promulgated on January 22, 2010 to protect public health, including the health of sensitive populations (e.g., people with asthma, children, and the elderly). The final rule for the hourly NO_2 NAAQS was published in the Federal Register on February 9, 2010 and became effective on April 12, 2010. The form of this standard is the three-year average of the 98th percentile of the daily maximum one-hour concentrations.

Similarly, a one-hour SO_2 standard was promulgated on June 2, 2010 to protect public health, including the health of sensitive populations (e.g., people with asthma, children, and the elderly). The final rule for the hourly SO_2 NAAQS was published in the Federal Register on June 22, 2010 and became effective on August 23, 2010. The form of this standard is the three-year average of the 99th percentile of the daily maximum one-hour concentrations.

The inhalable particulate (PM10) NAAQS were promulgated on July 1, 1987 at the federal level with the intent of replacing the existing standards limiting ambient levels of Total Suspended Particulate (TSP). In 2006, the annual PM_{10} standard was revoked. However it remains codified in 310 CMR 6.00. EPA also promulgated a Fine Particulate ($PM_{2.5}$) NAAQS, effective December 2006, with an annual standard of 15 micrograms per cubic meter ($\mu g/m^3$) and the 24-hour standard of 35 $\mu g/m^3$. The annual standard has since been strengthened to 12 $\mu g/m^3$ (in 2012).

The NAAQS also reflect various durations of exposure. The non-probabilistic short-term periods (24 hours or less) refer to exposure levels not to be exceeded more than once a year. Long-term periods refer to limits that cannot be exceeded for exposure averaged over three months or longer.

Table 4.5-1 National (NAAQS) and Massachusetts (MAAQS) Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)		MAAQS ($\mu g/m^3$)	
		Primary	Secondary	Primary	Secondary
NO_2	Annual (1)	100	Same	100	Same
	1-hour (2)	**188**	None	**None**	None
SO_2	Annual (1)(9)	80	None	80	None
	24-hour (3)(9)	365	None	365	None
	3-hour (3)	None	1300	None	1300
	1-hour (4)	**196**	None	**None**	None
$PM_{2.5}$	Annual (1)	**12**	**15**	**None**	**None**
	24-hour (5)	**35**	**Same**	**None**	**None**
PM_{10}	Annual (1)(6)	**None**	None	**50**	Same
	24-hour (3)(7)	150	Same	150	Same
CO	8-hour (3)	10,000	Same	10,000	Same
	1-hour (3)	40,000	Same	40,000	Same
Ozone	8-hour (8)	**147**	Same	**235**	Same
Pb	3-month (1)	1.5	Same	1.5	Same

(1) Not to be exceeded
(2) 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
(3) Not to be exceeded more than once per year.
(4) 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
(5) 98th percentile, averaged over 3 years.
(6) EPA revoked the annual PM_{10} NAAQS in 2006.
(7) Not to be exceeded more than once per year on average over 3 years.
(8) Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years.
(9) EPA revoked the annual and 24-hour SO_2 NAAQS in 2010. However they remain in effect until one year after the area's initial attainment designation, unless designated as "nonattainment."

Source: http://www.epa.gov/ttn/naaqs/criteria.html and 310 CMR 6.04

The NAAQS consist of primary and secondary standards. Primary standards are intended to protect human health. Secondary standards are intended to protect public welfare from known or anticipated adverse effects associated with the presence of air pollutants, such as damage to property or vegetation. NAAQS have been developed for various durations of exposure. Massachusetts Ambient Air Quality Standards (MAAQS) are codified in 310 CMR 6.04, and generally follow the NAAQS but are not identical (highlighted in bold in Table 4.5-1.

4.5.3 Background Concentrations

To estimate background pollutant levels representative of the area, the most recent air quality monitor data reported by the MassDEP to EPA in their Annual Air Quality Reports was obtained for 2013 to 2015. Data for all pollutant and averaging time combinations were obtained from the U.S. EPA's AirData website.

The Clean Air Act allows for one exceedance per year of the CO and SO_2 short-term NAAQS per year. The highest second-high accounts for the one exceedance. Annual NAAQS are never to be exceeded. The 24-hour PM_{10} standard is not to be exceeded more than once per year on average over three years. To attain the 24-hour $PM_{2.5}$ standard, the three-year average of the 98th percentile of 24-hour concentrations must not exceed 35 μg/m3. For annual PM-2.5 averages, the average of the highest yearly observations was used as the background concentration. A new 1-hr NO_2 standard was recently promulgated. To attain this standard, the 3-year average of the 98th percentile of the maximum daily 1-hour concentrations must not exceed 188 μg/m3.

Background concentrations were determined from the closest available monitoring stations to the proposed development. All pollutants are not monitored at every station, so data from multiple locations are necessary. The closest monitor is at East 1st Street in South Boston, roughly 0.8 miles southeast of the Project Site. However this monitor only samples for NO_2, and SO_2. The next closest monitor is at 174 North Street in Boston, roughly 1.1 miles north-northwest of the Project Site. This monitor samples for PM2.5 only. Finally, the remaining pollutants are measured at Harrison Avenue in Boston, roughly 2.4 miles southwest. A summary of the background air quality concentrations is presented in Table 4.5-2.

Table 4.5-2 Observed Ambient Air Quality Concentrations and Selected Background Levels

Pollutant	Averaging Time	2013	2014	2015	Background Concentration (µg/m³)	NAAQS	Percent of NAAQS
SO_2 (1)(6)	1-Hour (5)	36.7	73.4	24.6	44.9	196.0	23%
	3-Hour	42.7	63.7	22.8	63.7	1300.0	5%
	24-Hour	17.0	21.2	11.3	21.2	365.0	6%
	Annual	4.0	4.6	2.1	4.6	80.0	6%
PM-10	24-Hour	34	61.0	28.0	61.0	150.0	41%
	Annual	15.1	13.9	12.4	15.1	50.0	30%
PM-2.5	24-Hour (5)	19.9	14.5	16.8	17.1	35.0	49%
	Annual (5)	8.8	7.1	7.4	7.8	12.0	65%
NO_2 (3)	1-Hour (5)	88.4	116.6	99.6	101.5	188.0	54%
	Annual	22.9	26.3	28.1	28.1	100.0	28%
CO (2)	1-Hour	2145.3	1963.1	1560.9	2145.3	40000.0	5%
	8-Hour	1375.2	1489.8	1031.4	1489.8	10000.0	15%
Ozone (4)	8-Hour	115.8	106.0	109.9	115.8	147.0	79%
Lead	Rolling 3-Month	0.006	0.014	0.016	0.016	0.15	10%

Notes:
From 2013-2015 EPA's AirData Website
(1) SO2 reported ppb. Converted to µg/m3 using factor of 1 ppm = 2.62 µg/m3.
(2) CO reported in ppm. Converted to µg/m3 using factor of 1 ppm = 1146 µg/m3.
(3) NO2 reported in ppb. Converted to µg/m3 using factor of 1 ppm = 1.88 µg/m3.
(4) O3 reported in ppm. Converted to µg/m3 using factor of 1 ppm = 1963 µg/m3.
(5) Background level is the average concentration of the three years.
(6) The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.
(7) The E. 1st St. monitor was closed in 2014. Harrison Avenue data used for 2015 SO2 and NO2.

Air quality in the vicinity of the Project Site is generally good, with all local background concentrations found to be well below the NAAQS.

4.5.4 Stationary Sources

Stationary sources of air pollution are typically units that combust fuel. In this case, these sources consist of heating and hot water units and emergency electrical generators. Cooling towers, although not a combustion source, are a source of particulate emissions.

4.5.4.1 Boilers

Building plans may include a number of small condensing boilers for heat and domestic hot water. Typical units are natural gas-fired and located in a penthouse mechanical area on the roof of the building. The units are typically exhausted through individual stacks.

4.5.4.2 Emergency Generators

Plans likely will include emergency generators to be installed on building to be constructed. The units will provide life safety and standby emergency power to the building. Typically, generators operate for approximately one hour each month for testing and general maintenance and as needed for emergency power. The units will likely be diesel-fired and located in a mechanical area on the roof of the building. The generators are to be designed such that exhaust stacks extend at least 10 feet above the individual building roof height above ground level.

4.5.4.3 Cooling Towers

Plans may also call for cooling towers to be installed on the building to be constructed. These units will remove the excess heat generated by the building's mechanical equipment. Typically units are located on the roof of the building.

4.5.4.4 Parking Garage Exhausts

Any below-grade parking will require mechanical ventilation with carbon monoxide sensors and activation. Mechanical ventilation is not required for parking areas that are above ground.

4.5.4.5 Combined Heat and Power

A cogeneration (combined heat and power, CHP) plant may be considered for inclusion in the Project. The unit would provide additional hot water to be distributed to the heating loop, as well as additional standby power in the event of a power outage.

4.5.4.6 Permitting

It is expected that the majority of stationary sources (boilers, engines, etc) would be subject to the MassDEP's Environmental Results Program (ERP).

Boilers are expected to be within the requirements of the ERP since individual estimated heat inputs are within or below the 10 to 40 MMBtu/hour ERP range.

The ERP regulation applies to new emergency generators greater than 37 kW. The regulation is similar to the boiler ERP in that new engines are subject to emission standards, recordkeeping, certification, and compliance with the MassDEP noise policy. Since the generators' likely maximum rating capacity will be greater than the ERP limit of 37 kW, it will be subject to the ERP program. Per the ERP, the generator owner will limit operation of the generator to less than 300 hours per year and submit a certification form to MassDEP within 60 days of installation.

It is expected that any cogeneration units would also be subject to the MassDEP's ERP program for non-emergency engines and turbines if included in the final design.

4.5.5 Mobile Sources

Mobile sources of air pollution include emissions from vehicle traffic associated with the project.

4.5.5.1 BPDA Air Quality Analysis Requirements

BPDA guidelines[3] state:

A mesoscale analysis predicting the change in regional emissions of volatile organic compounds ("VOCs") and nitrogen oxides ("NOx") should be performed for projects that generate more than 10,000 vehicle trips per day. The above analyses shall be conducted in accordance with the modeling protocols established by the Massachusetts Department of Environmental Protection ("DEP") and the U.S. Environmental Protection Agency ("EPA").

For the NPC Project, the vehicle trip threshold is not exceeded. Therefore a mesoscale analysis was not required.

BPDA guidelines also state:

A microscale analysis predicting localized carbon monoxide concentrations should be performed, including identification of any locations projected to exceed the National or Massachusetts Ambient Air Quality Standards, for projects in which: 1) project traffic would impact intersections or roadway links currently operating at Level of Service ("LOS") D, E, or F or would cause LOS to decline to D, E, or F; 2) project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour); or, 3) the project will generate 3,000 or more new average daily trips on roadways providing access to a single location.

For this Project, the transportation analysis shows that Project traffic affects intersections currently operating at LOS D or worse, or projected to operate at LOS D or worse for future cases. Therefore a microscale analysis was required.

4.5.5.2 Methodology

<u>Microscale Analysis</u>

The BPDA typically requests an analysis of the effect on air quality of the increase in traffic generated by projects subject to Large Project Review. This "microscale" analysis is typically required for any intersection (including garage entrances/exits) where 1) Project traffic would impact intersections or roadway links currently operating at LOS D, E, or F or would cause LOS to decline to D, E, or F; 2) Project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100

3 Boston Redevelopment Authority, BRA Development Review Guidelines, 2006

vehicles per hour); or, 3) the Project will generate 3,000 or more new average daily trips on roadways providing access to a single location. The microscale analysis involves modeling of carbon monoxide (CO) emissions from vehicles idling at and traveling through signaled intersections. Predicted ambient concentrations of CO for the Build and No Build cases are compared with federal (and state) ambient air quality standards for CO.

The microscale analysis typically examines ground-level CO impacts due to traffic queues in the immediate vicinity of a project. CO is used in microscale studies to indicate roadway pollutant levels since it is the most abundant pollutant emitted by motor vehicles and can result in so-called "hot spot" (high concentration) locations around congested intersections. The NAAQS standards do not allow ambient CO concentrations to exceed 35 parts per million (ppm) for a one-hour averaging period and 9 ppm for an eight-hour averaging period, more than once per year at any location. The widespread use of CO catalysts on current vehicles has reduced the occurrences of CO hotspots. Air quality modeling techniques (computer simulation programs) are typically used to predict CO levels for both existing and future conditions to evaluate compliance of the roadways with the standards. The analysis for the Project followed the procedure outlined in U.S. EPA's intersection modeling guidance.[4]

The microscale analysis has been conducted using the latest versions of EPA's MOVES and CAL3QHC programs to estimate CO concentrations at sidewalk receptor locations.

Baseline (2016) and future year (2023) emission factor data calculated from the MOVES model, along with traffic data, were input into the CAL3QHC program to determine CO concentrations due to traffic flowing through the selected intersections.

Existing background values of CO at the nearest monitor location at Kenmore Square were obtained from MassDEP. CAL3QHC results were then added to background CO values of 1.3 ppm (one-hour) and 1.1 ppm (eight-hour), as provided by MassDEP, to determine total air quality impacts due to the Project. These values were compared to the NAAQS for CO of 35 ppm (one-hour) and 9 ppm (eight-hour).

The modeling methodology was developed in accordance with the latest MassDEP modeling policies and Federal modeling guidelines.[5]

Modeling assumptions and backup data for results presented in this section are provided in the Appendix C.

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[4] U.S. EPA, Guideline for Modeling Carbon Monoxide from Roadway Intersections; EPA-454/R-92-005, November 1992.

[5] 40 CFR 51 Appendix W, Guideline on Air Quality Models, 70 FR 68228, Nov. 9, 2005.

Intersection Selection

As stated previously, a "microscale" analysis is typically required for the Project at intersections where 1) Project traffic would impact intersections or roadway links currently operating at LOS D, E, or F or would cause LOS to decline to D, E, or F; 2) Project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour); or, 3) the Project will generate 3,000 or more new average daily trips on roadways providing access to a single location.

Four signalized intersections included in the traffic study meet the above conditions (see Section 3.0). The traffic volumes and LOS calculations provided in Section 3.0 form the basis of evaluating the traffic data versus the microscale thresholds. The intersections found to meet the criteria are:

- the intersection of Sleeper Street and Seaport Boulevard;
- the intersection of Seaport Boulevard, East Service Road, and Pier 4 Boulevard;
- the intersection of Congress Street, B Street, and the Interstate ramps; and
- the intersection of Summer Street and D Street.

Microscale modeling was performed for the intersections based on the aforementioned methodology. The 2016 Existing conditions, and the 2023 No Build and Build conditions were each evaluated for both morning (a.m.) and afternoon (p.m.) peak.

Emissions Calculations (MOVES)

The EPA MOVES computer program was used to estimate motor vehicle emission factors on the roadway network. Emission factors calculated by the MOVES model are based on motor vehicle operations typical of daily periods. The Commonwealth's statewide annual Inspection and Maintenance (I&M) program was included, as well as the county specific vehicle age registration distribution, fleet mix, meteorology, and other inputs. The inputs for MOVES for the existing (2016) and build year (2023) are provided by MassDEP.

All link types for the modeled intersection were input into MOVES. Idle emission factors are obtained from factors for a link average speed of 0 miles per hour (mph). Moving emissions are calculated based on speeds at which free-flowing vehicles travel through the intersection as stated in traffic modeling (SYNCHRO) reports. A speed of 30 mph is used for all free-flow traffic. Speeds of 10 and 15 mph were used for right (and U-turns, if necessary) and left turns, respectively. Roadway emissions factors were obtained from MOVES using EPA guidance.[6]

Winter CO emission factors are typically higher than summer. Therefore, January weekday emission factors were conservatively used in the microscale analyses.

Receptors & Meteorology Inputs

Sets of up to roughly 185 receptors were placed in the vicinity of the modeled intersections. Receptors extended approximately 300 feet on the sidewalks along the roadways approaching the intersections. The roadway links and receptor locations of the modeled intersections are presented in Figure 4.5-1 through Figure 4.5-4.

For the CAL3QHC model, limited meteorological inputs are required. Following EPA guidance[7], a wind speed of one meter per second, stability class D (4), and a mixing height of 1,000 meters were used. To account for the intersection geometry, wind directions from 0° to 350°, every 10° were selected. A surface roughness length of 321 centimeters was selected.[8]

Impact Calculations (CAL3QHC)

The CAL3QHC model predicts one-hour concentrations using queue-links at intersections, worst-case meteorological conditions, and traffic input data. The one-hour concentrations were scaled by a factor of 0.9 to estimate eight-hour concentrations.[9] The CAL3QHC methodology was based on EPA CO modeling guidance. Signal timings were provided directly from the traffic modeling outputs.

For use in the microscale analysis, background concentrations of CO in ppm were required. The corresponding maximum background concentrations in ppm were 1.9 ppm (2,145 $\mu g/m^3$) for one-hour and 1.3 ppm (1,490 $\mu g/m^3$) for eight-hour CO.

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

7 U.S. EPA, *Guideline for Modeling Carbon Monoxide from Roadway Intersections.* EPA-454/R-92-005, November 1992.

8 U.S. EPA, *User's Guide for CAL3QHC Version 2: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*. EPA –454/R-92-006 (Revised), September 1995.

9 U.S. EPA, AERSCREEN User's Guide; EPA-454/B-11-001, March 2011.

Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 4.5-1

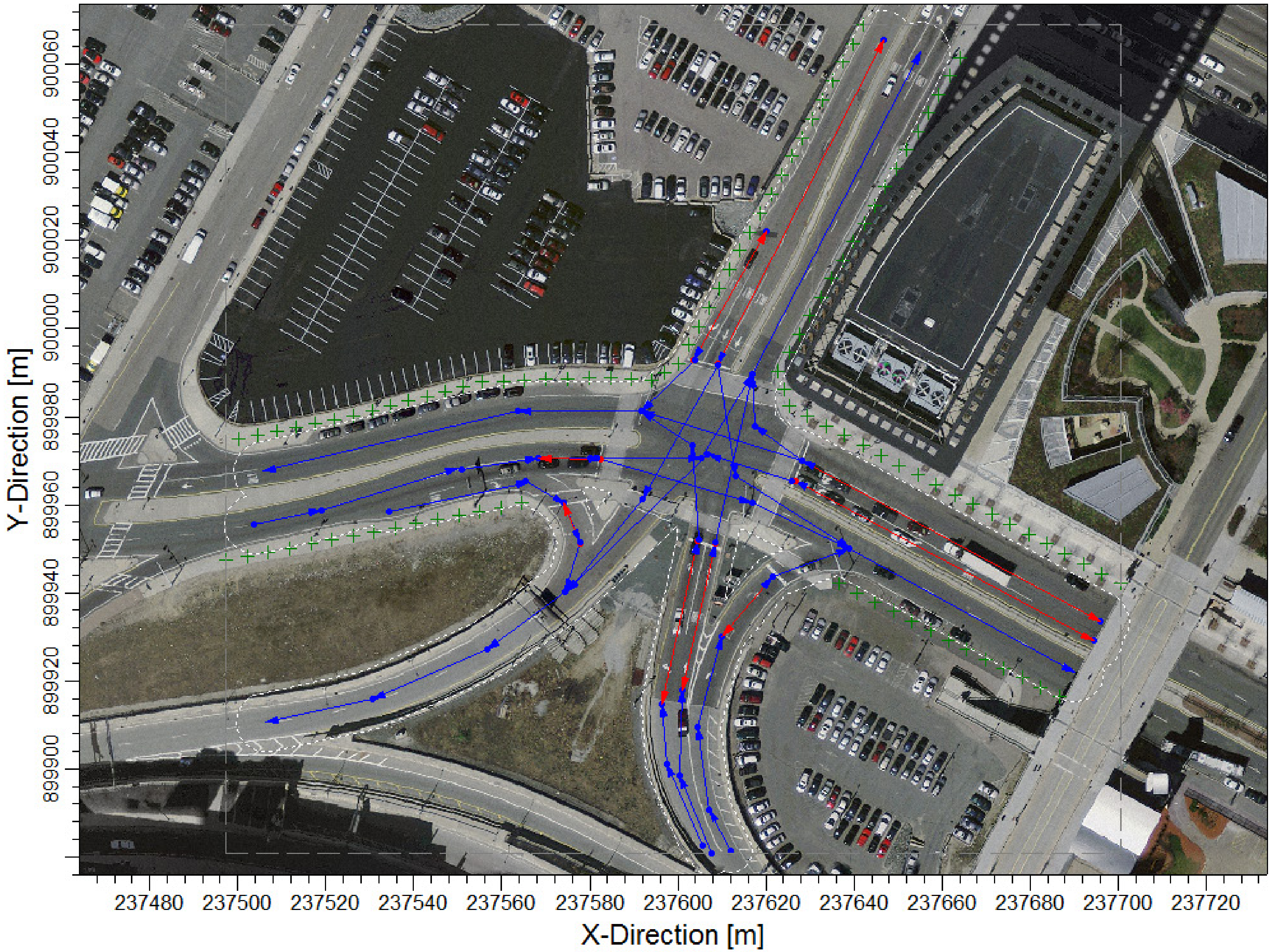
Intersection of Sleeper St. and Seaport Blvd.

Seaport Square Boston, Massachusetts

SEAPORT

Figure 4.5-2

Intersection of Seaport Blvd., E. Service Rd., and Pier 4 Blvd.

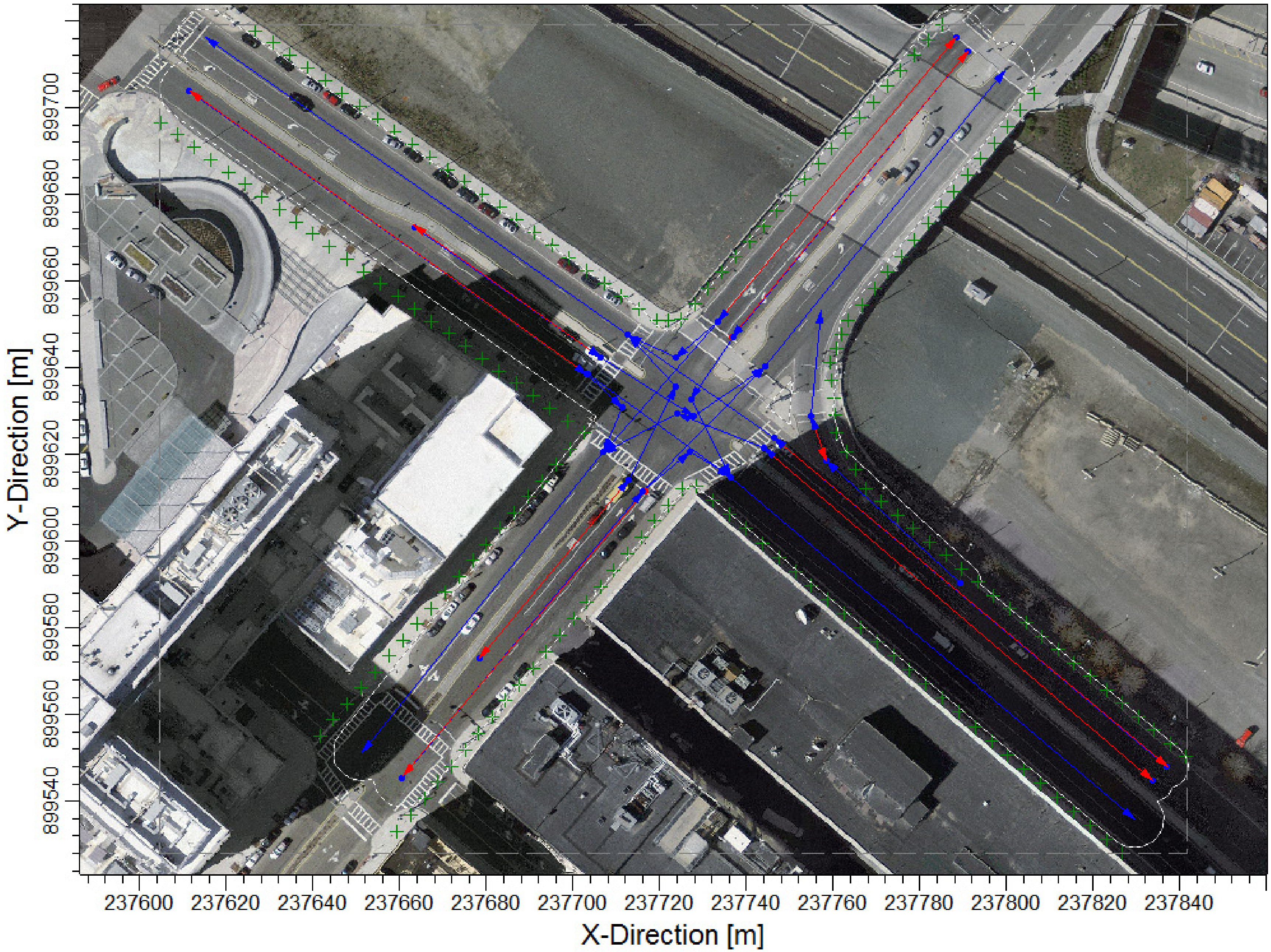


Seaport Square Boston, Massachusetts

SEAPORT

Figure 4.5-3

Intersection of Congress Street, B Street, and Interstate Ramps



Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 4.5-4

Intersection of Summer St. and D. St

4.5.5.3 Air Quality Results

The results of the maximum one-hour predicted CO concentrations from CAL3QHC are provided in Tables 4.5-3 through 4.5-5 for the 2016 and 2023 scenarios. Eight-hour average concentrations are calculated by multiplying the maximum one-hour concentrations by a factor of 0.9.[10]

The results of the one-hour and eight-hour maximum modeled CO ground-level concentrations from CAL3QHC were added to EPA supplied background levels for comparison to the NAAQS. These values represent the highest potential concentrations at the intersection as they are predicted during the simultaneous occurrence of "defined" worst case meteorology. The highest one-hour traffic-related concentration predicted in the area of the Project for the modeled conditions (0.3 ppm) plus background (1.9 ppm) is 2.2 ppm. The highest eight-hour traffic-related concentration predicted in the area of the Project for the modeled conditions (0.3 ppm) plus background (1.3 ppm) is 1.6 ppm. All concentrations are well below the one-hour NAAQS of 35 ppm and the eight-hour NAAQS of 9 ppm.

4.5.5.4 Conclusions

Results of the microscale analysis show that all predicted CO concentrations are well below one-hour and eight-hour NAAQS. Therefore, it can be concluded that there are no anticipated adverse air quality impacts resulting from increased traffic in the area.

Table 4.5-3 Summary of Microscale Modeling Analysis (Existing 2016)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
1-Hour					
Sleeper Street and Seaport Boulevard	AM	0.2	1.9	2.1	35
	PM	0.3	1.9	2.2	35
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35
Congress Street, B Street, and Interstate Ramps	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35
Summer Street and D Street	AM	0.3	1.9	2.2	35
	PM	0.2	1.9	2.1	35

10 U.S. EPA, AERSCREEN User's Guide; EPA-454/B-11-001, March 2011.

Table 4.5-3 Summary of Microscale Modeling Analysis (Existing 2016) (Continued)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
8-Hour					
Sleeper Street and Seaport Boulevard	AM	0.2	1.3	1.5	9
	PM	0.3	1.3	1.6	9
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Congress Street, B Street, and Interstate Ramps	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Summer Street and D Street	AM	0.3	1.3	1.6	9
	PM	0.2	1.3	1.5	9

Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.

Table 4.5-4 Summary of Microscale Modeling Analysis (No-Build 2023)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
1-Hour					
Sleeper Street and Seaport Boulevard	AM	0.1	1.9	2.0	35
	PM	0.2	1.9	2.1	35
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35
Congress Street, B Street, and Interstate Ramps	AM	0.1	1.9	2.0	35
	PM	0.1	1.9	2.0	35
Summer Street and D Street	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35

Table 4.5-4 Summary of Microscale Modeling Analysis (No-Build 2023) (Continued)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
8-Hour					
Sleeper Street and Seaport Boulevard	AM	0.1	1.3	1.4	9
	PM	0.2	1.3	1.5	9
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Congress Street, B Street, and Interstate Ramps	AM	0.1	1.3	1.4	9
	PM	0.1	1.3	1.4	9
Summer Street and D Street	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.					

Table 4.5-5 Summary of Microscale Modeling Analysis (Build 2023)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
1-Hour					
Sleeper Street and Seaport Boulevard	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.9	2.1	35
	PM	0.3	1.9	2.2	35
Congress Street, B Street, and Interstate Ramps	AM	0.1	1.9	2.0	35
	PM	0.1	1.9	2.0	35
Summer Street and D Street	AM	0.2	1.9	2.1	35
	PM	0.2	1.9	2.1	35

Table 4.5-5 Summary of Microscale Modeling Analysis (Build 2023) (Continued)

Intersection	*Peak*	*CAL3QHC Modeled CO Impacts (ppm)*	*Monitored Background Concentration (ppm)*	*Total CO Impacts (ppm)*	*NAAQS (ppm)*
8-Hour					
Sleeper Street and Seaport Boulevard	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Seaport Boulevard, East Service Road and Pier 4 Boulevard	AM	0.2	1.3	1.5	9
	PM	0.3	1.3	1.6	9
Congress Street, B Street, and Interstate Ramps	AM	0.1	1.3	1.4	9
	PM	0.1	1.3	1.4	9
Summer Street and D Street	AM	0.2	1.3	1.5	9
	PM	0.2	1.3	1.5	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.					

4.6 Noise

The noise analysis presented in the 2009 DPIR/DEIR concluded that the proposed buildings would not have a significant impact on the existing acoustical environment. The only substantive change to the Project, where the noise analysis is concerned, is that some of the buildings will be taller than they were previously proposed to be. These buildings can be presumed to have a lesser acoustical impact, because their rooftop mechanical equipment, which is essentially the same as the equipment previously studied, is located farther from ground-level receptors.

4.7 Tidelands: Chapter 91 and the South Boston Municipal Harbor Plan

As described in detail in the DPIR and the Final Environmental Impact Report filed with the MEPA Office for the 2010 Project, portions of the Project Site are located on Commonwealth Tidelands and subject to the licensing requirements of Chapter 91 of the Massachusetts General Laws, as modified by the South Boston Waterfront District Municipal Harbor Plan. The South Boston Waterfront District Municipal Harbor Plan, which was originally submitted by the BRA in July 2000 and approved by the Secretary of the Executive Office of Energy and Environmental Affairs ("EOEEA Secretary") in December 2000 (as subsequently amended and renewed, the "SBWMHP"), allows for certain deviations (substitute provisions) from the requirements of Chapter 91, so long as additional public benefits (offsets) are provided. This section describes the Project's compliance with Chapter 91 and the SBWMHP to date, and provides an update on Block G, the last remaining undeveloped Block within Chapter 91 licensing jurisdiction.

The entirety of the Project Site is within landlocked tidelands, as defined in Chapter 91, and is therefore subject to review by the EOEEA Secretary and the issuance of a Public Benefits Determination pursuant to *An Act Relative to Licensing Requirements for Certain Tidelands*, Chapter 168, Section 8 of the Acts of 2007 (the "Landlocked Tidelands Legislation").

On August 13, 2010, the EOEEA Secretary issued a Public Benefits Determination for the 2010 Project (the "Public Benefits Determination"), which found that the 2010 Project provided public benefits that were appropriate for its impacts on landlocked tidelands. Since the issuance of the Public Benefits Determination, Block A, Block B, Block H, and Block M have each received Chapter 91 licenses allowing the development of the portions of those Blocks within licensing jurisdiction. Within the NPC Project Site, only a portion of Block G is subject to Chapter 91 jurisdiction, and the lot coverage, height, and dimensions of the portions of the building within Chapter 91 jurisdiction are generally unchanged from the building proposed in the 2010 Project. The MEPA Notice of Project Change ("MEPA NPC") will provide an update on the delivery of the public benefits described in the Public Benefits Determination to date, and a description of the public benefits to be provided in connection with the Remaining Blocks.

Although this NPC proposes no material changes to the portion of the NPC Project within Chapter 91 jurisdiction, the NPC Project includes significant enhancements to the public realm that will increase the public's access to and enjoyment of Boston Harbor and Fort Point Channel.

4.7.1 Block G

Approximately 5,500 square feet of Block G at grade and approximately 8,000 square feet of subsurface rights is located seaward of or within the former layout of Northern Avenue, and within 250 feet of the high water mark, as shown on Figure 4.7-1 and is thus subject to the licensing requirements of Chapter 91.

4.7.1.1 Section 18 Standards

Block G is within the Fort Point Waterfront Subdistrict of the Harborpark District (the "Fort Point Waterfront"), and therefore subject to the requirements detailed in Section 42E-5 of the City of Boston Zoning Code (the "Code") for the BPDA's issuance of a Section 18 finding for the Chapter 91 licensing of Block G. Section 42E-5.1 sets forth several considerations to guide the BPDA's conclusion that a project within the Fort Point Waterfront will not be detrimental to the public's rights in tidelands.

Seaport Square Boston, Massachusetts

Figure 4.7-1

Chapter 91 Jurisdiction

The Project meets the standards set forth in Section 42E-5.1(a) and (b), and Section 42E-5.2, by significantly enhancing and preserving visual and physical access to the South Boston Waterfront and Fort Point Channel. As set forth in detail in this NPC, the NPC Project provides significant new open spaces, promenades, and a network of other pedestrian improvements linking Summer Street, Congress Street, the Fort Point neighborhood and the rest of the Seaport to the water. Although Block G does not contain frontage on the waterfront, the introduction of Harbor Way will guide pedestrians through an attractive system of open spaces and pedestrian improvements, toward the Harborwalk and the water's edge.

4.7.1.2 Compliance with Chapter 91 Regulations and South Boston Municipal Harbor Plan

Consistent with the 2010 Project filings, the project planned for Block G has been designed to comply with the requirements of Chapter 91 and the Municipal Harbor Plan, as described below. More detail will be provided during the Chapter 91 licensing process.

Lot Coverage/Open Space. The Chapter 91 regulations, 310 CMR 9.00 et seq., contain numerical standards, the combined effect of which is to limit the site-coverage for non-water-dependent buildings on Commonwealth Tidelands so that at least 50% of the project site consists of exterior open spaces for active or passive public use and enjoyment. Open space is required to be provided concurrent with development impacts.

The substitute provision adopted in the SBWMHP permits 100% lot coverage on the portion of Block G within jurisdiction, so long as additional open space is provided either on-site (at a ratio of 1:1) or off-site (at a ratio of 1:1.25). In a clarification of the SBWMHP dated May 18, 2012 (the "SBWMHP Clarification"), the EOEEA Secretary confirmed that the Project could provide off-site open space as an offset for lot coverage over 50%; the "location and sequencing of off-site open space offsets for parcels within Chapter 91 jurisdiction should be determined by proximity and concurrency." The SBWMHP Clarification noted that the "Seaport Square project provides for all of the public open spaces environed in the Secretary's Decision [approving the SBWMHP] and expands upon them to provide additional public open spaces within the project site."

The projects constructed or to be constructed on Blocks A, B, H, and M satisfied their open space requirements on site. The Chapter 91 licenses for Blocks A, B, H, and M contemplated that the BPDA would track the open space provided by the Project prior to or concurrent with the development of the Blocks being licensed, to insure that sufficient offsets were provided to offset the substitute provision allowing 100% lot coverage. Each Chapter 91 License contains plans that include a tally of open space aggregated within the Project at the time of licensing. The license for Block M, the most recent license to issue, calculates that the Project has provided 124,161 sf of open space in excess of the quantity required for Blocks A, B, H, and M.

Block G, which is expected to require approximately 2,750 square feet of open space to offset lot coverage above 50%, will comply with the open space offset requirements of the SBWMHP by providing open space through its public realm improvements along adjacent streets, and, if necessary, may draw upon the significant excess open space already delivered by the Project.

Facilities of Private Tenancy. As described in the DPIR, the SBWMHP Decision requires that any ground floor uses that are accessory to Facilities of Private Tenancy will be limited to 20% of the building footprint. On Block G, the primary ground floor uses – as well as the second floor – will be Facilities of Public Accommodation, with less than 20% of the ground floor devoted to private uses. The SBWMHP also prohibits residential lobbies and entrances from fronting along the water side of buildings. The Block G building will comply with that regulation.

Height. The Chapter 91 regulations at §9.51(3)(e) limit the height of new or expanded buildings to 55 feet if located within 100 feet of the project shoreline. At greater landward distances, the height of such buildings is limited to 55 feet plus one-half foot for every additional foot of separation from the project shoreline.

The substitute provision adopted in the SBWMHP Decision provides Block G with a maximum height of 250 feet within Chapter 91 jurisdiction, which was the height proposed for Block G in the 2010 Project approvals. No change to the maximum height of the portion of the Block G building within jurisdiction is proposed in this NPC.

To compensate for wind, shadow and other potential adverse impacts to water-related public interests caused by substitute height provisions, the SBWMHP provides a formula that quantifies both the degree of impacts and the level of offsets required. Under this formula, height-related impacts beyond those under a Chapter 91 compliant height are quantified as the net area within a designated Shadow Protection Zone (SPZ) that would receive net new shadow for over an hour on October 23. The Proponent will provide a preliminary shadow study in the MEPA NPC and a final study calculating the amount of net new shadow and corresponding offsets during the Chapter 91 licensing process for Block G.

4.7.2 The Landlocked Legislation: Public Benefits Determination

As noted above, the EOEEA Secretary issued a Public Benefits Determination for the 2010 Project on August 13, 2010, which found that the extensive public benefits of the project were appropriate in light of the project's impacts on landlocked tidelands. Since that time, the previous proponent, together with the developer of each of the Developed Blocks, has submitted Notices of Intent to Commence Construction on Landlocked Tidelands to MassDEP in conjunction with the development of individual blocks. Those notices have provided updates on the status of construction of buildings and the public realm improvements assigned to each Block pursuant to the approvals for the 2010 Project. Through the filing of the MEPA NPC, the Proponent will seek a Public Benefits Determination from the EOEEA Secretary for the changes to the Project described herein.

4.8 Flood Hazard Zones/Wetlands

The NPC does not propose a change to the location of the Project. However, since the filing of the 2009 DPIR/DEIR, the Federal Emergency Management Agency has updated the Flood Insurance Rate Map for Suffolk County (Map Number 25025C0081J). Portions of the Project Site are now shown to be located in Land Subject to Coastal Storm Flowage (100-Year Floodplain), as defined in the Massachusetts Wetlands Protection Action (M.G.L. c. 131 Sec. 40) and the Wetlands Protection Act Regulations (310 CMR 10.00). Development of the affected blocks will be reviewed by the Boston Conservation Commission.

4.9 Geotechnical/Groundwater

A variety of foundation systems have been installed based on the specific structural and below-grade space requirements for each building, including footing and mat foundations supported in marine clay, wood piles, deep piles to bedrock (Precast or steel H-piles), slurry wall, drilled shafts (caissons), and pressure injected footings. Similar systems will be used for the future development Blocks. Protection of existing utilities has been considered in development of the design and construction methodology for the Project.

Design criteria and construction methodologies that protect groundwater will be selected depending on planned basement depths. These include perimeter groundwater cut-off walls around below-grade garages and no permanent dewatering or perimeter drainage systems which could result in groundwater lowering. Removal of any hazardous waste will be conducted in accordance with applicable regulations.

4.9.1 Subsurface Geotechnical Conditions

As was described in the 2009 DPIR/DEIR, the Project is located in an area of South Boston that was filled during the 1800s. Historically the area was developed for railroad and other associated uses. Numerous subsurface investigations have been under taken on the various parcels providing a comprehensive understanding and revealing relatively consistent geologic conditions.

Subsurface conditions are generally characterized as shown in Table 4.9-1.

Table 4.9-1 Subsurface Soils

Generalized Description	Depth to Top of Layer (ft)	Thickness of Layer (ft)
Fill	--	3 to 5
Hydraulic Fill/Organic Silt	3 to 5	15 to 25
Silty Sand/Sandy Silt	20 to 25	5 to 15
Marine Clay	30 to 35	65 to 100
Glacial Till	110 to 150	0 to 25
Bedrock	125 to 170	--

4.9.2 Foundation Methodology and Below-Grade Construction

A range of building geometries and basement configurations has been constructed for the Project to date. A variety of foundation systems have been installed based on the specific structural and below-grade space requirements for each building, including footing and mat foundations supported in marine clay, wood piles, deep piles to bedrock (Precast or steel H-piles), slurry wall, drilled shafts (caissons), and pressure injected footings. Similar systems will be used for the future development Blocks.

Several significant infrastructure facilities are present near the Project. These include utilities and the MBTA Silver Line tunnel below Seaport Boulevard extending south to Congress Street. Protection of these structures and facilities has been considered in development of the design and construction methodology for the Project. The measures include stiff, waterproof excavation support systems and permanent foundation walls to mitigate potential off-site impacts, use of non-vibration generating systems such as slurry wall construction, and groundwater cut-off criteria to not impact area groundwater levels.

Prior to construction an instrumentation and monitoring program will be implemented, similar to what has been used for the other Seaport Blocks during construction. The program will include preconstruction condition surveys of adjacent buildings and the MBTA tunnel, movement monitoring of critical adjacent structures, vibration monitoring as needed, and groundwater level monitoring.

4.9.3 Groundwater Conditions

Groundwater monitoring wells exist within the Seaport Square area and are installed as needed for each development parcel. Groundwater levels are uniform across the area and generally encountered within depths of approximately 10 feet below the ground surface. Design criteria and construction methodologies that protect groundwater will be selected depending on planned basement depths. These include perimeter groundwater cut-off walls around below-grade garages and no permanent dewatering or perimeter drainage systems which could result in groundwater lowering. Temporary construction dewatering will be conducted under appropriate discharge permits.

4.9.4 Groundwater Conservation Overlay District

Most of the Project (except for Blocks H, J, K, and Q) is located outside of the Fort Point Waterfront Subdistrict of the Groundwater Conservation Overlay District (GCOD). The parcels within GCOD have been developed. Remaining parcels are outside of the GCOD.

4.10 Hazardous and Solid Waste

4.10.1 Hazardous Waste

Phase I Environmental Site Assessments (ESAs) have been completed for each development Block. Historically the area was developed for railroad and associated uses. Environmental studies, including chemical testing of soil and groundwater for the presence of Oil and Hazardous Materials (O&HM), have been conducted for each development Block prior to construction to understand specific environmental conditions related to the urban fill soils. Chemical test results on soil samples indicate the presence of contaminants, typical of urban fill materials. Groundwater testing has not indicated elevated concentrations of contaminants in groundwater. Testing of soil and groundwater will be conducted prior to construction on each new development Block to characterize materials to be excavated. Removal of any hazardous waste will be conducted in accordance with applicable laws.

Environmental reporting to the Massachusetts Department of Environmental Protection (MassDEP) of releases, response actions, and soil management activities is conducted in accordance with applicable regulations under the Massachusetts Contingency Plan (MCP) 310 CMR 40.000.

4.10.2 Solid Waste

The 2009 DPIR/DEIR characterized and quantified the solid waste that would generated by the Project. With the changes to the building program, the amounts of waste have increased, as shown in Table 4.10-1.

As described in the 2009 DPIR/DEIR, a loading area will be provided on the ground floor of the residential and hotel buildings. For the residential buildings, recycling and trash chutes will be provided on each floor. Trash will be collected in a dedicated area in a ground floor loading area until pick up by licensed contractor. Solid waste and recycling from the retail and restaurant components will be stored in dedicated areas of the ground floor loading area. A private trash collector will pick up trash as needed.

Table 4.10-1 Solid Waste Generation – 2010 vs. 2016*

Use Type	Generation Rate	2010 Program/Number of Rooms	2010 Solid Waste (tons per year)	2016 Program/Number of Rooms)	2016 Solid Waste (tons per year)
Studio / One Bedroom Units	4 lbs/bedroom/day	1,125 units 1,125 bedrooms	821	1,451 1,451 bedrooms	1,059
Two Bedroom Units	4 lbs/bedroom/day	875 units 1,750 bedrooms	1,278	1,129 2,258 bedrooms	1,648
Three Bedroom Units	4 lbs/bedroom/day	500 units 1,500 bedrooms	1,095	645 1,935 bedrooms	1,413
Hotel	4 lbs/bedroom/day	550 rooms	402	1,230 rooms	898
Office / Cultural	1.3 tons/1,000 sf/year	1,900,000 sf	2,470	2,416,200 sf	3,141
Commercial / Retail / Restaurant	5.5 tons/1,000 sf/year	1,300,000 sf	7,150	1,077,400 sf	5,926
TOTAL			**13,216**		**14,085**

* The development program is approximate and may continue to vary as the Project evolves.

4.11 Construction Impacts

The 2009 DPIR/DEIR included a plan to manage construction activities so that they would not adversely affect either quality of life or the environment. The plan include such matters as air quality, noise, construction staging, construction worker parking, truck traffic and deliveries, excavation, solid waste management and recycling, erosion control, coordination with City departments, rodent control, and public safety and access. The Proponent does not propose changes to these elements of the plan.

The plan also included a schedule for the development of the Project, which assumed that Project construction would be done in phases, would begin in 2011, and would be substantially complete in 2019. Table 4.11-1, present the schedule as it has been updated to reflect construction activity that has occurred or is underway and the phasing plan for the remaining blocks. Project phasing is described more fully in Section 1.9.

Table 4.11-1 Construction Schedule

Phase	Location	Status
Phase 1	Blocks A, K, and L1	Completed 2015
Phase 2	Block H	Completed 2016
Phase 3	Block B, C, and J	Completion in 2017
Phase 4	L2	Completion in 2018
Phase 5	Block M	Completion in 2019
Phase 6	Block D, F, and P	Completion projected in 2020
Phase 7	Blocks L3-L6	Completion projected in 2021
Phase 8	Blocks G and N	Completion in 2022

Chapter 5.0

Sustainable Design and Climate Change Preparedness

5.0 SUSTAINABLE DESIGN AND CLIMATE CHANGE PREPAREDNESS

5.1 Sustainable Design

The 2009 DPIR/DEIR included Leadership in Energy and Environmental Design (LEED) checklists for the LEED ND [Neighborhood Development], LEED NC [New Construction], and Core and Shell Development.

Since the review of the 2009 DPIR/DEIR, the Project has been certified at the Gold level under LEED ND.

In addition, individual buildings have achieved, or will achieve, the following LEED statuses:

- The Envoy Hotel on Block A is LEED Certifiable;
- The buildings on Blocks B and C are targeting LEED Silver;
- District Hall on Block F is certified LEED Silver;
- The buildings on Block H are LEED Certifiable;
- The Yotel building on Block J is targeting LEED Silver;
- The Watermark building on Block K is targeting LEED Gold;
- 101 Seaport on Block L1 is certified LEED Platinum;
- 121 Seaport on Block L2 is targeting LEED Platinum; and
- The buildings on Block M are targeting LEED Silver.

5.2 Climate Change Preparedness

At Seaport Square, compact development, a balanced mix of uses, the opportunity to locate homes and employment near one another, pedestrian- and bicycle-friendly accommodations, and host of measures incorporated into building design and construction will all serve to minimize the Project's greenhouse gas emissions. Nevertheless, the effects of climate change will impact the Project Area, and the Proponent places a high priority on preparing the Project to face them. Climate change conditions considered by the Project team include sea level rise, higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts and more severe rainfall events.

The expected life of the Project is approximately 50 years. Therefore, the Proponent planned for climate-related conditions projected 50 years into the future. A copy of the Climate Change Checklist is included in Appendix D. Because the NPC Project is conceived at the master planning level, the responses to the Checklist are necessarily preliminary.

5.2.1 Extreme Heat Events

According to "Climate Ready Boston," the City of Boston can expect that the number of days with temperatures greater than 90°F will increase from the current 11 days annually experienced between 1971 and 2000, to between 25 and 90 days annually by 2070, depending on the extent of greenhouse gas emissions over the next several decades.[1] Extreme heat can have serious negative impacts on human health and infrastructure, both of which will affect quality of life. The Project design will incorporate a number of measures to minimize the impact of high temperature events, including:

- Addressing solar gain through building orientation;
- Choosing windows and glazing that minimize solar gain;
- Including façade commissioning to identify source of heat loss;
- Installing operable windows where possible;
- Planting shade trees in open spaces on the Project Site;
- Specifying plant materials that tolerate higher temperatures;
- Installing high performance building envelopes to minimize energy requirements to cool buildings; and
- Specifying high albedo roofs and green roofs, where practicable, to minimize the heat island effect.

5.2.2 Sea Level Rise and Future Storms

According to Climate Ready Boston, by 2030 sea level may be as much as eight inches higher than it was in 2000 and could be as high as seven feet higher by 2100. As described in "Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery" recently released by MassDOT (the "MassDOT Report"),

[1] Climate Ready Boston, December 7, 2016.

"one of the challenges presented by the wide range of SLR projections is the inability to assign likelihood to any particular [SLR] scenario."[2] To be conservative, in the year 2070, SLR could be as high as approximately four feet.

Combined with storm surge at an inopportune tide, flooding would be anticipated to occur at the Project Site.[3] The storms in the Boston area that could create these flood conditions would be Nor'easters and tropical storms. In 2017, hurricanes occur less frequently than Nor'easters; however, in the future according to the MassDOT Report, it is anticipated that there will be roughly the same number of tropical storms impacting the Boston area as Nor'easters. In addition, the intensity of storms is anticipated to increase. The risks of each type of storm differ: hurricanes are typically shorter in duration, but are more intense and create a larger storm surge; Nor'easters are longer in duration, but created a smaller storm surge. For this reason, a hurricane would need to impact Boston within a short window to create flooding as shown in the MassDOT Report, while Nor'easters are more likely to create flooding given that they have a higher probability of impacting the area during the rising tide and high tide.

The new FEMA FIRM map that includes the Project Site shows that portions of the NPC Project Site – Blocks D, F, G, M, N, and L -- may be affected by flooding in a 100-year storm event. In addition, the MassDOT Report shows that in 2070, the Project site has up to a 50% chance of flooding annually, with the lowest annual change anticipated at the corner of East Service Road and Congress Street, and the highest annual chance anticipated along Boston Wharf Road, Northern Avenue, and the corner of Seaport Boulevard and B Street. The 100-year flood in 2070 is projected to cause flood levels of approximately 0.5 to 4 feet above ground level, with the lowest anticipated depth at the corner of East Service Road and Congress Street, and the highest anticipated depth along Boston Wharf Road, Northern Avenue, and the corner of Seaport Boulevard and B Street. Taking that into account, along with sea level rise and the projected greater intensity of future storms, the Project includes measures to minimize the impact of potential flooding at the site, including the following:

- Managing water on site through measures such as graywater systems, water detention, and permeable materials;

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2 Massachusetts Department of Transportation, et al. "MassDOT-FHWA Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery." November 2015.

3 The MassDOT Report, funded by the Federal Highway Administration, studied the impact of sea level rise and future storm impacts related to climate change on the Central Artery in Boston. As part of this project, a hydrodynamic model was developed for Boston Harbor, including inland areas that cover portions of Boston, including the Project site. The report states that the model is able to provide site-specific information about the risk of potential future flooding in the years 2030, 2070 and 2100 related to storm events, in particular Nor'easters and tropical cyclones (i.e., hurricanes).

- Locating critical mechanical equipment and residential uses above the potential flood level;
- Using flood barriers – movable or permanent, as appropriate – to prevent water from entering parking garages, ground floors, and other low lying portions of the site;
- Where practicable, both the lobbies and public spaces of the Project will be raised above the potential flood elevation for applicable blocks;
- Designing higher ceiling heights on ground floors to allow flexibility to adapt to sea level rise;
- Installing water-tight conduits;
- Enhancing building resilience through back-up outlet circuits, high performance buildings, and cool rooms; and
- Incorporating salt tolerant plant materials in flood prone open spaces.

5.2.3 Rain Events

As a result of climate change, the Northeast is expected to experience more frequent and intense storms, as discussed above, and greater annual precipitation. To mitigate this, the Proponent will take measures to minimize stormwater runoff and protect the Project's mechanical equipment. The Project will be designed to reduce the existing peak rates and volumes of stormwater runoff from the site, and promote runoff recharge to the greatest extent practicable. The Project will increase the pervious area on the site from the existing condition, by replacing paved parking lots with landscaped open space; this change will allow significant volumes of e infiltration on the Project Site. Additional measures include:

- Planting green roofs where practicable;
- Incorporating pervious materials;
- Increasing stormwater detention;
- Locating critical mechanical and electrical equipment at the highest elevation possible to prevent exposure to flood waters; and
- Locating the backup generators above the potential flood elevation.

5.2.4 Drought Conditions

Although more intense rain storms are predicted, extended periods of drought are also predicted due to climate change. Plans for Seaport Square anticipate extended periods of below normal rainfall. Measures to be incorporated in the Project may include the following:

- specifying drought tolerant native and adaptive plant materials
- Installing high efficiency irrigation systems;
- Using non-potable water for irrigation, where feasible;
- Choosing appliances and plumbing fixtures for their water conservation characteristics, and
- Using graywater to conserve potable water supplies.

Chapter 6.0

Urban Design

6.0 URBAN DESIGN

6.1 Urban Design Context

The development plan outlined in the NPC sets forth a vision for the future development of the Seaport District, an area that has witnessed tremendous growth in the past 15 years. Located in central proximity to the Financial District, South Station, the vibrant and historic Fort Point neighborhood, the BCEC, and Boston Harbor, the Seaport District is emerging as a great 21st century neighborhood of Boston.

The Seaport District is well connected to downtown by major vehicular arterials, including Summer Street, Congress Street, Seaport Boulevard, and Northern Avenue. Despite this, legible pedestrian connectivity within the Seaport District and from the southern portions of the Seaport District to the water's edge remains challenging, especially from the elevated roadway grade of Summer Street and areas south of Summer Street. The Proponent envisions a major opportunity to remedy this longstanding challenge by creating a central organizing pedestrian spine connecting Summer Street and the area beyond directly to the water's edge and facilitating connections between the Seaport's many civic and cultural assets—the Institute of Contemporary Art (ICA), the BCEC, the Fort Point Channel Landmark District, the Lawn on D, and in particular the Harborwalk and the many transportation and recreation opportunities afforded by the Seaport's proximity to Boston Harbor, as shown in Figure 6-1.

The NPC Project plan represents an opportunity to address the Seaport's pedestrian connectivity and public realm challenges by proposing a cohesive plan for a vibrant mixed-use district anchored by a strong and pedestrian-oriented public realm framework. The NPC Project will create a memorable civic experience in the heart of the Seaport District, as well as dramatically improve the pedestrian experience within the Seaport District and connectivity to the water's edge.

6.2 Project Evolution

In 2010, The Boston Redevelopment Authority approved a Planned Development Area (PDA) for the 33-acre Seaport Square Project. The PDA envisioned a mixed-use development framework as a series of towers set back from full block podia alongside a set of green lawns and tree-lined streets. While much of the urban design intent and specific parcelization embodied in the 2010 PDA remains intact as part of the NPC Project, specific elements of the 2010 PDA are modified in the updated NPC Project to further enhance the public realm in the Seaport.

Seaport Square Boston, Massachusetts

SEAPORT

Figure 6-1

Seaport Urban Design Connectivity

6.2.1 Circulation

The 2010 PDA conceived Harbor Street as a partial street to provide vehicular access to Blocks L3 through L6, serving in part as a private cul-de-sac that created a ring road around a green space within the L-Blocks. Most impactfully from an urban design perspective, Harbor Street connected to the Summer Street viaduct by way of an elevated vehicular bridge over Congress Street. While at the time this idea was conceived in 2006-2007, Congress Street in Fort Point was not well-amenitized with pedestrian amenities, today Congress Street in Fort Point is among the most vibrant and bustling streets in the entire Seaport and is a regional culinary destination. This transformation of Congress Street from a largely lifeless and utilitarian vehicular thoroughfare to an attractive and vibrant pedestrian environment calls for a revised approach to the transition between Congress Street in the Fort Point Channel Landmark District and the new Seaport development area. The previously approved construction of a vehicular bridge over this important pedestrian corridor would have created a major visual and psychological barrier between the new Seaport development area and the Fort Point Channel Landmark District, and from today's perspective would be an entirely inappropriate way to mark the transition between the rich character of the historic Fort Point urban fabric and the energy and retail density of the newly developed mixed-use Seaport project. As a result of these urban design considerations and the very low vehicular volume projected to make use of the elevated roadway into the L-Blocks, the NPC Project proposes to re-conceive Harbor Street as Harbor Way, a pedestrian- and bicycle-oriented "walk to the sea" that strengthens the Seaport District's connection to the water's edge, extending from Summer Street near the BCEC to the Boston Harborwalk. The proposed pedestrian link will occur at grade, rather than on elevated on a viaduct, and will make the 24-foot vertical transition from Summer Street to Congress Street at the Grand Stair between Blocks N and P. This transition over a 10-year period from a vehicular connection to a pedestrian axis is emblematic of the evolution in thinking about the most effective approach to managing traffic congestion in the Seaport District – rather than constructing more elevated roadways, the NPC Project proposes to create a major pedestrian thoroughfare that will be well-used by commuters, residents, and visitors alike.

6.2.2 Public Realm

The 2010 Project's public realm amenities, while meaningful individually, are often discontinuous when viewed through a district-wide lens, and composed in part of internalized and passive green spaces such as Seaport Hill, which would have served mostly as a front lawn for the buildings encircling it due to its second story elevation and encirclement by a vehicular roadway. The NPC Project seeks to establish a more legible, cohesive, and diverse network of public open spaces. In addition to the district-wide pedestrian connection offered by Harbor Way, each of the District's major thoroughfares (Seaport Boulevard, Northern Avenue, Pier 4 Boulevard, and Boston Wharf Road) has been designed to create bold and enticing streetscapes that both unify the District and create moments of surprise for pedestrians who walk along their length. While a hierarchy of pedestrian connectivity is implied by the creation of Harbor Way, the Proponent recognizes that all of the major vehicular thoroughfares crisscrossing the district require improvement in terms of pedestrian amenities and streetscape quality. The NPC Project proposes a series of improvements to these major thoroughfares as further enhancements to the overall public realm in the district.

6.2.3 Building Massing

The NPC Project seeks to leverage opportunities to create strong and legible public realm experiences not only in plan view but also as three-dimensional "urban rooms" defined by sculpted building massing and thoughtful adjacencies of building types and massing designed to articulate a new urban experience and skyline while maximizing sunlight and skylight in major public spaces, as shown on Figures 6-2 and 6-3.

Expanding upon themes of the original PDA, the NPC Project also incorporates guidelines and strategies for resilience planning, sustainability, and program diversity. The NPC Project presents a re-envisioned framework for the remaining development in the Seaport District, with a similar series of smaller scaled development blocks, a powerful pedestrian promenade that benefits from thoughtful and coordinated massing strategies and that serves as an organizing feature for the entire district.

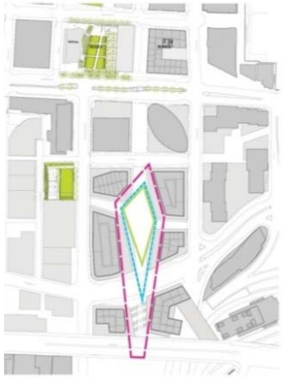
The Proponent intends that the zoning envelopes included in the Amended & Restated PDA Development Plan will inform and guide the massing of the remaining development parcels to create groupings of buildings that, despite having different architectural styles, materials vocabulary, and design ethos, nonetheless respect the Proponent's desire to create high quality and enjoyable public spaces at the groundplane surrounding these buildings.

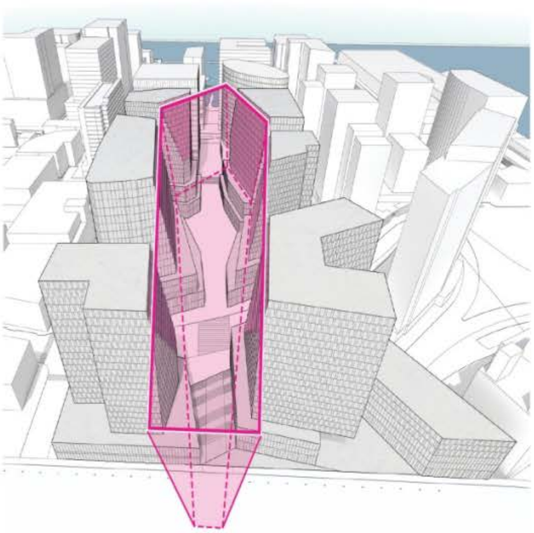
6.3 Urban Design Framework

Key elements of the NPC Project's urban design framework include a number of important objectives: the creation of a series of porous, smaller-scaled blocks and retail storefronts similar to those in the Fort Point neighborhood; introduction of a powerful pedestrian promenade through the Project Area from Summer Street and areas beyond all the way to the water's edge; the transformation of key vehicular thoroughfares to more pedestrian- and bicycle-friendly ways without reducing vehicular throughout capacity; the creation of a network of civic and cultural destinations; and the implementation a dynamic, coordinated massing strategy for remaining development sites. The Urban Design Framework is shown on Figure 6-4.

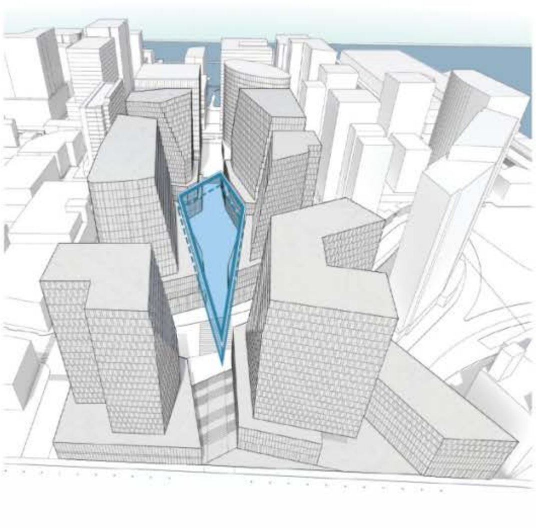
6.3.1 Pedestrian Promenade to the Sea

The 2010 Project conceived Harbor Street as a vehicular street to provide vehicle access to the interior of Blocks L3 through L6, as well as a small volume of traffic destined for Boston Wharf Road and East Service Road. The NPC Project, which includes the proposed Harbor





THE DISTRICT



THE BUILDING BASE

THE PLAZA

It is at the scale of the District that one understands the monumental Urban Room, a defining form that connects the elevated Summer Street to the waterfront along Harbor Way. The upper stories of the four L blocks, N and P step back and/or are shaped to mitigate prevailing winds and hold daylight on stair and square.

Above the two-story base, the building steps back for a scale more appropriate for residential or commercial use. This middle scale is an essential response to sun angles, and offers an elevated ground plane for mid-level green space.

The ground plane is malleable at its edges, able to support retail at a variety of scales, with seasonal public activities. Buildings are angled to from the approach points, with the narrower allies opening up to a central plaza.

Figure 6-2

Urban Room

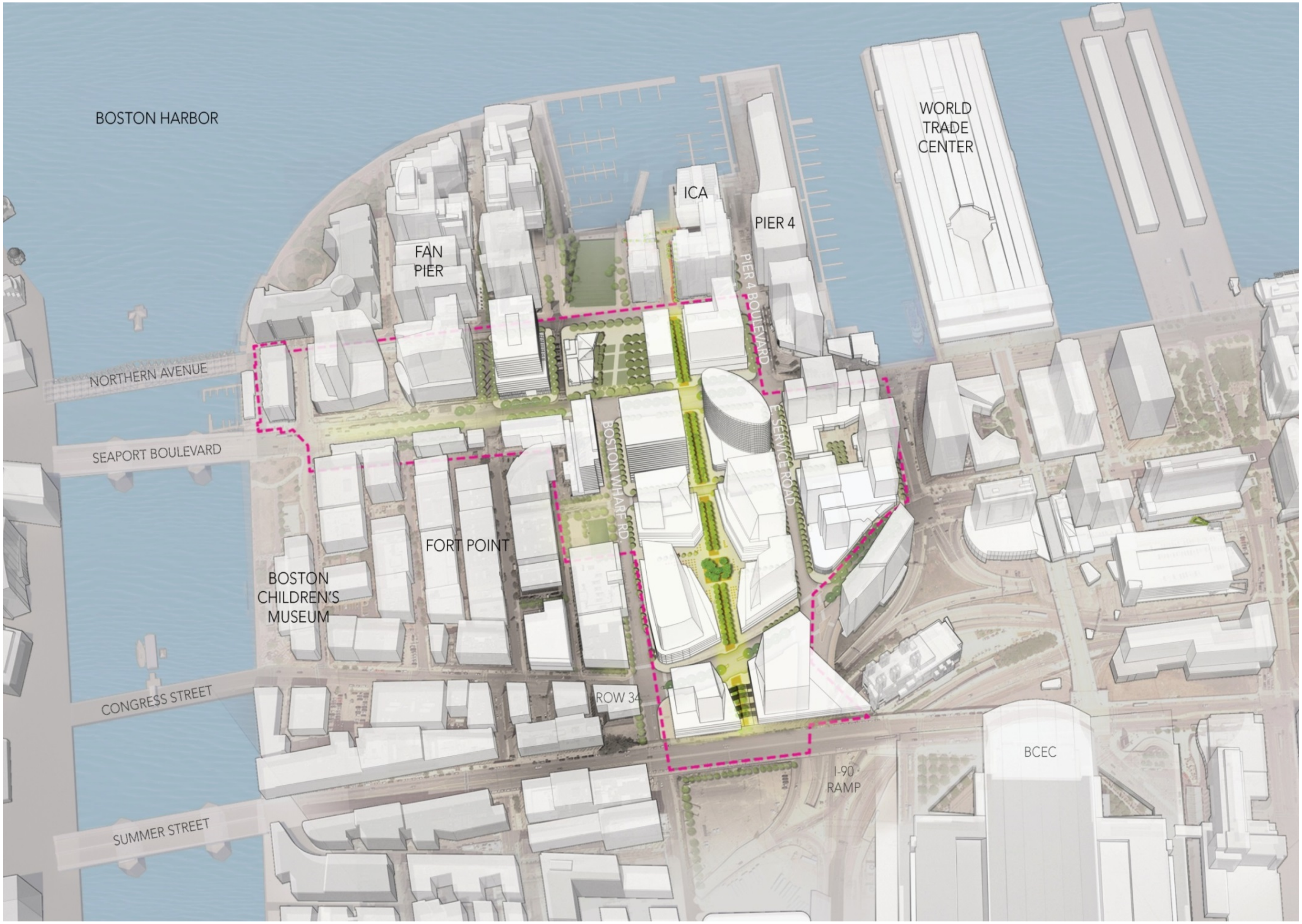


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Figure 6-3

Massing Scenario

Seaport Square **Boston, Massachusetts**

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Figure 6-4

Urban Design Framework Strategy

Way pedestrian connection, creates a strong physical and visual axis punctuated by a series of unique moments and experiences—from a Grand Stair at Summer Street, to the Harbor Square urban piazza surrounded by Blocks L3 through-L6, to the intimate retail corridors extending to the Harbor. This vision eliminates a bridge over Congress Street that was proposed in the 2010 Project, maintaining Congress Street's 19th century streetscape scale and texture and dramatically improving the quality of the public realm. Pedestrian connectivity is enhanced by lateral retail ways that extend from Harbor Square to surrounding streets to further enhance and knit together the surrounding parcels and public realm amenities such as Sea Green and the Block M retail amenities.

6.3.2 Signature Public Spaces

The 2010 Project's public realm amenities, while meaningful individually, are often discontinuous when viewed through a district-wide lens, and composed in part of internalized and passive green spaces such as Seaport Hill, which would have served mostly as a front lawn for the buildings encircling it due to its second story elevation and encirclement by a vehicular roadway. The NPC Project seeks to establish a more legible, cohesive, and diverse network of public open spaces. The pedestrian Harbor Way will become a major public destination and complete an important connection between Summer Street and the water's edge, forming the "Harbor Loop," a 1.5 mile walk that combines the beauty of Boston Harbor with the architectural character of historic Fort Point with the energy and retail vibrancy of Harbor Way through the heart of the Seaport District. Harbor Way will also be interspersed with and provide connections to a number of signature public spaces throughout the Seaport District such as Seaport Common, Sea Green, the Block M Courtyard, and various cultural and civic uses that today feel disconnected due to lack of direct pedestrian- and bicycle-oriented linkages. The central open space on the Blocks L3 through L6 and the Grand Stair between Blocks N and P will serve as both captivating visual features and nodes of intense urban activity, and will provide nodes of interest that complement the major pedestrian axis of Harbor Way. The combination of Harbor Way and Harbor Square is envisioned to host a myriad of public events and programs that will add community life and interest to these public open spaces throughout the year and at different times of day. Fundamentally, the NPC Project's vision is to create a major new piece of public realm that all Bostonians can enjoy and that will become a signature of the Seaport district that is used and enjoyed by residents and visitors alike.

6.3.3 Improvements to Key Thoroughfares

Each of the major thoroughfares (Seaport Boulevard, Northern Avenue, East Service Road, and Boston Wharf Road) has been designed to create bold and enticing streetscapes as part of the NPC Project's implementation. Improvements to these thoroughfares have already begun as part of the 2010 Project, but the NPC Project enhances these improvements and responds directly to the Proponent's belief that great neighborhoods have to start with great streetscapes and pedestrian-oriented roadway sections. New development, active uses and a new signature streetscape design led by the landscape architect of New York's High Line park will reshape Seaport Boulevard, in particular, transforming it from an auto-dominated thoroughfare into a pedestrian-oriented and bicycle-friendly urban destination in its own right. East Service Road and Boston Wharf Road will be lined with bustling retail, café seating, street trees and furniture and will continue to provide access to pedestrians, bicycles and vehicles. Boston Wharf Road will lose on-street parking in favor of new buffered bike lanes on both sides of the street.

6.3.4 Coordinated, Dynamic Massing Strategy

Blocks L3 through L6 in combination with Blocks N and P have been carefully massed to create a series of upper-level "urban rooms" — an ever-changing frame of the sky as one moves along Harbor Way. The revised massing strategy also sculpts the proposed buildings to maximize sunlight in the major public spaces while preserving realistic floorplates and appropriate distances between buildings. Special attention has been given to the view down Congress Street toward Blocks N and P so as to establish an anchor at its eastern visual terminus at the Grand Stair and provide a visual inflection point toward the Harbor so that pedestrians traveling east from within the Fort Point District have a wayfinding point at which there is a direct connection both visually and in terms of landscape cues to the water's edge. Furthermore, the removal of the previously approved vehicular bridge over Congress Street opens up views from the east into the Fort Point Channel Landmark District, ensuring good pedestrian legibility between the newly developed Seaport parcels and the historic character of buildings and many local businesses located in historic Fort Point.

6.4 Connectivity as a Public Benefit

The NPC project improves the quality and connectivity of the public realm and the distribution of civic and cultural uses within the Seaport District. Harbor Way and Harbor Square replace the 2010 PDA-proposed vehicular bridge connection to Seaport Hill Green to create a new retail-lined, pedestrian-oriented "walk to the sea." This major organizing element will provide continuous pedestrian connectivity from Summer Street all the way to the water's edge, eventually combining with the Harborwalk to complete a recreational loop that will appeal to residents, commuters, and visitors alike. As a result of this major public realm intervention, pedestrian access to and through the district's multiple public open spaces is enhanced and prioritized over vehicular access and will be of benefit to multiple populations within the district and beyond. In general, the NPC Project's focus on improving pedestrian connectivity and the pedestrian realm will promote more sustainable commuting patterns by public transit, by water transportation, by bicycle, and by foot. The NPC Project's public realm improvements will also benefit local and area residents by creating pleasant, pedestrian-oriented retail-lined streets and pathways that will provide both everyday neighborhood conveniences and also destination retail and restaurant amenities that together will significantly enhance the quality of life in the South Boston Waterfront neighborhood.

Chapter 7.0

Historic Resources

7.0 HISTORIC RESOURCES

7.1 Introduction

This section describes the progress that the Proponent had made in relocating the Chapel of Our Lady of Good Voyage since the filing of the 2009 DPIR/DEIR. No changes are proposed to other matters relating to historic resources that were described in the DPIR and no meaningful additional impacts on Historic Resources in the vicinity of the Project Site are anticipated in connection with the NPC project.

7.2 The Chapel of Our Lady of Good Voyage

Prior to commencement of construction, the Project Site consisted generally of large, surface parking lots, devoid of buildings or other structures. The only building then located on the Project Site was the Chapel of Our Lady of Good Voyage (the "Chapel"). While included in the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth, the Chapel was not listed in either the State or National Registers of Historic Places.

The Chapel of Our Lady of Good Voyage was located at 65 Northern Avenue, on Block D. The DPIR described the proposed demolition of the existing Chapel structure. It also mentioned discussions between the Proponent, the City, and the Roman Catholic Archdiocese of Boston (RCAB) about the relocation and construction of a new Our Lady of Good Voyage Chapel on Block H. Since the time the DPIR was filed, a new chapel facility has been constructed on Block H of the Project Site, located at the gateway to the Seaport District at the foot of the Moakley Bridge, and has been turned over to the RCAB for interior construction of the RCAB's improvements. Figure 7-1 is a photograph of the new Chapel. The RCAB is currently underway with interior construction and it is anticipated that the relocated chapel will open to the public in the spring of 2017. The new site provides better access and visibility for the Chapel, allowing it to expand to better serve the needs of the growing neighborhood. In connection with the removal of the existing Chapel structure on Block D of the Project Site, the Proponent has executed a Memorandum of Agreement with the Massachusetts Historical Commission, to which the Boston Landmarks Commission is a party, and the Proponent has successfully fulfilled the stipulations required by the MOA, including the preparation of Archival Photographic Documentation and an Architectural Salvage Plan.

An Article 85 Demolition Delay application regarding the existing Chapel structure will be submitted in the spring of 2017.

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Figure 7-1

The Chapel of Our Lady of Good Voyage

Chapter 8.0

Accessibility

8.0 ACCESSIBILITY

The Proponent is committed to construct the public realm improvements and the NPC Project Blocks in accordance with the 2010 Americans with Disabilities Act ("ADA") Standards for Accessible Design and 521 CMR Massachusetts Architectural Access Board ("MAAB") Regulations.

8.1 Assessment of Existing Infrastructure for Accessibility

The site is located within the Seaport District, adjacent to Downtown Boston and the Boston Harbor. It consists of a mix of historic warehouses and other buildings, as well as a number of new mixed-use office and residential buildings that have been constructed over the last five to ten years. It is well-served by accessible MBTA connections within a ten minute walk, including:

- South Station: 0.5 miles
- Silver Line Courthouse Station: 0.1 miles
- Silver Line World Trade Center Station: 0.1 miles

The most significant public institution is the Moakley U.S. Courthouse, which is adjacent to the Project Site on Northern Avenue.

8.2 Existing Surrounding Site Conditions

There are currently sidewalks and pedestrian ramps on most blocks of the Project Site, and these are generally intended to remain as is or be replaced with wider or otherwise upgraded materials and dimensions. Accessible sidewalks and pedestrian ramps have been installed in conjunction with the following Blocks: A, B, C, F, H, J, K, and L1, and are underway for L2, M1, and M2. The site is adjacent to the historic Fort Point Channel neighborhood, but is not itself within the historic district boundaries.

8.3 Proposed Surrounding Site Conditions

The proposed design is envisioned as a highly accessible pedestrian-oriented area with all building uses and exterior spaces meeting ADA and MAAB guidelines as required by the Commonwealth of Massachusetts. Sidewalk cafes will be programmed and designed for specific buildings in conjunction with City of Boston regulations on accessible paths of travel. Proposed sidewalks are consistent with the Boston Complete Street Guidelines, with the most prominent Street Types including Downtown Core and Downtown Mixed-Use. As part of this Project, pedestrian easements will be sought with the City of Boston Public Improvement Commission for pedestrian right of ways within the Project Site as Block-specific designs progress.

8.4 Proposed Accessible Parking

The Proponent will construct up to 3,400 parking spaces in the NPC Project through a mix of garages and on-street parking spaces. The required number of accessible parking spaces will be provided in the NPC Blocks within garages and on streets. Accessible spaces will be designated as specific Blocks and buildings are designed.

8.5 Circulation and Accessible Routes

Accessible paths of travel will be provided on the public and private ways throughout the Project Area. Accessible entrances will be provided to new building lobbies and retail areas within the NPC Project.

A prominent feature of the Project is the inclusion of the Summer Street Steps that connect the elevated portion of Summer Street down to Congress Street, through Harbor Way to Seaport Boulevard, and Northern Avenue to the water's edge. A publically accessible elevator will be provided, integral to the building design on Block N or P (whichever is constructed earlier) that creates an equal experience to that of the Summer Street Steps. The elevator will be clearly marked with signage, easily accessible from Summer Street and Congress Street, and integrated into the overall design of the pedestrian circulation network through the Project Site.

8.6 Accessible Units in Residential Developments

The Proponent will provide at least the number of required accessible residential units in the residential and hotel developments as part of the NPC Projects. The specific design and location of the units will be determined as specific Blocks are designed. The proposed designs will be presented to the City of Boston Mayor's Commission for Persons with Disabilities Advisory Board as they are developed.

Chapter 9.0

Infrastructure

9.0 INFRASTRUCTURE

9.1 Introduction

The following section outlines the existing utilities surrounding the Project Site, the Project-related utilities installed to date, the remaining planned utilities, the connections required to provide service to the Project, and any impacts on the existing utility systems that may result from the construction of the Project. The following utility systems are discussed herein:

- Sewer
- Domestic water
- Fire protection
- Drainage

The Proponent is committed to providing the Boston Water and Sewer Commission ("BWSC") the necessary infrastructure upgrades and information it needs to approve the requested connections to ensure capacity of the **sewage systems**.

The Proponent has worked with BWSC to determine that there are no known capacity issues with the existing **water mains**. The distribution system is expected to have sufficient capacity to supply all phases of the Project, along with other planned projects in the area.

Each Block is being designed to minimize impervious area as much as possible in combination with on-site **stormwater** management systems to significantly reduce the peak runoff rates from the Project Site. The Project's intent is to direct stormwater flows to BWSC outfalls, rather than to private outfalls. In addition, each new Block will be designed to meet BWSC requirements for stormwater storage on site to the greatest extent practicable by providing either underground recharge systems or a combination of interior tanks with groundwater recharge wells.

The Project will comply with DEP's Stormwater management Policies.

9.2 Wastewater

9.2.1 Existing Sewer Infrastructure – 2017

The local wastewater collection system is owned and operated by BWSC. The system conveys wastewater to the Massachusetts Water Resources Authority ("MWRA") system, which flows to the MWRA Deer Island Wastewater Treatment Plant.

There were several existing sewer lines serving the Project area prior to start of construction. Since the commencement of construction, several sewer improvements have been completed as part of the Project. Below is a summary of the infrastructure currently in place.

The following sewers mains flow to the Trilling Way Pump Station:

- Northern Avenue: Adjacent to Blocks A and B, a 6-inch private sanitary sewer main in the southern side of Northern Avenue and a 10-inch BWSC sanitary sewer main in the northern side of Northern Avenue flow easterly and are combined with a BWSC 12-inch sanitary sewer main flowing south from Courthouse Way. Once combined, these lines flow easterly in a 15-inch BWSC sanitary sewer main in Northern Avenue to Pier 4 Boulevard, where the line turns and flows south and then southeast, where it connects into the existing 18-inch BWSC sanitary sewer main in Seaport Boulevard. The final 375 feet of the 15-inch line within Northern Avenue and the 160 foot portion within Pier 4 Boulevard are newly completed lines approved by BWSC and installed by the Proponent, in cooperation with several adjacent landowners, as part of the realignment of Northern Avenue and the extension of East Service Road (new Pier 4 Boulevard).

- B Street: A 12-inch BWSC sanitary sewer main flows northerly and connects to the existing BWSC 18-inch sanitary sewer main in Seaport Boulevard. As part of the Block M project, this 12-inch main will be removed and replaced to service a portion of the Block M project.

- Seaport Boulevard: The 18-inch BWSC sanitary sewer main flows easterly, past the World Trade Center and eventually to the BWSC Trilling Way pump station. Wastewater flows are pumped in a southerly direction to a gravity sewer in E Street just south of Summer Street. The E Street sewer flows southerly to a connection with the North Branch of the South Boston Interceptor at West First Street.

The following sewer mains flow to the 24-inch BWSC sanitary sewer main in A Street, and ultimately flow to Deer Island:

- Seaport Boulevard: An 8-inch BWSC sanitary sewer main in the south side of Seaport Boulevard flows westerly to the 12-inch BWSC sanitary sewer main in Sleeper Street. The 12-inch BWSC sanitary sewer main continues flowing southerly and connects to a 15-inch BWSC sanitary sewer main in Congress Street. The 15-inch BWSC sanitary sewer main in Congress Street flows easterly, and then southerly to the 24-inch BWSC sanitary sewer main in A Street.

- Farnsworth Street: A 12-inch BWSC sanitary sewer main beginning in Seaport Boulevard flows southerly in Farnsworth Street before connecting to the 15-inch BWSC sanitary sewer main in Congress Street. The 15-inch BWSC sanitary sewer main in Congress Street then flows easterly, and then southerly to the 24-inch BWSC sanitary sewer main in A Street

- Thomson Place: A 12-inch BWSC sanitary sewer main in Thomson Place flows southerly to the 15-inch BWSC sanitary main in Congress Street. The 15-inch BWSC sewer main in Congress Street then flows easterly and then southerly to the 24-inch BWSC sanitary sewer main in A Street.

- Congress Street: A 10-inch BWSC sanitary sewer main in the southern side of Congress Street begins at the intersection Boston Wharf Road and flows westerly to the 24-inch BWSC sanitary sewer in A Street.

- Boston Wharf Road. A 12-inch sanitary sewer line was constructed in Boston Wharf Road from Congress Street to 200 feet north of Autumn Lane to serve 101 Seaport ([Block K) and the future development Block L3. The sewer main was completed in 2014.

- Autumn Lane: A 12-inch sewer line was constructed in Autumn Lane from Boston Wharf Road to East Service Road in 2016. This sewer main is located within a BWSC sewer easement. This sewer serves 121 Seaport (Block L2) and the future development of Blocks L3, L4, and M.

- The 24-inch BWSC sewer main in A Street eventually connects to the North Boston Branch of the South Boston Interceptor at West First Street.

The 2017 existing sewer system is illustrated in Figure 9-1.

9.2.2 Wastewater Generation

The Project's sewage generation rates were estimated using 310 CMR 15.203 and the proposed building program. 310 CMR 15.203 lists typical sewage generation values for the proposed building use. Typical generation values are conservative values for estimating the sewage flows from new construction. Peak daily flows from the Project Site were estimated by applying a peaking factor of three to the estimated average daily flows using the sewage generation values to consider normal daily demand fluctuations and mechanical discharges.

Prior Project approvals estimated the proposed sewer generation for the Project to be approximately 770,000 gallons per day (gpd). Based on the updates in the Project building programs proposed within this NPC, there is a decrease in the amount of retail, hotel, and cultural space and an increase in office and residential space. As a result, the sewer flow

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Figure 9-1

Existing Sewer Systems

for the Project is estimated to be approximately 1,099,006 gpd, which represents an increase of 329,006 gpd. Table 9-1 presents a summary of the Project's currently-proposed wastewater generation.

Table 9-1 Project Wastewater Generation

Block	Building Use	Total Flow (gpd)	Approximate Water Demand (gpd)
A	Hotel	21,375	23,513
B+C	Residential/Retail	200,935	221,029
D	Retail/Office	35,645	39,210
F	Retail/Office	7,625	8,388
G	Retail/Residential	132,410	145,651
H	Church/Office/Retail	1,617	1,779
J	Hotel	38,060	41,866
K	Retail/Residential	57,566	63,323
L1	Office/Retail	46,282	50,910
L2	Office/Retail	29,980	32,978
L3	Residential/Retail	83,320	91,652
L4	Retail/Office	37,241	40,965
L5	Retail/Office	51,350	56,485
L6	Retail/Hotel	45,450	49,995
M1+M2	Retail/Residential	156,960	172,656
N	Retail/Residential	80,600	88,660
P	Retail/Office	72,390	79,629
Q	Retail	200	220
Proposed Sewer Flows (gpd):		1,099,006	-
Proposed Water Demand (gpd):			1,208,907

9.2.3 *Existing Sewage Capacity*

The Project has previously evaluated the capacity of the existing BWSC sewer mains in Sleeper Street, Farnsworth Street, Congress Street (north side), Congress Street (south side), and A Street. Efforts have been made to direct sewer flows to the A Street gravity sewer, rather than using the Trilling way pump station and the E Street sewer which currently handle the flows from other areas of the South Boston Seaport, including Fan Pier.

Flow to Trilling Way Pump Station

The 2009 DPIR/DEIR anticipated that the only sewer flows that the Project would send to the Trilling Way Pump Station would be from Blocks F and G, which were projected to contribute approximately 59,000 gpd, or approximately eight percent (8%) of the total 2010 Project flows. This was expected to contribute less than 0.1% of the capacity of the Trilling Way Pump Station. However, as construction has progressed and existing conditions have been better understood, the volume of sewage directed to the Trilling Way Pump Station is expected to increase to approximately 243,000 gpd, or 20 percent of the total Project flows, and will come from Blocks D, F, G, and M1. Nitsch has kept BWSC apprised of these changes and has received BWSC's verbal approval. As a result, the projected flows would contribute approximately 0.4% of the capacity of the Trilling Way Pump Station. The estimated flows directed to the Trilling Way Pump Station due to the Project have increased because of the following proposed building designs and unexpected existing conditions discovered during construction:

- The proposed program for Building G has been updated from hotel and residential with retail space to residential with retail space, resulting in an increase in anticipated flow of approximately 44,191 gpd. The program may, in fact, be hotel and residential with retail space, and, in this case, the anticipated flows will be similar to the flows estimated in the 2009 DPIR/DEIR;

- The proposed program for Blocks P and P1 may be either hotel or lab and office space. For this study, the program was assumed to be hotel, because it would generate greater flows than would lab and office space;

- During the installation of a planned 12-inch sanitary sewer main in the north side of Seaport Boulevard, originally intended to service Blocks B, C, and D, existing utilities and Courthouse Station prevented the sewer main from being extended far enough east to Block D, which prevents it from connecting to the 12-inch sewer main; and

- The Block M1 sewer services have been designed to connect into the 15-inch sewer main in Seaport Boulevard or the 12-inch sewer main in B Street and are approved by BWSC.

The remaining sewer flows from the Project will be directed to the 24-inch BWSC sewer main in A Street via existing, newly constructed BWSC sewer mains in Sleeper Street, Farnsworth Street, Thomson Place, Boston Wharf Road, Autumn Lane, and Congress Street, in addition to new sewer main infrastructure proposed to be built as part of the Project.

New BWSC sewer mains have and will be constructed throughout the Project Area to convey wastewater to collection points in the BWSC system. Table 9-2 summarizes findings related to existing wastewater infrastructure in place when Project construction began in 2011, the anticipated Project flows at each connection point based on the NPC Project, and the flows corresponding percentage of the system capacity.

Table 9-2 Existing Sewer Capacity

Location	Size	Slope	Sewer Capacity (cfs)*	Peak Flow From Project Site (cfs)	Percent (%) of Capacity
Sleeper Street*	12-inch	0.013	2.49	0.11	4.4%
Farnsworth Street*	12-inch	0.007	2.98	0.18	6.0%
Thomson Place	12-inch	0.005	2.66	0.16	6.0%
Congress Street (north side)*	15-inch	0.003	3.54	1.19	33.6%
Congress Street (north side)	15-inch	0.005	2.51	2.45	97.6%
Congress Street (south side)*	10-inch	0.006	1.69	1.15	68.0%
A Street*	24-inch	0.001	7.15	5.23	73.2%

*Sewer Capacity Values provided in the 2009 DPIR/DEIR.

The Proponent has worked with the BWSC to address sewer capacity throughout the development of each individual block thus far. Based on the increase in projected sewer generation due to the NPC Project, Table 9-2 demonstrates adequate capacity in the BWSC sewer mains. The new 12-inch sewer mains in Seaport Boulevard, Boston Wharf Road, and Autumn Lane, the proposed 12-inch sewer mains in East Service Road, and the new 12-inch sewer main to be installed as part of the 399 Congress Street project have been coordinated with the BWSC.

As the designs of the new BWSC sewer infrastructure have progressed, more available information relating to the capacity of the new infrastructure and its impacts on existing flow points is being evaluated. Project flows have been introduced to the existing BWSC system over several years, and will continue as new Blocks are developed. The Proponent will continue to work with BWSC to understand potential impacts of the other planned projects and better define the existing flow condition at the time of development. The Proponent is committed to working with BWSC to provide the infrastructure upgrades and information that BWSC needs to approve the requested connections.

The following list identifies the improvements and connections that have been made to the sewer system to provide service to the Project:

- At Block A, an 8-inch building service was connected to the 10-inch sewer main in Sleeper Street;
- Blocks B and C were connected to the new 12-inch sewer main in the northern side of Seaport Boulevard, which connects to the existing 12-inch BWSC main in Farnsworth Street; the new 12-inch sewer main in Seaport Boulevard was constructed to service only Blocks B and C.
- Block H building services were connected to the 8-inch main in Seaport Boulevard;
- Block J building service was connected to the existing 12-inch sewer main in Farnsworth Street;
- Block K building services were connected to the existing 12-inch sewer main in Thomson Place and the new 12-inch sewer main in Boston Wharf Road;
- Block L1 building services were connected to the new 12-inch sewer main in Boston Wharf Road;
- Block L2 building service was connected to the new 12-inch sewer main in Autumn Lane; and
- District Hall building is served by an 8-inch sewer service that connects to the 15-inch sanitary sewer in Northern Avenue.

The list below identifies the improvements and connections proposed to be made as Project development continues. The proposed sewer systems are shown on Figure 9-2.

- Blocks D, F (retail), and G will connect into the 15-inch sewer main in Northern Avenue;
- Block M1 building services are designed to connect into the 15-inch sewer main in Seaport Boulevard and the 12-inch sewer main in B Street, which is proposed to be reconstructed as part of the Project;
- Block M2 building services have been designed to connect to the proposed 12-inch sewer main in East Service Road;

- Block L3 building services will likely connect into the new 12-inch sewer main in Autumn Lane and/or the new 12-inch sewer main in Boston Wharf Road;

- Block L4 building services will connect into the new 12-inch sewer main in Autumn Lane and/or the proposed 12-inch sewer main in East Service Road;

- Block L5 building services will connect into the new 12-inch sewer main in Boston Wharf Road and/or a new 12-inch sewer main in the northern side of Congress Street (by others);

- Block L6 building services will connect into the proposed 12-inch sewer main in East Service Road and/or a 12-inch sewer service in the north side of Congress Street (by others); and

- Blocks N, and P building services will connect into the new 12-inch sewer main which will be constructed as part of the 399 Congress Street Project.

Improvements and connections to BWSC infrastructure for the remaining blocks will be reviewed as part of the BWSC's Site Plan Review process for the Project. This process will include a comprehensive design review of the existing and proposed service connections, an assessment of Project demands and system capacity, and the establishment of service accounts.

9.2.4 Infiltration/Inflow

The Project will be served entirely by separate sanitary and storm drain systems, and not by combined sewers. As a result, the infiltration and inflow (I/I) impact from the post-development Project Site is minimal. The Proponent has worked, and will continue to work, with the BWSC on a block-by-block basis to develop I/I mitigation commitments.

9.3 Water Supply

9.3.1 Existing Water Infrastructure

Water is supplied to the Project area by low- and high-pressure distribution and transmission mains owned and operated by BWSC. Water is supplied to the BWSC systems by the MWRA. There are five water systems within the City, and these provide service to portions of the City based on ground surface elevation. The five systems are southern low (commonly known as low service), southern high (commonly known as high service), southern extra high, northern low, and northern high.

There are existing BWSC water mains within the Project area. Low-pressure service mains, typically used for domestic water supply, and high-pressure distribution mains, typically used for fire protection systems, are available in the roads surrounding the Project Site, including Northern Avenue, Seaport Boulevard, Sleeper Street, Farnsworth Street, Thomson

Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 9-2

Proposed Sewer Systems

Place, Boston Wharf Road, East Service road, B Street, and Congress Street. The local distribution mains are fed from a 30-inch cast iron transmission main in Sleeper Street and Northern Avenue. Hydrants are located along the streets throughout the Project. Figure 9-3 shows the existing BWSC water systems.

The following list describes the new water infrastructure installed as part of the Project thus far:

- The 30-inch BWSC water main in Northern Avenue was replaced;
- The 16-inch water main and the 30-inch transmission main in Northern Avenue and Pier 4 boulevard were relocated during the realignment of Northern Avenue;
- The previously proposed 12-inch main in Autumn Lane, between Boston Wharf Road and East Service Road, was removed from the Project; and
- A new 12-inch low service water main connecting to the 12-inch water main in Stillings Street and the 12-inch water main in Boston Wharf Road was constructed.

9.3.2 Water Consumption

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, described in Section 9.2.2. A conservative factor of 1.1 (10%) is applied to the estimated average daily wastewater flows calculated with 310 CMR 15.203 values to account for consumption, system losses and other usages to estimate an average daily water demand. The Project's estimated domestic water demand is approximately 1,208,907 gpd. The previous filing indicated an approximate Project water demand of 847,000 gpd.

Efforts to reduce water consumption have been and will be made. Aeration fixtures and appliances will be chosen for water conservation qualities. In public areas, sensor operated faucets and toilets will be installed.

New water services will be installed in accordance with the latest local, state, and federal codes and standards. Backflow preventers will be installed at both domestic and fire protection service connections. New meters will be installed with Meter Transmitter Units (MTU's) as part of the BWSC's Automatic Meter Reading (AMR) system.

9.3.3 Proposed Project

The domestic and fire protection water services for the remaining Project blocks will connect to the existing BWSC water mains within the Project Area. Figure 9-4 shows the proposed water supply infrastructure

Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 9-3

Existing Water Systems

Seaport Square   Boston, Massachusetts

SEAPORT

Figure 9-4

Proposed Water Systems

The domestic and fire protection water service connections required for the Project will meet the applicable City and State codes and standards, including cross-connection backflow prevention. Compliance with the standards for the domestic water system service connection will be reviewed as part of BWSC's Site Plan Review process. This review will include sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and siamese connections that conform to BWSC and Boston Fire Department requirements.

9.3.4 Proposed Impacts

The Proponent has worked with BWSC to determine that there are no known capacity issues with the existing water mains. The distribution system is expected to have sufficient capacity to supply all phases of the Project, along with other planned projects in the area. The proposed Project's impacts on the existing water system will be reviewed as part of the BWSC's Site Plan Review process.

9.4 Stormwater

9.4.1 Existing Stormwater Infrastructure

The storm drainage system serving the Project Area is substantially owned and operated by BWSC. Private outfalls currently serve large portions of Project blocks between Seaport Boulevard and Northern Avenue. The system includes drainage infrastructure built by private landowners, and several infrastructure improvements have been made as part of recent projects, such as the Federal Courthouse, the construction of Seaport Boulevard, the Central Artery/Tunnel Project, and the MBTA Transitway Tunnel Project. The Project Area is served by several storm drain outfalls which discharge runoff to the harbor, as described in previous filings. Figure 9-5 shows the existing stormwater infrastructure.

Existing stormwater systems vary across the Project Area and include catch basins and storm drains installed in public roadways as part of recent transportation infrastructure projects. Stormwater treatment systems within the existing blocks are limited to catch basins, which have either been removed as part of the construction process or will be removed in future phases. The storm drain infrastructure within the public right of ways appears to be adequate to accommodate the remaining Project phases.

The 2009 DPIR/DEIR indicated that stormwater from several Blocks would be directed to a new 24-inch storm drain main in Northern Avenue. The storm drain main would be installed as part of the realignment of Northern Avenue, and the main would have directed stormwater from this area to Storm Drain Outfall 015 (SDO 015). However, after coordination with BWSC, the storm drain has been directed to flow west to the newly installed 48-inch storm drain main in Courthouse Way, which was installed as part of the Fan Pier Project.

Seaport Square Boston, Massachusetts

SEAPORT

Figure 9-5

Existing Storm Drain Systems

The Blocks that have already been constructed or designed have each separately committed to managing stormwater on site using various systems to meet BWSC requirements. Table 9-3 provides a summary of commitments that the Proponent has made for managing stormwater on site prior to its discharge to the BWSC storm drain mains.

Table 9-3 Stormwater

Block	Stormwater Management Approach
A	½ inch Recharge from Project Site
B+C	Minimal Irrigation, treatment of surface runoff
H	1 inch Recharge from Project Site
J	1 inch Recharge from Project Site
K	1 inch Recharge from Project Site
L1	1 inch Reuse and Recharge from Project Site
L2	1 inch Reuse and Recharge from Project Site
M1+M2	½ inch Recharge from Project Site

9.4.2 Proposed Conditions

As previously described in the 2009 DPIR/DEIR, due to the inclusion of large open spaces, green roofs, and site landscape improvements, the Project will result in a reduction in impervious coverage of the Project Site. The proposed building outlines have been updated, however, the general layouts have stayed the same. Each Block is being designed to minimize impervious area as much as possible in combination with on-site stormwater management systems to significantly reduce the peak runoff rates from the Project Site. The Project's intent is to direct stormwater flows to BWSC outfalls, rather than to private outfalls.

Each new Block will be designed to meet BWSC requirements for stormwater storage on site by providing either underground recharge systems or a combination of interior tanks with groundwater recharge wells. Each Block will require overflow connections to the BWSC storm drain systems. The proposed storm drain systems and building drain services are shown in Figure 9-6.

There is a new 24-inch storm drain main proposed in Northern Avenue, which will increase to a 30-inch main to connect into the newly constructed 36-inch storm drain main in Northern Avenue. This storm drain main continues down Courthouse Way and discharges to Boston Harbor.

Seaport Square **Boston, Massachusetts**

SEAPORT

Figure 9-6

Proposed Storm Drain Systems

Improvements and connections to BWSC infrastructure will be reviewed as part of the BWSC's Site Plan Review process for the development of each Block. The process will include a comprehensive design review of the proposed service connections, and assessment of Project demands and system capacity.

9.4.3 Water Quality Impact

The Project will strive to improve the water quality of the stormwater that is not contained on site and overflows to the existing BWSC system. If it is determined that groundwater recharge is not feasible, the Proponent will treat the stormwater runoff to adequately capture Total Suspended Solids (TSS) and phosphorus prior to discharging to the BWSC system.

The Project will not affect the water quality of nearby water bodies. Erosion and sediment control measures will be implemented during construction to minimize the transport of site soils to off-site areas and BWSC storm drain systems. During construction, existing catch basins will be protected with filter fabric, straw bales and/or crushed stone, to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until the areas of disturbance have been stabilized through the placement of pavement, structure, or vegetative cover.

All necessary dewatering will be conducted in accordance with applicable MWRA and BWSC discharge permits. Once construction is complete, the Project will be in compliance with local and state stormwater management policies, as described below.

9.4.4 MassDEP Stormwater Management Policy Standards

In March 1997, MassDEP adopted a Stormwater Management Policy to address non-point source pollution. In 1997, MassDEP published the Massachusetts Stormwater Handbook as guidance on the Stormwater Policy, which was revised in February 2008. The Policy prescribes specific stormwater management standards for development projects, including urban pollutant removal criteria for projects that may impact environmental resource areas. Compliance is achieved through the implementation of Best Management Practices (BMPs) in the stormwater management design. The Policy is administered locally pursuant to MGL Ch. 131, s. 40.

A brief explanation of each Policy Standard and the Project's compliance is provided below:

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 proposed design will comply with this Standard. The design will incorporate the appropriate stormwater treatment and no new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Project.

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

Compliance: The proposed design will comply with this Standard. The existing discharge rate will be met or decreased as a result of the improvements associated with the Project to the maximum extent practicable.

Standard #3: Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmental sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Compliance: The Project will comply with this standard to the maximum extent practicable. The underground recharge systems will be designed to infiltrate stormwater to the maximum extent practicable based on BWSC groundwater recharge requirements.

Standard #4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Compliance: The proposed design will comply with this standard by using deep sump catch basins, water quality units, groundwater recharge, and a robust street sweeping program. Within the Project's limit of work, there will be mostly building roof, paved sidewalk, roadway areas, and landscaped areas. Runoff from paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by deep sump, hooded catch basins and conveyed through water quality units before discharging into the BWSC system.

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 thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Compliance: The proposed design will comply with this standard as required for each Block. Stormwater discharges from areas with higher potential pollutant loads typically require the use of specific stormwater management BMPs, and at least 44 percent TSS removal prior to discharging to an infiltration device. The standard will be met by the incorporation of BMPs, including deep sump and hooded catch basins and particle separators.

Standard #6: Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

Compliance: The proposed design will comply with this Standard. The Project will not discharge untreated stormwater to a sensitive area or any other 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 proposed design will comply with this Standard. The Project complies with the Stormwater Management Standards as applicable to the redevelopment.

Standard #8: A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Compliance: The Project will comply with this standard. A sedimentation and erosion control program will be implemented during construction.

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: The Project will comply with this standard. An O&M Plan including long-term BMP operation requirements will be prepared for the Project and will assure proper maintenance and functioning of the stormwater management system.

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

Compliance: The Project will comply with this standard. There will be no illicit connections associated with the Project.

9.5 Protection Proposed During Construction

Existing public and private infrastructure located within nearby public rights-of-way will be protected during Project construction. The installation of proposed utility connections within public ways will be undertaken in accordance with BWSC, Boston Public Works Department, the Dig-Safe Program, and applicable utility company requirements. Specific methods for constructing proposed utilities where they are near to, or connect with existing water, sewer, and drain facilities will be reviewed by the BWSC as part of its Site Plan Review process. Necessary permits will be obtained as required.

The Proponent will continue to work and coordinate with the BWSC and the utility companies to ensure safe and coordinated utility operations in connection with the Project.

Chapter 10.0

Mitigation Measures

10.0 MITIGATION MEASURES

10.1 Description of Mitigation Measures

Table10-1 provides a summary of mitigation measures for the NPC Project.

Table 10-1 Summary of NPC Project Impacts and Mitigation

Subject	Impact	Mitigation	Schedule
Transportation	Overall, the traffic volumes are very similar to the 2010 Project projections. Of the twenty-three intersections studied, twenty-two are projected to operate at Level of Service D or better in the a.m. and p.m. peak hours in the 2023 Build condition.	Transportation mitigation items are detailed in Section 3.6, are included in the 2023 Build condition, are similar to those measures included in the 2010 Project, and include: An aggressive Transportation Demand Management Plan; enhancements to the pedestrian environment adjacent to its buildings; provision of secure, sheltered bicycle racks and sidewalk-level public bicycle racks; continuation of the existing low-cost bicycle rental program; construction of a new street ("Harbor Way") to provide a direct pedestrian/bicycle connection from Summer Street down to the waterfront; intersection improvements along Northern Avenue, Seaport Boulevard, Boston Wharf Road, East Service Road, Summer Street, and Congress Street corridors, including modifications to lane use, pavement markings, and signal phasings/timings.	During design or occupancy.
Wind	Generally, the wind conditions improved or stayed the same with the NPC Project in place. The Full Build Configuration results in improved overall wind conditions. In general, the wind speeds are appropriate for the intended uses. Almost 90% (vs 83% in the No Build) of the locations studied have wind speeds suitable for walking or better in the Full Build Configuration. This represents an improvement over the Project studied in the 2009 DPIR/DEIR as well which indicated that 88% of the locations studied had wind speeds suitable for walking or better.	Mitigation such as the addition of coniferous/marcescent trees and/or a series of porous wind screens in the corridor between Blocks L3 and L5 and between Blocks N and P is being considered. Potential mitigation will be determined through the design review process as individual buildings within the NPC Project Site are designed.	During design

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Shadow	Since much of the NPC Project Site is predominantly vacant (used as surface parking), redevelopment of these Blocks will increase the amount of shadow cast by the Project when compared with existing conditions. However the amount of shadow will remain consistent with the 2010 Project.	The NPC Project is expected to result in shadows typical of densely-built urban areas. However, off-site open spaces will generally be unaffected by new shadow, and much of the new shadow falls onto the Project Site itself and adjacent streets. In addition, some of the shadow proposed in the 2010 DPIR/DEIR has been eliminated through changes to building massing.	None required.
Daylight	As noted above, because much of the existing site is vacant, there is an increase in daylight obstruction with the Project that is similar to the effect of the 2010 Project.	Daylight obstruction from the Project is consistent with dense urban areas throughout the city and does not require any specific mitigation measures. Proposed building massing within the Project reflects the Proponent's desire to create an "urban room" that allows more light, air, and sun into the public spaces than is typical of a densely-developed urban area.	None required.
Air Quality	The air quality analysis results show that CO are well below the one-hour and eight-hour NAAQS, as was the case with the 2010 Project.	Mitigation is not required, however the Proponent's transportation demand management program is expected to minimize vehicle trips and related emissions. Proposed changes to traffic signals and lane markings will reduce delays and increase vehicle speeds, further minimizing mobile source emissions.	During construction.
Noise	As included in the 2009 DPIR/DEIR, predicted noise levels from the Project's mechanical equipment will be below the most stringent City of Boston Zoning District Noise Standards for nighttime and daytime residential zones, and below existing measured baseline noise levels in the area. Impacts associated with the NPC Project are anticipated to be similar.	Most of the mechanical equipment for the buildings will be housed within a mechanical penthouse on the roof. It is expected that any noise from equipment within the penthouses will be attenuated.	During design and occupancy.

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Tidelands: Chapter 91 and South Boston Municipal Harbor Plan	No material changes are proposed to the portion of Project within Chapter 91 jurisdiction. Project construction will be consistent with the South Boston Municipal Harbor Plan, where required. No negative impacts are anticipated.	The Project will have numerous benefits to the public, including the newly constructed waterfront way along the City-owned Old Sleeper Street to provide a pedestrian connection linking to the existing Harborwalk between the Children's Museum and the Federal Courthouse. The Project includes the construction and maintenance of numerous open spaces in proximity to the waterfront, including Seaport Common, a 36,000 sf acre open space is open adjacent to Fan Pier Park and will continue to be activated to encourage public use and enjoyment. In addition, a contribution to open space enhancements for Parcel E at the Children's Museum will be provided. A series of cultural venues, including outdoor sculpture gardens, public art and performance venues and exhibit spaces will activate the site and provide year-round use. The Project will activate ground level pedestrian activities by providing facilities of public accommodation on the ground floors on most all of the buildings within the Project (both within and outside of Chapter 91 jurisdiction), surpassing the requirements of the Chapter 91 regulatory provisions for the activation of Commonwealth Tidelands. In addition, Facilities of public accommodation will also occupy second floors in many of the Blocks.	During construction and occupancy.

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Geotechnical / Groundwater	Conditions on the Project Site are similar to conditions described in the 2009 DPIR/DEIR. The Project Site is underlain by a thick layer of impervious marine clay. The presence of the clay soils is ideal for constructing permanent groundwater cut-off walls around basement areas, and the impervious properties limit groundwater seepage rates. These conditions are also considered favorable for temporary construction dewatering.	Significant infrastructure facilities, including the MBTA Silver Line tunnel below Seaport Boulevard extending south to Congress Street, are located near the Project Site. Protection of these facilities has been considered in development of the design and construction methodology. The measures include using stiff, waterproof excavation support systems and permanent foundation walls to mitigate potential off-site impacts, use of non-vibration generating systems, such as slurry wall construction, and groundwater cut-off criteria to avoid impacts on groundwater levels. Prior to construction an instrumentation and monitoring program will be implemented, similar to what has been used for the other Seaport Blocks during construction. The program will include preconstruction condition surveys of adjacent buildings and the MBTA tunnel, movement monitoring of critical adjacent structures, vibration monitoring as needed, and groundwater level monitoring. Design criteria and construction methodologies that protect groundwater will be selected depending on planned basement depths. These include perimeter groundwater cut-off walls around below-grade garages and no permanent dewatering or perimeter drainage systems which could result in groundwater lowering.	During construction.
Hazardous Materials	Chemical test results on soil samples indicate the presence of contaminants typical of urban fill materials, similar to the 2010 Project.	Testing of soil and groundwater will be conducted prior to construction on each new development Block to characterize materials to be excavated. Removal of any hazardous waste will be conducted in accordance with applicable laws.	During construction.

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Solid Waste	The Project will generate solid waste typical of mixed-use projects, as did the 2010 Project.	Trash will be collected in a dedicated area in a ground floor loading areas in each of the Blocks until pick up by licensed contractor. Solid waste and recycling from the retail and restaurant components will be stored in dedicated areas of the ground floor loading area. A private trash collector will pick up trash as needed. The Proponent will investigate the possibility of siting periodic centralized collection bins for batteries and/or fluorescent light bulbs (including CFL's) as a part of the LEED-ND program. Residential projects will handle this as part of their general waste management strategy. Property management will address this with the office and retail tenants.	During occupancy.
Construction	The Project may result in temporary construction impacts on the pedestrian and vehicle environments and have temporary noise and air quality impacts, similar to the 2010 Project.	Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the site. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered pedestrian walkways when appropriate and, if required, the suspension of the use of certain sidewalks during the most hazardous periods of overhead work activity during the construction of each superstructure. If required by BTD and the Boston Police Department, police details will be provided to facilitate traffic flow. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.	During construction.

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Sustainable Design	Individual Blocks will be LEED certifiable or will pursue LEED certification under LEED-NC or LEED-CS, as published by the USGBC. This commitment is similar to that described in the 2010 DPIR/DEIR. The Seaport Square Project as a whole is certified at the Gold level under the LEED-ND rating system.	Individual Blocks with the Project are targeting, at a minimum, the LEED Silver level, which requires numerous mitigation measures. Proposed mitigation measures relate to water conservation, water efficient landscaping, energy efficiency, transportation demand management, reduction of the heat island effect, public transportation access, and construction and operational waste management.	During design, construction and occupancy.
Open Space	The Project will introduce a new resident and non-resident population to the city that will use existing and future open spaces adjacent to and in the vicinity of the Project Site, as well as regional open space resources. The Project includes creation of new open space.	Approximately 8.8 acres or 37% of the Project Site will be dedicated public open space, including private streets. Approximately 7.0 acres or 30% of the Project Site will be devoted to pedestrian-oriented open space (e.g., Seaport Common, Courthouse Square, Sea Green, Harbor Way, Harbor Square, and Block M Courtyard) including green space, sidewalks, pedestrian ways and streets. Significant portions of the new pedestrian-oriented public open space to be built by the Proponent as part of the Project fall outside of the limits of the Project Site and therefore are not included in the figures stated above (i.e. portions of public sidewalks and median improvements that fall within of the City-owned public ways, public spaces built on land owned by others (Farnsworth pedestrian link), etc.). These improvements provide an additional 3.4 acres of public open space, bringing the total pedestrian-oriented public space created or improved by the Project to over 10 acres.	During design and construction
Historic Resources	The Project includes the demolition of the 1952 Chapel of Our Lady of Good Voyage, 65 Northern Avenue, a property included in the MHC Inventory.	A fully executed Memorandum of Agreement between the Proponent MHC, BLC, and MassDEP identifies mitigation measures. As agreed to in the MOA, a new chapel has been constructed, photographic documentation of the Chapel was completed, and an architectural salvage plan was developed.	During design and construction.

Table 10-1 Summary of NPC Project Impacts and Mitigation (Continued)

Subject	Impact	Mitigation	Schedule
Accessibility	Impacts are positive, because NPC Project construction will meet current standards for accessibility and dramatically improve accessibility throughout the Project Area.	Public realm improvements and the NPC Project Blocks will be built in accordance with the 2010 Americans with Disabilities Act ("ADA") Standards for Accessible Design and 521 CMR Massachusetts Architectural Access Board ("MAAB") Regulations, including sidewalks, pedestrian ramps, parking spaces, circulation routes, and residential units.	During design and construction.
Wastewater	Based on wastewater generation rates, the Project will generate approximately 1,098,806 gallons of wastewater per day.	Relocations and connections will continue to be coordinated with BWSC throughout the design process to ensure flows are distributed in a manner consistent with the needs and available capacity of the system.	During design, construction and occupancy.
Water Supply	Based on wastewater generation rates, the Project will require approximately 1,208,687 gallons of domestic water per day.	The Proponent is committed to implementing practicable measures to reduce the NPC Project's demand on the public water supply. The building program will include the latest technology in low-flow fixtures and other water conservation measures. The Proponent is investigating offsetting the NPC Project's irrigation water demand through the capture and reuse of roof runoff, which would also reduce the burden on the drainage system.	During design, construction and occupancy.
Water Quality/ Stormwater	Potential impacts are expected to be minor and limited to active construction-period operations, similar to the 2010 Project.	The Proponent will provide a detailed Stormwater Pollution Prevention Plan (SWPPP) to the Boston Water and Sewer Commission's Engineering Design Division. The SWPPP will detail erosion control measures to be implemented during construction to prevent the discharge of sediment and contaminated groundwater or stormwater runoff into the City's drainage system or harbor waters.	During construction.

Appendix A

Transportation

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 1
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON
TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

TOTAL (CARS & TRUCKS)

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	5	0	40	0	0	0	0	0	0	1	2	0	22	2	0
7:15 AM	0	3	0	48	0	0	0	0	0	0	0	1	0	21	1	0
7:30 AM	0	0	0	52	0	0	0	0	0	0	1	0	0	18	0	0
7:45 AM	0	2	0	61	0	0	0	0	0	0	1	2	0	28	0	0
8:00 AM	0	3	0	64	0	0	0	0	0	0	0	3	0	36	0	0
8:15 AM	0	2	0	71	0	0	0	0	0	0	1	2	0	40	1	0
8:30 AM	0	1	0	56	0	0	0	0	0	0	0	1	0	42	1	0
8:45 AM	0	6	0	68	0	0	0	0	0	0	0	1	0	34	0	0

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	17	0	0	0	0	0	0	0	1	0	61	0	0
4:15 PM	0	2	0	20	0	0	0	0	0	0	0	2	0	72	0	0
4:30 PM	0	1	0	22	0	0	0	0	0	0	0	2	0	76	0	0
4:45 PM	0	1	0	20	0	0	0	0	0	0	1	3	0	76	1	0
5:00 PM	1	2	0	17	0	0	0	0	0	0	1	3	1	69	0	0
5:15 PM	0	1	0	18	0	0	0	0	0	0	0	4	0	74	2	0
5:30 PM	0	2	0	17	0	0	0	0	0	0	1	2	4	77	3	0
5:45 PM	0	2	0	18	0	0	0	0	0	0	1	2	0	81	3	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**12**	**0**	**259**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**0**	**152**	**2**	**0**
PHF	**0.92**				**0.00**				**0.67**				**0.90**			
HV %	**0.0%**	**8.3%**	**0.0%**	**10.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**0.0%**	**16.4%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	**7**	**0**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**11**	**5**	**301**	**8**	**0**
PHF	**0.98**				**0.00**				**0.88**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 1
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	14	0	0	0	0	0	0	0	0	0	5	0	0
7:15 AM	0	0	0	13	0	0	0	0	0	0	0	0	0	4	0	0
7:30 AM	0	1	0	10	0	0	0	0	0	0	0	0	0	7	0	0
7:45 AM	0	0	0	7	0	0	0	0	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	9	0	0	0	0	0	0	1	0	0	5	0	0
8:15 AM	0	0	0	7	0	0	0	0	0	0	0	0	0	7	0	0
8:30 AM	0	0	0	5	0	0	0	0	0	0	0	0	0	5	0	0
8:45 AM	0	1	0	5	0	0	0	0	0	0	0	0	0	8	0	0

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
4:30 PM	0	1	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
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**0**
PHF	**0.80**				**0.00**				**0.00**				**0.61**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
PHF	**0.75**				**0.00**				**0.25**				**0.25**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 1
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	20	0	0	0	0	0	0	0	17	0	0	0	14
7:15 AM	0	0	1	19	0	0	0	0	0	1	0	16	1	0	0	13
7:30 AM	1	0	2	25	0	0	0	0	0	0	1	29	0	1	0	24
7:45 AM	0	0	1	28	0	0	0	0	0	0	0	40	0	0	0	32
8:00 AM	1	0	11	33	0	0	0	0	0	1	0	43	3	0	0	30
8:15 AM	1	0	3	34	0	0	0	0	0	2	0	45	1	0	0	25
8:30 AM	1	0	6	36	0	0	0	0	0	2	1	48	2	0	0	29
8:45 AM	2	0	4	34	0	0	0	0	0	1	0	47	1	0	0	31

	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	21	0	0	0	0	0	0	0	50	3	0	0	25
4:15 PM	0	0	0	20	0	0	0	0	0	1	0	48	5	0	0	24
4:30 PM	0	0	0	22	0	0	0	0	0	0	1	53	6	0	0	15
4:45 PM	0	0	1	18	0	0	0	0	0	0	0	53	5	0	0	27
5:00 PM	0	0	0	22	0	0	0	0	0	1	0	62	9	1	0	33
5:15 PM	0	0	0	23	0	0	0	0	0	0	1	65	12	0	0	36
5:30 PM	0	0	1	21	0	0	0	0	0	0	0	52	10	0	0	30
5:45 PM	0	0	0	17	0	0	0	0	0	0	0	34	2	1	0	22

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	5	0	24	137	0	0	0	0	0	6	1	183	7	0	0	115

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	Sleeper Street Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	1	83	0	0	0	0	0	1	1	213	33	2	0	121

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 2
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Courthouse Way
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

					Courthouse Way				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	2	0	5	0	28	19	0	0	0	18	7
7:15 AM	0	0	0	0	0	2	0	6	0	35	18	0	0	0	17	12
7:30 AM	0	0	0	0	0	3	0	6	0	38	15	0	0	0	15	16
7:45 AM	0	0	0	0	0	3	0	8	0	39	22	0	0	0	23	12
8:00 AM	0	0	0	0	0	2	0	9	1	48	26	0	0	0	28	7
8:15 AM	0	0	0	0	0	0	0	11	0	47	22	0	0	0	30	13
8:30 AM	0	0	0	0	0	1	0	6	0	41	16	0	0	0	35	7
8:45 AM	0	0	0	0	0	3	0	7	0	43	17	0	0	0	35	13

					Courthouse Way				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	4	0	29	0	7	12	0	0	0	33	6
4:15 PM	0	0	0	0	0	5	0	36	0	9	11	0	0	0	34	5
4:30 PM	0	0	0	0	0	5	0	39	0	10	9	0	0	0	32	3
4:45 PM	0	0	0	0	0	4	0	36	0	12	10	0	0	0	37	4
5:00 PM	0	0	0	0	0	5	0	30	0	12	10	0	0	0	38	3
5:15 PM	0	0	0	0	0	5	0	33	0	9	14	0	0	0	45	5
5:30 PM	0	0	0	0	0	4	0	32	0	6	14	0	1	0	48	7
5:45 PM	0	0	0	0	0	4	0	34	0	6	15	0	0	0	50	7

AM PEAK HOUR					Courthouse Way				Northern Avenue				Northern Avenue			
8:00 AM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
9:00 AM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**33**	**1**	**179**	**81**	**0**	**0**	**0**	**128**	**40**
PHF	**0.00**				**0.89**				**0.87**				**0.88**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**21.2%**	**0.0%**	**3.9%**	**37.0%**	**0.0%**	**0.0%**	**0.0%**	**18.0%**	**0.0%**

PM PEAK HOUR					Courthouse Way				Northern Avenue				Northern Avenue			
5:00 PM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**129**	**0**	**33**	**53**	**0**	**1**	**0**	**181**	**22**
PHF	**0.00**				**0.97**				**0.93**				**0.89**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 2
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Courthouse Way
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	Northbound				Courthouse Way Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	3	10	0	0	0	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	9	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	1	0	1	12	0	0	0	7	0
7:45 AM	0	0	0	0	0	0	0	0	0	3	8	0	0	0	5	0
8:00 AM	0	0	0	0	0	0	0	3	0	1	10	0	0	0	8	0
8:15 AM	0	0	0	0	0	0	0	3	0	3	8	0	0	0	5	0
8:30 AM	0	0	0	0	0	0	0	0	0	3	7	0	0	0	7	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	5	0	0	0	3	0

	Northbound				Courthouse Way Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	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
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Northbound				Courthouse Way Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**8**	**38**	**0**	**0**	**0**	**25**	**0**
PHF	**0.00**				**0.58**				**0.88**				**0.78**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				Courthouse Way Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**
PHF	**0.00**				**0.25**				**0.50**				**0.25**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 2
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Courthouse Way
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Northbound					Courthouse Way Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	56		1	2	0	0		0	0	0	0	
7:15 AM	0	0	0	0		0	0	0	53		0	3	0	0		0	0	0	0	
7:30 AM	0	0	0	0		1	0	0	69		1	1	0	0		0	0	0	0	
7:45 AM	0	0	0	0		0	0	0	78		2	2	0	0		0	0	0	0	
8:00 AM	0	0	0	0		0	0	1	89		1	3	0	0		0	0	0	0	
8:15 AM	0	0	0	0		0	0	0	91		2	1	0	0		0	0	0	0	
8:30 AM	0	0	0	0		0	0	0	111		0	3	0	0		0	1	0	0	
8:45 AM	0	0	0	0		0	0	0	121		2	3	0	0		0	1	0	0	

	Northbound					Courthouse Way Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	2	78		0	0	0	0		0	1	0	0	
4:15 PM	0	0	0	0		0	0	1	74		0	1	0	0		0	2	0	0	
4:30 PM	0	0	0	0		0	0	2	81		0	2	0	0		0	3	0	0	
4:45 PM	0	0	0	0		0	0	1	80		0	1	0	0		0	3	0	0	
5:00 PM	0	0	0	0		1	0	7	105		0	0	0	0		0	1	0	0	
5:15 PM	0	0	0	0		0	0	8	120		0	2	0	0		0	2	0	0	
5:30 PM	0	0	0	0		0	0	6	104		1	3	0	0		0	4	0	0	
5:45 PM	0	0	0	0		0	0	3	78		0	0	0	0		0	3	0	0	

AM PEAK HOUR[1]	Northbound					Courthouse Way Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		0	0	1	412		5	10	0	0		0	2	0	0	

PM PEAK HOUR[1]	Northbound					Courthouse Way Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		1	0	24	407		1	5	0	0		0	10	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 3
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Fan Pier Boulevard
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	4	0	5	0	3	16	0	0	0	17	19
7:15 AM	0	0	0	0	0	3	0	6	0	4	15	0	0	0	22	19
7:30 AM	0	0	0	0	0	1	0	7	0	4	13	0	0	0	24	18
7:45 AM	0	0	0	0	0	3	0	6	0	3	19	0	0	0	26	15
8:00 AM	0	0	0	0	0	4	0	4	0	2	24	0	0	0	25	10
8:15 AM	0	0	0	0	0	4	0	8	0	3	21	0	0	0	32	11
8:30 AM	0	0	0	0	0	3	0	11	0	4	16	0	0	0	36	11
8:45 AM	0	0	0	0	0	3	0	12	0	4	17	0	0	0	38	12

	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	15	0	12	0	4	12	0	0	0	24	2
4:15 PM	0	0	0	0	0	16	0	12	0	3	12	0	0	0	26	4
4:30 PM	0	0	0	0	0	15	0	10	1	1	10	0	0	0	25	5
4:45 PM	0	0	0	0	0	18	0	16	0	3	12	0	0	0	27	5
5:00 PM	0	0	0	0	0	20	0	20	1	4	12	0	0	0	27	4
5:15 PM	0	0	0	0	0	27	0	20	0	4	15	0	0	0	32	5
5:30 PM	0	0	0	0	0	31	0	18	0	3	17	0	0	0	33	6
5:45 PM	0	0	0	0	0	33	0	19	0	3	18	0	0	0	35	6

AM PEAK HOUR 8:00 AM to 9:00 AM	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**14**	**0**	**35**	**0**	**13**	**78**	**0**	**0**	**0**	**131**	**44**
PHF	**0.00**				**0.82**				**0.88**				**0.88**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**14.3%**	**0.0%**	**2.9%**	**0.0%**	**0.0%**	**12.8%**	**0.0%**	**0.0%**	**0.0%**	**9.2%**	**2.3%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**111**	**0**	**77**	**1**	**14**	**62**	**0**	**0**	**0**	**127**	**21**
PHF	**0.00**				**0.90**				**0.92**				**0.90**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**	**5.2%**	**0.0%**	**0.0%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**7.9%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 3
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Fan Pier Boulevard
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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TRUCKS

	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	3	5	0	0	0	4	0
7:15 AM	0	0	0	0	0	3	0	1	0	1	4	0	0	0	5	1
7:30 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	1	0	1	4	0	0	0	3	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	1	1
8:15 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	4	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0

	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
4:30 PM	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1
4:45 PM	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	1	0	0	0	0	0	0	1	0
5:15 PM	0	0	0	0	0	1	0	3	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**0**	**5**	**16**	**0**	**0**	**0**	**16**	**1**
PHF	**0.00**				**0.38**				**0.66**				**0.71**			

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Fan Pier Boulevard Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**10**	**0**
PHF	**0.00**				**0.31**				**0.25**				**0.50**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 3
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Fan Pier Boulevard
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

						Fan Pier Boulevard					Northern Avenue					Northern Avenue				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	15		0	0	0	0		0	0	0	0	
7:15 AM	0	0	0	0		0	0	0	25		0	0	0	0		0	0	0	0	
7:30 AM	0	0	0	0		0	0	0	32		1	0	0	0		0	0	0	0	
7:45 AM	0	0	0	0		0	0	0	46		0	2	0	0		0	0	0	0	
8:00 AM	0	0	0	0		0	0	0	56		0	1	0	0		0	0	0	0	
8:15 AM	0	0	0	0		1	0	0	71		1	1	0	0		0	1	0	0	
8:30 AM	0	0	0	0		0	0	0	80		0	3	0	0		0	0	0	0	
8:45 AM	0	0	0	0		0	0	1	84		0	2	0	0		0	0	0	0	

						Fan Pier Boulevard					Northern Avenue					Northern Avenue				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	60		0	0	0	0		0	0	0	0	
4:15 PM	0	0	0	0		0	0	0	57		0	0	0	0		0	1	0	0	
4:30 PM	0	0	0	0		0	0	0	71		0	3	0	0		0	0	0	0	
4:45 PM	0	0	0	0		1	0	2	79		0	8	0	0		0	0	0	0	
5:00 PM	0	0	0	0		0	0	1	96		1	5	0	0		0	3	0	0	
5:15 PM	0	0	0	0		0	0	0	103		0	1	0	0		0	2	0	0	
5:30 PM	0	0	0	0		1	0	1	92		0	2	0	0		0	2	0	0	
5:45 PM	0	0	0	0		0	0	0	72		0	0	0	0		0	4	0	0	

AM PEAK HOUR[1]						Fan Pier Boulevard					Northern Avenue					Northern Avenue				
8:00 AM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		1	0	1	291		1	7	0	0		0	1	0	0	

PM PEAK HOUR[1]	0					Fan Pier Boulevard					Northern Avenue					Northern Avenue				
5:00 PM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		1	0	2	363		1	8	0	0		0	11	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 4
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Marina Park Drive
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

					Marina Park Drive				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	3	0	0	0	1	21	0	0	0	40	20
7:15 AM	0	0	0	0	0	4	0	1	0	2	17	0	0	0	44	25
7:30 AM	0	0	0	0	0	5	0	1	0	1	11	0	0	0	44	27
7:45 AM	0	0	0	0	0	8	0	2	0	5	17	0	0	0	42	37
8:00 AM	0	0	0	0	0	10	0	2	1	8	21	0	0	0	36	43
8:15 AM	0	0	0	0	0	8	0	3	0	6	21	0	0	0	41	41
8:30 AM	0	0	0	0	0	5	0	3	0	4	19	0	0	0	43	36
8:45 AM	0	0	0	0	0	5	0	2	0	4	20	0	0	0	45	38

					Marina Park Drive				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	20	0	5	0	2	24	0	1	0	21	2
4:15 PM	0	0	0	0	0	19	0	4	0	1	26	0	0	0	25	3
4:30 PM	0	0	0	0	0	16	0	2	2	0	26	0	0	0	26	2
4:45 PM	0	0	0	0	0	23	0	3	0	2	32	0	0	0	27	5
5:00 PM	0	0	0	0	0	27	0	2	2	3	35	0	0	0	25	7
5:15 PM	0	0	0	0	0	24	0	3	0	2	41	0	0	0	33	6
5:30 PM	0	0	0	0	0	19	0	4	1	3	43	0	0	0	38	5
5:45 PM	0	0	0	0	0	20	0	4	0	3	45	0	0	0	40	5

AM PEAK HOUR					Marina Park Drive				Northern Avenue				Northern Avenue			
8:00 AM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
9:00 AM	**0**	**0**	**0**	**0**	**0**	**28**	**0**	**10**	**1**	**22**	**81**	**0**	**0**	**0**	**165**	**158**
PHF	**0.00**				**0.79**				**0.87**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**39.3%**	**0.0%**	**40.0%**	**0.0%**	**0.0%**	**25.9%**	**0.0%**	**0.0%**	**0.0%**	**12.1%**	**0.0%**

PM PEAK HOUR					Marina Park Drive				Northern Avenue				Northern Avenue			
5:00 PM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 PM	**0**	**0**	**0**	**0**	**0**	**90**	**0**	**13**	**3**	**11**	**164**	**0**	**0**	**0**	**136**	**23**
PHF	**0.00**				**0.89**				**0.93**				**0.88**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 4
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Marina Park Drive
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON
TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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TRUCKS

	Northbound				Marina Park Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	3	0	0	0	0	3	0	0	0	4	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	4	0
7:30 AM	0	0	0	0	0	1	0	1	0	0	3	0	0	0	5	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	0
8:00 AM	0	0	0	0	0	4	0	3	0	0	4	0	0	0	4	0
8:15 AM	0	0	0	0	0	3	0	1	0	0	5	0	0	0	7	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	5	0
8:45 AM	0	0	0	0	0	3	0	0	0	0	5	0	0	0	4	0

	Northbound				Marina Park Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0
4:45 PM	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
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Northbound				Marina Park Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
8:00 AM to 9:00 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**11**	**0**	**4**	**0**	**0**	**21**	**0**	**0**	**0**	**20**	**0**
PHF	**0.00**				**0.54**				**0.75**				**0.71**			

PM PEAK HOUR	Northbound				Marina Park Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
4:00 PM to 5:00 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**
PHF	**0.00**				**0.50**				**0.33**				**0.50**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 4
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Marina Park Drive
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Northbound					Marina Park Drive Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	13		0	0	0	0		0	1	0	12	
7:15 AM	0	0	0	0		1	0	0	12		0	0	0	0		0	1	0	11	
7:30 AM	0	0	0	0		0	0	0	27		0	0	0	0		0	2	0	29	
7:45 AM	0	0	0	0		0	0	1	39		0	0	0	0		0	1	2	45	
8:00 AM	0	0	0	0		0	0	1	43		1	0	0	0		0	2	1	41	
8:15 AM	0	0	0	0		0	0	0	42		0	0	0	0		0	0	0	34	
8:30 AM	0	0	0	0		0	0	2	51		0	2	0	0		0	1	1	46	
8:45 AM	0	0	0	0		0	0	1	56		0	1	0	0		0	2	0	53	

	Northbound					Marina Park Drive Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	60		0	0	0	0		0	0	0	1	
4:15 PM	0	0	0	0		0	0	0	57		0	0	0	0		0	0	0	2	
4:30 PM	0	0	0	0		0	0	0	65		0	0	0	0		0	0	0	4	
4:45 PM	0	0	0	0		0	0	1	67		1	0	0	0		0	0	0	5	
5:00 PM	0	0	0	0		0	0	0	76		0	1	0	0		0	2	0	4	
5:15 PM	0	0	0	0		1	0	0	78		0	2	0	0		0	3	1	3	
5:30 PM	0	0	0	0		0	0	1	72		1	1	0	0		0	2	1	4	
5:45 PM	0	0	0	0		0	0	0	59		0	0	0	0		0	1	0	4	

AM PEAK HOUR[1]	Northbound					Marina Park Drive Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		0	0	4	192		1	3	0	0		0	5	2	174	

PM PEAK HOUR[1]	Northbound					Marina Park Drive Southbound					Northern Avenue Eastbound					Northern Avenue Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		1	0	1	285		1	4	0	0		0	8	2	15	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 5
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Harbor Shore Drive
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	3	1	7	16	0	0	0	57	10
7:15 AM	0	0	0	0	0	0	0	2	0	4	17	0	3	0	67	8
7:30 AM	0	0	0	0	0	1	0	1	1	1	14	0	6	0	70	5
7:45 AM	0	0	0	0	0	1	0	2	1	1	23	0	5	0	77	6
8:00 AM	0	0	0	0	0	0	0	1	0	0	31	0	3	0	78	7
8:15 AM	0	0	0	0	0	1	0	2	1	1	27	0	4	0	80	9
8:30 AM	0	0	0	0	0	0	0	1	0	0	24	0	3	0	78	10
8:45 AM	0	0	0	0	0	0	0	1	0	0	25	0	3	0	82	11

	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	4	0	5	3	1	40	0	2	0	19	3
4:15 PM	0	0	0	0	0	3	0	4	2	2	41	0	1	0	24	4
4:30 PM	0	0	0	0	0	2	0	3	0	1	41	0	2	0	25	3
4:45 PM	0	0	0	0	0	7	0	3	1	2	52	0	3	0	29	5
5:00 PM	0	0	0	0	0	11	0	2	0	3	59	0	2	0	30	6
5:15 PM	0	0	0	0	0	12	0	3	1	3	61	0	3	0	36	7
5:30 PM	0	0	0	0	0	12	0	2	0	2	60	0	4	0	41	8
5:45 PM	0	0	0	0	0	13	0	2	0	2	63	0	4	0	43	8

AM PEAK HOUR 8:00 AM to 9:00 AM	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**1**	**1**	**107**	**0**	**13**	**0**	**318**	**37**
PHF	**0.00**				**0.50**				**0.88**				**0.96**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**10.3%**	**0.0%**	**0.0%**	**0.0%**	**6.6%**	**10.8%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**48**	**0**	**9**	**1**	**10**	**243**	**0**	**13**	**0**	**150**	**29**
PHF	**0.00**				**0.95**				**0.98**				**0.87**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 5
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Harbor Shore Drive
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	5	1	0	1	8	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	4	1	0	1	5	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	3	1	0	0	7	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0
8:00 AM	0	1	0	0	0	0	0	0	0	0	3	1	0	0	5	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	7	1
8:30 AM	0	1	0	0	0	0	0	0	0	0	4	0	0	1	4	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0

	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**3**	**0**	**2**	**28**	**0**
PHF	**0.75**				**0.00**				**0.79**				**0.83**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				Harbor Shore Drive Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**1**	**0**
PHF	**0.00**				**0.00**				**0.50**				**0.75**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 5
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Harbor Shore Drive
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

					Harbor Shore Drive				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	1	0	0	11	0	0	0	2	0	1	0	3
7:30 AM	0	0	0	0	0	0	0	13	0	0	0	3	0	0	0	4
7:45 AM	0	0	0	0	0	0	2	18	0	1	0	8	0	0	0	7
8:00 AM	0	0	0	0	0	0	0	22	0	0	0	13	0	0	0	9
8:15 AM	0	0	0	0	0	0	1	32	0	1	0	15	0	1	0	11
8:30 AM	0	0	0	0	0	0	0	39	0	2	0	16	0	1	0	12
8:45 AM	0	0	0	0	0	0	0	41	0	0	0	17	0	2	0	13

					Harbor Shore Drive				Northern Avenue				Northern Avenue			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	34	0	0	0	21	0	0	0	9
4:15 PM	0	0	0	0	0	0	0	32	1	0	0	20	0	0	0	9
4:30 PM	0	0	0	0	0	0	0	29	0	1	0	17	0	1	0	12
4:45 PM	0	0	0	0	0	0	0	23	0	0	0	12	0	0	0	10
5:00 PM	0	0	0	0	0	0	0	29	0	2	0	17	0	1	0	16
5:15 PM	0	0	0	0	0	0	1	32	1	3	0	20	0	2	0	12
5:30 PM	0	0	0	0	0	0	2	38	2	2	0	18	0	3	0	10
5:45 PM	0	0	0	0	0	0	0	41	1	0	0	15	0	1	0	7

AM PEAK HOUR[1]					Harbor Shore Drive				Northern Avenue				Northern Avenue			
8:00 AM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	0	0	0	0	0	0	1	134	0	3	0	61	0	4	0	45

PM PEAK HOUR[1]					Harbor Shore Drive				Northern Avenue				Northern Avenue			
5:00 PM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	0	0	0	0	0	0	3	140	4	7	0	70	0	7	0	45

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 6
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Pier 4 Boulevard
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	65	0	2	0	0	0	0	0	0	2	15	0	5	2	0
7:15 AM	0	73	1	1	0	0	0	0	0	0	2	18	0	7	2	0
7:30 AM	0	74	1	0	0	0	0	0	0	0	1	20	0	8	1	0
7:45 AM	0	81	2	1	0	0	0	1	0	0	1	28	0	7	1	0
8:00 AM	0	84	0	2	0	0	0	1	0	0	0	20	0	5	0	0
8:15 AM	0	85	1	3	0	0	0	2	0	1	2	23	0	8	1	0
8:30 AM	0	87	0	3	0	0	0	0	0	0	1	26	0	10	2	0
8:45 AM	0	92	0	2	0	0	0	0	0	1	1	37	0	6	2	0

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	22	0	5	0	0	0	0	0	0	0	46	0	2	0	0
4:15 PM	0	28	0	7	0	0	0	0	0	0	0	45	0	2	1	0
4:30 PM	0	28	0	9	0	0	0	0	0	0	0	45	0	1	0	0
4:45 PM	0	33	0	7	0	0	0	0	0	0	1	61	0	2	2	0
5:00 PM	0	35	0	4	0	0	0	0	0	0	1	71	0	2	3	0
5:15 PM	0	41	0	6	0	0	0	0	0	0	2	74	0	1	2	0
5:30 PM	0	48	0	7	0	0	0	0	0	0	1	71	0	0	0	0
5:45 PM	0	50	0	7	0	0	0	0	0	0	1	70	0	1	1	0

AM PEAK HOUR	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
8:00 AM to 9:00 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**348**	**1**	**10**	**0**	**0**	**0**	**3**	**0**	**2**	**4**	**106**	**0**	**29**	**5**	**0**
PHF	**0.95**				**0.38**				**0.72**				**0.71**			
HV %	**0.0%**	**5.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**50.0%**	**0.0%**	**14.2%**	**0.0%**	**3.4%**	**0.0%**	**0.0%**

PM PEAK HOUR	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
5:00 PM to 6:00 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**174**	**0**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**286**	**0**	**4**	**6**	**0**
PHF	**0.87**				**0.00**				**0.96**				**0.50**			
HV %	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 6
Location:	Seaport, Boston, MA
Street 1:	Northern Avenue
Street 2:	Pier 4 Boulevard
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	8	0	1	0	0	3	0	0	0	0	4	0	0	0	0
7:15 AM	0	5	0	0	0	0	4	0	0	0	0	3	0	1	0	0
7:30 AM	0	5	0	0	0	0	5	0	0	1	0	1	0	0	0	0
7:45 AM	0	7	0	1	0	0	4	0	0	0	0	5	0	0	0	0
8:00 AM	0	5	0	0	0	0	1	0	0	0	0	4	0	0	0	0
8:15 AM	0	4	0	0	0	0	1	0	0	0	0	4	0	0	0	0
8:30 AM	0	4	0	0	0	0	0	0	0	0	0	4	0	1	0	0
8:45 AM	0	5	0	0	0	0	0	0	0	1	0	3	0	0	0	0

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:00 PM	0	1	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
5:30 PM	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

AM PEAK HOUR 7:00 AM to 8:00 AM	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**25**	**0**	**2**	**0**	**0**	**16**	**0**	**0**	**1**	**0**	**13**	**0**	**1**	**0**	**0**
PHF	**0.75**				**0.80**				**0.70**				**0.25**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**
PHF	**0.75**				**0.00**				**0.75**				**0.25**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 6
Location: Seaport, Boston, MA
Street 1: Northern Avenue
Street 2: Pier 4 Boulevard
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	1	0	0	0	8	0	0	0	0	0	0	0	7
7:30 AM	0	0	0	2	0	0	0	15	0	0	0	0	0	0	0	13
7:45 AM	0	0	0	4	0	0	0	13	0	0	0	0	0	0	0	12
8:00 AM	0	0	0	5	0	0	0	10	0	0	0	0	0	0	0	9
8:15 AM	2	0	0	3	0	0	0	9	0	0	0	0	0	0	0	8
8:30 AM	1	0	0	1	0	0	0	8	0	0	0	0	0	0	0	7
8:45 AM	1	0	0	1	0	0	0	8	0	0	0	0	0	0	0	7

	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	33	0	0	0	0	0	0	0	33
4:15 PM	1	0	0	0	0	0	0	31	0	0	0	0	0	0	0	31
4:30 PM	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	25
4:45 PM	1	0	0	0	0	0	0	18	0	0	2	0	0	0	0	16
5:00 PM	2	0	0	2	0	0	0	21	0	0	1	0	0	0	0	18
5:15 PM	0	0	0	4	0	0	0	22	0	0	0	0	0	0	0	18
5:30 PM	1	0	0	2	0	0	0	25	0	0	1	0	0	0	0	23
5:45 PM	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	25

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	4	0	0	10	0	0	0	35	0	0	0	0	0	0	0	31

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	Pier 4 Boulevard Northbound				Driveway (one way) Southbound				Northern Avenue Eastbound				Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	3	0	0	8	0	0	0	93	0	0	2	0	0	0	0	84

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 7
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	14	4	4	0	3	9	15	0	37	116	33	1	1	68	6
7:15 AM	0	17	5	3	0	2	6	16	0	40	122	30	0	2	103	6
7:30 AM	0	19	5	1	0	1	2	15	0	40	116	24	1	2	129	5
7:45 AM	0	20	7	2	0	5	5	22	0	46	131	25	2	3	121	7
8:00 AM	0	20	8	3	0	9	7	26	0	48	134	23	2	3	102	9
8:15 AM	0	19	11	8	0	5	8	25	0	50	163	25	1	4	135	8
8:30 AM	0	17	12	5	0	8	9	21	0	47	165	25	0	4	155	6
8:45 AM	0	18	13	9	0	7	9	22	0	49	157	26	0	3	163	6

	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	45	7	4	0	6	8	56	0	16	122	22	1	4	111	1
4:15 PM	0	41	6	6	0	4	8	61	0	15	127	25	1	4	134	2
4:30 PM	0	34	4	8	0	2	7	61	0	13	120	26	2	4	145	3
4:45 PM	0	44	2	11	0	4	8	59	0	13	158	20	2	5	122	4
5:00 PM	0	49	0	13	0	5	8	65	0	12	180	13	1	5	132	3
5:15 PM	0	40	1	15	0	6	11	66	0	11	177	22	1	9	150	8
5:30 PM	0	28	0	15	0	6	12	65	0	9	158	29	0	12	165	12
5:45 PM	0	29	0	16	0	5	13	68	0	9	166	30	0	13	163	13

AM PEAK HOUR 8:00 AM to 9:00 AM	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**74**	**44**	**25**	**0**	**29**	**33**	**94**	**0**	**194**	**619**	**99**	**3**	**14**	**555**	**29**
PHF	**0.89**				**0.93**				**0.96**				**0.87**			
HV %	**0.0%**	**6.8%**	**2.3%**	**0.0%**	**0.0%**	**34.5%**	**0.0%**	**11.7%**	**0.0%**	**5.7%**	**6.9%**	**0.0%**	**0.0%**	**0.0%**	**5.9%**	**37.9%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**146**	**1**	**59**	**0**	**22**	**44**	**264**	**0**	**41**	**681**	**94**	**2**	**39**	**610**	**36**
PHF	**0.83**				**0.96**				**0.97**				**0.91**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**1.8%**	**2.8%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 7
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON
TRAFFIC DATA
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TRUCKS

	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	4	0	3	0	3	12	0	0	0	14	3
7:15 AM	0	0	1	0	0	3	0	4	0	3	14	0	0	0	17	4
7:30 AM	0	3	0	1	0	1	0	1	0	1	10	0	0	0	12	4
7:45 AM	0	3	0	1	0	3	0	4	0	1	12	0	0	0	10	3
8:00 AM	0	0	1	0	0	3	0	3	0	3	13	0	0	0	9	4
8:15 AM	0	1	0	0	0	1	0	4	0	1	9	0	0	0	7	3
8:30 AM	0	1	0	0	0	4	0	1	0	3	12	0	0	0	9	1
8:45 AM	0	3	0	0	0	2	0	3	0	4	9	0	0	0	8	3

	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	4	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	4	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**7**	**1**	**2**	**0**	**11**	**0**	**12**	**0**	**8**	**48**	**0**	**0**	**0**	**53**	**14**
PHF	**0.63**				**0.82**				**0.82**				**0.80**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Sleeper Street Northbound				Sleeper Street Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**0**	**0**	**0**	**11**	**1**
PHF	**0.00**				**0.00**				**0.80**				**0.60**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 7
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Sleeper Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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PEDESTRIANS & BICYCLES

	Sleeper Street Northbound					Sleeper Street Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	12		0	0	0	7		0	1	0	11		0	0	0	16	
7:15 AM	0	0	0	11		0	0	0	7		0	2	1	10		0	0	0	15	
7:30 AM	0	0	0	12		0	0	0	18		0	2	0	16		0	0	0	19	
7:45 AM	0	1	0	12		0	1	1	28		1	2	0	11		0	0	0	21	
8:00 AM	0	2	0	14		0	0	1	35		2	6	2	12		0	1	1	33	
8:15 AM	0	2	0	15		0	0	0	38		0	2	3	9		0	0	0	42	
8:30 AM	1	1	0	19		0	2	1	33		1	8	1	12		0	4	1	43	
8:45 AM	1	0	0	21		0	0	0	24		3	13	3	13		0	3	2	39	

	Sleeper Street Northbound					Sleeper Street Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	33		0	0	0	17		0	1	0	9		0	2	1	22	
4:15 PM	1	1	0	31		0	1	1	16		1	1	1	9		0	1	2	21	
4:30 PM	0	2	0	33		0	2	0	14		1	3	0	11		0	4	0	21	
4:45 PM	0	1	0	32		0	1	1	11		1	5	0	12		0	3	1	19	
5:00 PM	2	0	0	44		0	0	2	26		0	8	1	15		0	5	2	23	
5:15 PM	3	2	0	52		0	1	2	39		1	11	0	17		0	8	3	24	
5:30 PM	2	1	0	44		0	2	1	32		0	7	0	14		0	7	1	22	
5:45 PM	1	1	0	31		0	0	1	21		0	4	0	9		0	2	0	18	

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Sleeper Street Northbound					Sleeper Street Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	2	5	0	69		0	2	2	130		6	29	9	46		0	8	4	157	

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	Sleeper Street Northbound					Sleeper Street Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	8	4	0	171		0	3	6	118		1	30	1	55		0	22	6	87	

[1] Peak hours corresponds to vehicular peak hours.

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 8
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Boston Wharf Road
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	9	0	8	0	0	0	0	2	0	89	20	5	9	51	0
7:15 AM	0	12	0	9	0	0	0	0	1	0	95	26	4	12	75	0
7:30 AM	0	14	0	10	0	0	0	0	2	0	91	30	3	14	91	0
7:45 AM	0	23	0	9	0	0	0	0	1	0	96	36	3	15	95	0
8:00 AM	0	29	0	8	0	0	0	0	0	0	92	38	4	15	90	0
8:15 AM	0	29	0	11	0	0	0	0	1	0	136	36	4	17	108	0
8:30 AM	0	26	0	13	0	0	0	0	0	0	118	44	3	17	116	0
8:45 AM	0	27	0	14	0	0	0	0	0	0	115	35	3	18	122	0

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	21	0	10	0	0	0	0	1	0	91	26	8	10	86	0
4:15 PM	0	25	0	10	0	0	0	0	0	0	109	30	8	15	99	0
4:30 PM	0	27	0	9	0	0	0	0	1	0	117	32	7	19	102	0
4:45 PM	0	26	0	15	0	0	0	0	1	0	130	45	6	29	116	0
5:00 PM	0	22	0	20	0	0	0	0	0	0	131	54	4	37	131	0
5:15 PM	0	25	0	18	0	0	0	0	1	0	123	57	3	32	133	0
5:30 PM	0	19	0	14	0	0	0	0	1	0	104	55	10	36	147	0
5:45 PM	0	27	0	15	0	0	0	0	0	0	126	58	5	30	138	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**111**	**0**	**46**	**0**	**0**	**0**	**0**	**1**	**0**	**461**	**153**	**14**	**67**	**436**	**0**
PHF	**0.96**				**0.00**				**0.89**				**0.90**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**7.8%**	**4.6%**	**0.0%**	**7.5%**	**7.1%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**93**	**0**	**67**	**0**	**0**	**0**	**0**	**2**	**0**	**484**	**224**	**22**	**135**	**549**	**0**
PHF	**0.93**				**0.00**				**0.96**				**0.91**			
HV %	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**2.2%**	**0.0%**	**0.0%**	**3.3%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 8
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: Boston Wharf Road
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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TRUCKS

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	10	0	0	0	10	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	1	16	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	16	0	0	3	12	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	12	3	0	1	14	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	8	1	0	0	9	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	9	3	0	3	7	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	1	8	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	10	3	0	1	7	0

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	8	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	3	1	0	1	8	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	4	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	7	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	4	3	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**3**	**0**	**5**	**52**	**0**
PHF	**0.50**				**0.00**				**0.84**				**0.84**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**4**	**0**	**1**	**27**	**0**
PHF	**0.25**				**0.00**				**0.71**				**0.78**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 8
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Boston Wharf Road
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	13	0	0	0	0	0	1	0	5	0	1	0	7
7:15 AM	0	0	0	12	0	0	0	0	0	2	1	3	0	1	0	5
7:30 AM	0	0	1	25	0	0	0	0	0	3	1	11	0	4	0	17
7:45 AM	0	0	0	35	0	0	0	0	0	2	0	18	0	3	0	27
8:00 AM	1	0	0	44	0	0	0	0	0	4	2	22	0	5	0	34
8:15 AM	0	0	1	49	0	0	0	0	0	3	0	23	0	0	0	37
8:30 AM	0	0	0	44	0	0	0	0	0	6	1	18	0	4	0	33
8:45 AM	1	0	0	34	0	0	0	0	0	7	2	21	0	6	0	26

	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	51	0	0	0	0	0	2	0	16	0	1	0	22
4:15 PM	0	0	0	49	0	0	0	0	0	1	0	15	0	0	0	21
4:30 PM	1	0	0	62	0	0	0	0	0	4	1	13	0	5	0	15
4:45 PM	1	0	0	69	0	0	0	0	0	3	1	9	0	4	0	7
5:00 PM	0	0	0	70	0	0	0	0	0	5	2	15	0	9	0	17
5:15 PM	2	0	0	65	0	0	0	0	0	8	2	19	0	12	0	25
5:30 PM	1	0	1	66	0	0	0	0	0	7	3	24	0	8	0	23
5:45 PM	0	0	0	61	0	0	0	0	0	2	0	21	0	4	0	19

AM PEAK HOUR[1]	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
8:00 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	2	0	1	171	0	0	0	0	0	20	5	84	0	15	0	130

PM PEAK HOUR[1]	Boston Wharf Road Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
5:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	3	0	1	262	0	0	0	0	0	22	7	79	0	33	0	84

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 9
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: East Service Rd/Pier 4 Blvd
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	16	50	13	0	7	0	3	0	3	99	0	0	0	41	14
7:15 AM	0	18	54	13	0	9	0	7	2	4	102	0	0	0	62	17
7:30 AM	0	18	53	14	0	11	0	10	3	4	97	0	0	0	77	18
7:45 AM	0	24	54	11	0	11	0	10	3	5	100	0	0	0	64	25
8:00 AM	0	27	42	7	0	15	0	9	2	6	96	0	0	0	77	30
8:15 AM	0	35	49	6	0	20	0	10	3	7	115	0	0	0	89	22
8:30 AM	0	21	64	9	0	17	0	21	2	8	124	0	0	0	91	30
8:45 AM	0	32	67	15	0	27	0	14	2	8	119	0	0	0	94	24

	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	18	5	31	0	35	0	10	3	10	96	0	0	0	68	12
4:15 PM	0	16	7	30	0	34	0	12	3	11	113	0	0	0	86	17
4:30 PM	0	13	6	27	0	30	0	13	2	11	120	0	0	0	95	20
4:45 PM	0	14	10	28	0	37	0	18	3	10	138	0	0	0	121	20
5:00 PM	0	14	10	26	0	41	0	21	3	10	142	0	0	0	137	19
5:15 PM	0	15	11	27	0	47	0	23	4	9	135	0	0	0	134	27
5:30 PM	0	15	14	25	0	48	0	25	4	8	116	0	0	0	130	33
5:45 PM	0	16	14	26	0	50	0	24	4	8	123	0	0	0	130	35

AM PEAK HOUR 8:00 AM to 9:00 AM	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**115**	**222**	**37**	**0**	**79**	**0**	**54**	**9**	**29**	**454**	**0**	**0**	**0**	**351**	**106**
PHF	**0.82**				**0.81**				**0.92**				**0.94**			
HV %	**0.0%**	**0.0%**	**1.8%**	**0.0%**	**0.0%**	**13.9%**	**0.0%**	**13.0%**	**0.0%**	**20.7%**	**8.8%**	**0.0%**	**0.0%**	**0.0%**	**9.4%**	**6.6%**

PM PEAK HOUR 5:00 PM to 6:00 PM	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**60**	**49**	**104**	**0**	**186**	**0**	**93**	**15**	**35**	**516**	**0**	**0**	**0**	**531**	**114**
PHF	**0.95**				**0.94**				**0.91**				**0.98**			
HV %	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**1.6%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.9%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 9
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	East Service Rd/Pier 4 Blvd
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON
TRAFFIC DATA
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TRUCKS

	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	3	14	0	0	0	10	0
7:15 AM	0	0	1	0	0	1	0	1	0	4	18	0	0	0	14	0
7:30 AM	0	0	3	0	0	1	0	1	0	5	20	0	0	0	12	3
7:45 AM	0	0	1	0	0	3	0	0	0	3	17	0	0	0	13	1
8:00 AM	0	0	0	0	0	4	0	3	0	2	10	0	0	0	9	0
8:15 AM	0	0	0	0	0	3	0	1	0	1	9	0	0	0	8	3
8:30 AM	0	0	1	0	0	1	0	0	0	2	12	0	0	0	9	3
8:45 AM	0	0	3	0	0	3	0	3	0	1	9	0	0	0	7	1

	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	3	1
4:30 PM	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	4	1
5:15 PM	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	3	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0

AM PEAK HOUR 7:15 AM to 8:15 AM	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**5**	**0**	**0**	**9**	**0**	**5**	**0**	**14**	**65**	**0**	**0**	**0**	**48**	**4**
PHF	**0.42**				**0.50**				**0.79**				**0.87**			

PM PEAK HOUR 4:15 PM to 5:15 PM	East Service Road Northbound				Pier 4 Boulevard Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**0**	**0**	**11**	**0**	**0**	**0**	**11**	**2**
PHF	**0.25**				**0.75**				**0.69**				**0.65**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 9
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: East Service Rd/Pier 4 Blvd
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	East Service Road Northbound					Pier 4 Boulevard Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	11		0	0	0	5		0	0	0	2		0	1	0	5	
7:15 AM	0	0	0	8		0	0	0	1		0	1	0	7		0	1	0	7	
7:30 AM	0	0	0	19		0	0	0	8		0	3	0	13		0	3	0	14	
7:45 AM	0	0	0	28		0	0	1	15		1	4	0	17		0	2	0	20	
8:00 AM	0	0	0	35		1	0	0	23		1	8	0	16		0	7	1	25	
8:15 AM	0	0	0	39		2	0	1	29		1	7	0	14		0	6	2	28	
8:30 AM	0	0	0	47		1	0	2	36		0	11	0	12		0	5	1	17	
8:45 AM	0	0	0	51		0	0	1	39		2	12	0	8		0	8	1	4	

	East Service Road Northbound					Pier 4 Boulevard Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	30		0	0	0	40		0	2	0	5		0	2	0	16	
4:15 PM	0	0	0	29		1	0	0	38		0	3	0	8		0	1	1	15	
4:30 PM	0	0	0	32		0	0	0	28		0	4	0	10		0	4	0	14	
4:45 PM	0	0	0	31		0	0	0	35		0	2	0	11		0	5	0	12	
5:00 PM	0	0	0	43		2	0	0	31		0	7	0	11		0	6	0	10	
5:15 PM	0	0	1	51		1	0	0	38		0	9	0	9		0	13	0	7	
5:30 PM	0	0	0	47		1	0	0	35		0	8	0	8		0	9	2	7	
5:45 PM	0	0	0	39		1	0	0	28		0	3	0	7		0	5	0	6	

AM PEAK HOUR[1]	East Service Road Northbound					Pier 4 Boulevard Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	172		4	0	4	127		4	38	0	50		0	26	5	74	

PM PEAK HOUR[1]	East Service Road Northbound					Pier 4 Boulevard Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	1	180		5	0	0	132		0	27	0	35		0	33	2	30	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 10
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: B Street
Count Date: 11/1 &11/2/2016
Day of Week: Tues & Wed
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	38	0	17	0	0	0	0	0	0	108	6	0	9	17	0
7:15 AM	0	42	0	21	0	0	0	0	0	0	109	10	0	10	37	0
7:30 AM	0	42	0	23	0	0	0	0	0	0	105	13	0	10	53	0
7:45 AM	0	51	0	27	0	0	0	0	0	0	109	12	0	11	40	0
8:00 AM	0	55	0	28	0	0	0	0	0	0	105	10	0	9	25	0
8:15 AM	0	90	0	32	0	0	0	0	0	0	124	14	0	10	17	0
8:30 AM	0	68	0	31	0	0	0	0	0	0	131	17	0	9	55	0
8:45 AM	0	71	0	33	0	0	0	0	0	0	128	18	0	9	58	0

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	35	0	20	0	0	0	0	0	0	142	20	0	7	45	0
4:15 PM	0	46	0	28	0	0	0	0	0	0	154	22	0	12	57	0
4:30 PM	0	52	0	33	0	0	0	0	0	0	153	22	0	16	63	0
4:45 PM	0	53	0	37	0	0	0	0	0	0	169	32	0	18	91	0
5:00 PM	0	48	0	37	0	0	0	0	0	0	168	39	0	19	113	0
5:15 PM	0	54	0	32	0	0	0	0	0	0	164	42	0	19	112	0
5:30 PM	2	55	0	24	0	0	0	0	0	0	144	41	0	18	100	0
5:45 PM	0	58	0	25	0	0	0	0	0	0	155	43	0	19	105	0

AM PEAK HOUR 8:00 AM to 9:00 AM	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**284**	**0**	**124**	**0**	**0**	**0**	**0**	**0**	**0**	**488**	**59**	**0**	**37**	**155**	**0**
PHF	**0.84**				**0.00**				**0.92**				**0.72**			
HV %	**0.0%**	**4.6%**	**0.0%**	**6.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**10.5%**	**5.1%**	**0.0%**	**24.3%**	**28.4%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	2	**215**	**0**	**118**	**0**	**0**	**0**	**0**	**0**	**0**	**631**	**165**	**0**	**75**	**430**	**0**
PHF	**0.97**				**0.00**				**0.96**				**0.96**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.0%**	**0.0%**	**0.0%**	**1.3%**	**3.7%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 10
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	B Street
Count Date:	11/1 &11/2/2016
Day of Week:	Tues & Wed
Weather:	Partly Cloudy, 55° F

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TRUCKS

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	9	0	0	1	8	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	12	0	0	3	12	0
7:30 AM	0	3	0	1	0	0	0	0	0	0	10	1	0	0	10	0
7:45 AM	0	1	0	3	0	0	0	0	0	0	12	0	0	3	14	0
8:00 AM	0	4	0	3	0	0	0	0	0	0	14	0	0	2	9	0
8:15 AM	0	3	0	1	0	0	0	0	0	0	13	3	0	3	12	0
8:30 AM	0	3	0	1	0	0	0	0	0	0	10	0	0	3	10	0
8:45 AM	0	3	0	3	0	0	0	0	0	0	14	0	0	1	13	0

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	3	0	0	1	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	5	0	0	0	7	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0
5:15 PM	0	0	0	1	0	0	0	0	0	0	4	0	0	1	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0

AM PEAK HOUR	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
8:00 AM to 9:00 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**13**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**3**	**0**	**9**	**44**	**0**
PHF	**0.75**				**0.00**				**0.84**				**0.88**			

PM PEAK HOUR	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
4:15 PM to 5:15 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**24**	**0**
PHF	**0.25**				**0.00**				**0.61**				**0.75**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 10
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: B Street
Count Date: 11/1 &11/2/2016
Day of Week: Tues & Wed
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	18	0	0	0	0	0	2	0	4	0	1	0	3
7:15 AM	0	0	0	17	0	0	0	0	0	4	0	8	0	2	0	5
7:30 AM	0	0	0	20	0	0	0	0	0	5	0	9	0	4	0	6
7:45 AM	0	0	0	15	0	0	0	0	0	3	0	9	0	5	0	7
8:00 AM	0	0	0	28	0	0	0	0	0	6	0	13	0	6	0	9
8:15 AM	1	0	0	39	0	0	0	0	0	4	0	15	0	5	0	11
8:30 AM	1	0	0	51	0	0	0	0	0	5	0	11	0	8	0	12
8:45 AM	0	0	0	59	0	0	0	0	0	8	0	5	0	9	0	12

	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	58	0	0	0	0	0	3	0	5	0	2	0	16
4:15 PM	0	0	0	55	0	0	0	0	0	6	0	5	0	3	0	15
4:30 PM	0	0	0	64	0	0	0	0	0	5	0	14	0	3	0	15
4:45 PM	0	0	0	67	0	0	0	0	0	3	0	21	0	1	0	14
5:00 PM	0	0	0	75	0	0	0	0	0	6	0	16	0	6	0	11
5:15 PM	0	0	1	76	0	0	0	0	0	2	1	9	0	3	0	16
5:30 PM	1	0	0	69	0	0	0	0	0	4	0	8	0	5	0	18
5:45 PM	0	0	0	55	0	0	0	0	0	0	1	7	0	3	0	18

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	2	0	0	177	0	0	0	0	0	23	0	44	0	28	0	44

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	B Street Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1	0	1	275	0	0	0	0	0	12	2	40	0	17	0	63

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 11
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: Seaport Lane
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	3	0	111	11	0	4	26	0
7:15 AM	0	0	0	0	0	0	0	0	2	0	116	12	1	5	47	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	117	11	0	6	63	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	119	14	1	6	58	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	115	15	1	5	48	0
8:15 AM	0	0	0	0	0	0	0	0	1	0	136	16	0	6	60	0
8:30 AM	0	0	0	0	0	0	0	0	1	0	145	16	0	6	64	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	144	17	0	5	67	0

	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	132	30	2	10	52	0
4:15 PM	0	0	0	0	0	0	0	0	1	0	140	41	1	13	69	0
4:30 PM	0	0	0	0	0	0	0	0	1	0	137	48	0	15	79	0
4:45 PM	0	0	0	0	0	0	0	0	2	0	127	50	0	13	109	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	157	48	1	9	132	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	149	46	1	12	131	0
5:30 PM	0	0	0	0	0	0	0	0	2	0	154	39	0	14	118	0
5:45 PM	0	0	0	0	0	0	0	0	2	0	137	41	0	15	124	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**540**	**64**	**1**	**22**	**239**	**0**
PHF	**0.00**				**0.00**				**0.94**				**0.91**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.7%**	**3.1%**	**0.0%**	**0.0%**	**13.8%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**597**	**174**	**2**	**50**	**505**	**0**
PHF	**0.00**				**0.00**				**0.95**				**0.97**			
HV %	**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%**	**0.0%**	**3.8%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 11
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Seaport Lane
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON
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TRUCKS

	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	21	0	0	0	22	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	31	1	0	0	30	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	23	0	0	0	22	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	18	1	0	0	20	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	10	1	0	0	12	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0

	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	8	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	7	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**93**	**2**	**0**	**0**	**94**	**0**
PHF	**0.00**				**0.00**				**0.74**				**0.78**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Seaport Lane Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**0**	**24**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.75**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 11
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: Seaport Lane
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Seaport Lane Northbound					Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	19		0	0	0	0		0	2	0	2		0	3	0	5	
7:15 AM	0	0	0	18		0	0	0	0		0	5	0	2		0	2	0	2	
7:30 AM	0	0	0	26		0	0	0	0		0	6	0	4		0	5	0	3	
7:45 AM	1	0	0	32		0	0	0	0		0	4	0	6		0	5	0	4	
8:00 AM	0	0	0	32		0	0	0	0		0	5	0	6		0	6	0	4	
8:15 AM	0	0	0	29		0	0	0	0		0	4	0	5		0	3	0	3	
8:30 AM	1	0	0	38		0	0	0	0		0	8	0	6		0	7	0	8	
8:45 AM	0	0	0	44		0	0	0	0		0	11	0	7		0	8	0	3	

	Seaport Lane Northbound					Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	45		0	0	0	0		0	1	0	5		0	2	0	3	
4:15 PM	0	0	0	43		0	0	0	0		0	3	0	8		0	3	0	4	
4:30 PM	0	0	0	51		0	0	0	0		0	4	0	14		0	6	0	6	
4:45 PM	0	0	0	54		0	0	0	0		0	3	0	19		0	4	0	7	
5:00 PM	0	0	0	51		0	0	0	0		0	6	0	16		0	5	0	6	
5:15 PM	0	0	0	43		0	0	0	0		0	9	0	12		0	10	0	5	
5:30 PM	0	0	0	48		0	0	0	0		0	8	0	8		0	9	0	9	
5:45 PM	0	0	0	49		0	0	0	0		0	0	0	13		0	1	0	6	

AM PEAK HOUR[1]	Seaport Lane Northbound					Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
8:00 AM to 9:00 AM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	1	0	0	143		0	0	0	0		0	28	0	24		0	24	0	18	

PM PEAK HOUR[1]	Seaport Lane Northbound					Southbound					Seaport Boulevard Eastbound					Seaport Boulevard Westbound				
5:00 PM to 6:00 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	191		0	0	0	0		0	23	0	49		0	25	0	26	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 12
Location: Seaport, Boston, MA
Street 1: Seaport Blvd/ Northern Ave
Street 2: D Street/ Boston Fish Pier
Count Date: 11/1 & 11/2/2016
Day of Week: Tuesday & Wed
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	22	0	3	0	4	2	2	0	3	82	26	0	11	6	5
7:15 AM	0	26	0	4	0	5	3	3	0	4	82	30	0	11	23	7
7:30 AM	0	28	0	3	0	6	3	4	0	5	81	31	0	9	37	8
7:45 AM	0	32	0	4	0	7	4	5	0	6	78	35	0	9	27	8
8:00 AM	0	32	0	4	0	8	4	5	0	6	73	36	0	9	16	7
8:15 AM	0	35	0	5	0	9	5	4	0	5	92	39	0	10	27	7
8:30 AM	0	36	0	3	0	9	3	3	0	4	103	38	0	10	31	6
8:45 AM	0	38	0	3	0	8	3	3	0	4	100	40	0	11	31	6

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	25	0	4	0	6	11	10	0	7	69	56	0	11	27	7
4:15 PM	0	28	0	4	0	6	11	9	0	7	73	60	0	12	45	7
4:30 PM	0	28	0	5	0	5	9	8	0	6	72	59	0	12	58	6
4:45 PM	0	35	0	5	0	5	9	7	0	7	56	65	0	13	80	6
5:00 PM	0	39	0	4	0	4	8	6	0	6	86	65	0	13	96	5
5:15 PM	0	37	0	5	0	4	7	7	0	6	74	69	0	11	100	6
5:30 PM	0	32	0	6	0	3	5	8	0	5	82	66	0	8	105	6
5:45 PM	0	34	0	6	0	3	5	8	0	5	63	69	0	8	97	5

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**141**	**0**	**15**	**0**	**34**	**15**	**15**	**0**	**19**	**368**	**153**	**0**	**40**	**105**	**26**
PHF	**0.95**				**0.89**				**0.93**				**0.89**			
HV %	**0.0%**	**11.3%**	**0.0%**	**0.0%**	**0.0%**	**23.5%**	**66.7%**	**6.7%**	**0.0%**	**26.3%**	**17.1%**	**13.1%**	**0.0%**	**0.0%**	**48.6%**	**50.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**142**	**0**	**21**	**0**	**14**	**25**	**29**	**0**	**22**	**305**	**269**	**0**	**40**	**398**	**22**
PHF	**0.95**				**0.94**				**0.95**				**0.97**			
HV %	**0.0%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.3%**	**0.0%**	**0.0%**	**0.0%**	**4.3%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 12
Location:	Seaport, Boston, MA
Street 1:	Seaport Blvd/ Northern Ave
Street 2:	D Street/ Boston Fish Pier
Count Date:	11/1 & 11/2/2016
Day of Week:	Tuesday & Wed
Weather:	Partly Cloudy, 55° F

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TRUCKS

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	5	0	0	0	4	0	0	0	0	7	4	0	0	3	3
7:15 AM	0	4	0	0	0	4	0	0	0	0	8	7	0	0	4	4
7:30 AM	0	4	0	0	0	5	3	1	0	1	12	7	0	0	5	5
7:45 AM	0	3	0	0	0	4	0	3	0	0	16	4	0	0	9	3
8:00 AM	0	5	0	0	0	3	1	0	0	1	14	8	0	0	10	4
8:15 AM	0	4	0	0	0	1	3	0	0	3	18	3	0	0	13	5
8:30 AM	0	4	0	0	0	3	5	1	0	0	14	5	0	0	12	3
8:45 AM	0	3	0	0	0	1	1	0	0	1	17	4	0	0	16	1

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	5	1	0	0	8	0
4:15 PM	0	3	0	0	0	0	0	0	0	0	7	0	0	0	9	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	9	1	0	0	5	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	8	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**16**	**0**	**0**	**0**	**8**	**10**	**1**	**0**	**5**	**63**	**20**	**0**	**0**	**51**	**13**
PHF	**0.80**				**0.53**				**0.92**				**0.89**			

PM PEAK HOUR 4:00 PM to 5:00 PM	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**26**	**2**	**0**	**0**	**25**	**0**
PHF	**0.42**				**0.00**				**0.70**				**0.69**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 12
Location:	Seaport, Boston, MA
Street 1:	Seaport Blvd/ Northern Ave
Street 2:	D Street/ Boston Fish Pier
Count Date:	11/1 & 11/2/2016
Day of Week:	Tuesday & Wed
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	24	0	0	0	3	0	2	0	4	0	2	0	2
7:15 AM	1	0	0	23	0	0	0	7	0	2	0	2	0	3	0	3
7:30 AM	3	0	0	32	0	0	0	8	0	4	1	5	0	4	0	8
7:45 AM	2	0	0	38	0	0	0	9	0	5	2	8	0	6	0	12
8:00 AM	3	0	0	49	0	0	0	8	0	4	1	11	0	5	0	11
8:15 AM	1	0	0	55	0	0	0	7	0	3	0	9	0	1	0	8
8:30 AM	4	0	0	43	0	0	0	8	0	6	2	7	0	4	0	7
8:45 AM	0	0	0	26	0	0	0	6	0	5	0	5	0	3	0	5

	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	20	0	0	0	12	0	1	0	3	0	3	0	3
4:15 PM	0	0	0	19	0	0	0	11	0	1	0	5	0	2	0	2
4:30 PM	0	0	0	32	0	0	0	8	0	3	0	4	0	5	0	5
4:45 PM	1	0	0	42	0	0	0	5	0	2	0	3	0	4	0	8
5:00 PM	0	0	0	50	0	0	0	11	0	4	0	4	0	8	0	12
5:15 PM	0	0	0	54	0	0	0	16	0	6	0	5	0	12	0	14
5:30 PM	1	0	0	45	0	0	0	14	0	5	0	8	0	9	0	10
5:45 PM	0	0	0	32	0	0	0	11	0	1	0	6	0	2	0	5

AM PEAK HOUR[1]	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
8:00 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	8	0	0	173	0	0	0	29	0	18	3	32	0	13	0	31

PM PEAK HOUR[1]	D Street Northbound				Boston Fish Pier Southbound				Seaport Boulevard Eastbound				Northern Avenue Westbound			
5:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	1	0	0	181	0	0	0	52	0	16	0	23	0	31	0	41

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 13
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: Watermark Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	3	0	0	0	2	0	0	0	0	4	2
7:15 AM	0	0	0	0	0	2	0	0	0	2	1	0	0	0	5	1
7:30 AM	0	0	0	0	0	1	0	0	0	1	2	0	0	0	6	0
7:45 AM	0	0	0	0	0	2	0	1	0	2	1	0	0	0	6	1
8:00 AM	0	0	0	0	0	3	0	0	0	1	0	0	0	0	5	2
8:15 AM	0	0	0	0	0	2	0	0	0	0	2	0	0	0	4	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	7	1
8:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	10	2

	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	2	0	1	0	1	5	0	0	0	3	2
4:15 PM	0	0	0	0	0	2	0	1	0	1	5	0	0	0	3	2
4:30 PM	0	0	0	0	0	1	0	0	0	0	5	0	0	0	2	1
4:45 PM	0	0	0	0	0	2	0	1	0	1	9	0	0	0	4	1
5:00 PM	0	0	0	0	0	3	0	0	0	0	12	0	0	0	6	0
5:15 PM	0	0	0	0	0	2	0	1	0	1	9	0	0	0	11	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	15	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	5	0	0	0	16	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**0**	**26**	**7**
PHF	**0.00**				**0.50**				**0.45**				**0.69**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**28.6%**	**0.0%**	**0.0%**	**0.0%**	**7.7%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**1**	**31**	**0**	**0**	**0**	**48**	**0**
PHF	**0.00**				**0.58**				**0.67**				**0.75**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.2%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 13
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: Watermark Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	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	1	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
8:00 AM	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	2	0	0	0	1	0
8:30 AM	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	1	0

	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:45 PM	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
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	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	1	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**
PHF	**0.00**				**0.00**				**0.50**				**0.50**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				Watermark Seaport (Parcel K) Garage Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**
PHF	**0.00**				**0.00**				**0.25**				**0.50**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 13
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: Watermark Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Northbound					Watermark Seaport (Parcel K) Garage Southbound					Autumn Lane Eastbound					Autumn Lane Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	6		0	0	0	0		0	0	0	0	
7:15 AM	0	0	0	0		0	0	0	13		0	0	0	0		0	0	0	0	
7:30 AM	0	0	0	0		0	0	0	12		0	1	0	0		0	0	0	0	
7:45 AM	0	0	0	0		0	0	0	9		0	1	0	0		0	1	0	0	
8:00 AM	0	0	0	0		0	0	0	10		0	3	0	0		0	3	0	0	
8:15 AM	0	0	0	0		0	0	0	15		0	1	0	0		0	2	0	0	
8:30 AM	0	0	0	0		0	0	0	14		0	3	0	0		0	2	0	0	
8:45 AM	0	0	0	0		0	0	0	11		0	2	0	0		0	0	0	0	

	Northbound					Watermark Seaport (Parcel K) Garage Southbound					Autumn Lane Eastbound					Autumn Lane Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	3		0	1	0	0		0	0	0	0	
4:15 PM	0	0	0	0		0	0	0	6		0	0	0	0		0	0	0	0	
4:30 PM	0	0	0	0		0	0	0	9		0	0	0	0		0	1	0	0	
4:45 PM	0	0	0	0		0	0	0	5		0	1	0	0		0	0	0	0	
5:00 PM	0	0	0	0		0	0	0	8		0	2	0	0		0	3	0	0	
5:15 PM	0	0	0	0		0	0	0	7		0	2	0	0		0	5	0	0	
5:30 PM	0	0	0	0		0	0	0	13		0	4	0	0		0	2	0	0	
5:45 PM	0	0	0	0		0	0	0	17		0	1	0	0		0	1	0	0	

AM PEAK HOUR[1]	Northbound					Watermark Seaport (Parcel K) Garage Southbound					Autumn Lane Eastbound					Autumn Lane Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		0	0	0	50		0	9	0	0		0	7	0	0	

PM PEAK HOUR[1]	Northbound					Watermark Seaport (Parcel K) Garage Southbound					Autumn Lane Eastbound					Autumn Lane Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		0	0	0	45		0	9	0	0		0	11	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 14
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: 101 Seaport Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	1	0	14	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	1	15	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	15	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	2	16	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	3	16	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	1	2	14	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0

	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	8	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	9	2	1	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	13	1	2	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	12	2	1	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	9	2	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0

AM PEAK HOUR	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
7:30 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**7**	**61**	**0**	**0**	**0**	**0**	**0**	**1**
PHF	**0.00**				**0.75**				**0.89**				**0.25**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
4:45 PM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**7**	**4**	**1**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.83**				**0.75**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 14
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: 101 Seaport Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7:45 AM	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
8:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0

	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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

AM PEAK HOUR 8:00 AM to 9:00 AM	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**4**	**0**
PHF	**0.00**				**0.00**				**0.45**				**0.33**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				101 Seaport (Price Waterhouse Cooper) Southbound				Autumn Lane Eastbound				Autumn Lane Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.00**				**0.00**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 14
Location: Seaport, Boston, MA
Street 1: Autumn Lane
Street 2: 101 Seaport Garage
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

					101 Seaport (Price Waterhouse Cooper) Garage				Autumn Lane				Autumn Lane			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	6	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	13	0	2	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	9	0	1	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	6	0	2	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0

					101 Seaport (Price Waterhouse Cooper) Garage				Autumn Lane				Autumn Lane			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	9	0	0	0	0	0	2	0	0
5:30 PM	0	0	0	0	0	0	0	8	0	0	0	0	0	1	0	0
5:45 PM	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]					101 Seaport (Price Waterhouse Cooper) Garage				Autumn Lane				Autumn Lane			
7:30 AM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:30 AM	0	0	0	0	0	0	1	37	0	4	0	0	0	0	0	0

PM PEAK HOUR[1]					101 Seaport (Price Waterhouse Cooper) Garage				Autumn Lane				Autumn Lane			
4:45 PM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:45 PM	0	0	0	0	0	0	0	27	0	0	0	0	0	3	0	0

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 15
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Sleeper Street/ Driveway
Count Date:	11/2/2016
Day of Week:	Wednesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	38	0	5	0	3	63	0	0	0	68	18
7:15 AM	0	0	0	0	0	30	0	8	0	3	76	0	0	0	72	20
7:30 AM	0	1	0	1	0	20	0	10	0	3	82	0	0	0	69	21
7:45 AM	0	1	0	0	0	24	0	10	0	5	92	0	0	2	81	28
8:00 AM	0	0	0	1	0	25	0	9	0	7	93	0	0	4	86	33
8:15 AM	0	1	0	0	0	25	0	10	0	11	93	0	0	2	87	35
8:30 AM	0	0	0	1	0	22	0	9	0	13	85	0	0	4	80	33
8:45 AM	0	1	0	0	0	23	0	9	0	14	89	0	0	1	84	35

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	29	0	12	0	7	85	0	0	0	55	22
4:15 PM	0	0	0	1	0	28	0	10	0	8	95	0	0	0	61	30
4:30 PM	0	1	0	0	0	24	0	7	0	8	95	0	0	0	61	36
4:45 PM	0	0	0	0	0	25	0	8	0	11	97	0	0	0	69	38
5:00 PM	0	2	0	1	0	23	0	8	0	13	90	0	0	0	70	37
5:15 PM	0	1	0	1	0	21	0	9	0	14	99	0	0	2	77	36
5:30 PM	0	0	0	2	0	17	0	8	0	13	98	0	0	3	76	31
5:45 PM	0	1	0	1	0	18	0	8	0	14	103	0	0	1	80	33

AM PEAK HOUR 8:00 AM to 9:00 AM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**0**	**2**	**0**	**95**	**0**	**37**	**0**	**45**	**360**	**0**	**0**	**11**	**337**	**136**
PHF	**1.00**				**0.94**				**0.97**				**0.98**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.6%**	**0.0%**	**0.0%**	**0.0%**	**5.6%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**4**	**0**	**5**	**0**	**79**	**0**	**33**	**0**	**54**	**390**	**0**	**0**	**6**	**303**	**137**
PHF	**0.75**				**0.90**				**0.95**				**0.97**			
HV %	**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%**	**0.0%**	**1.3%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 15
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Sleeper Street/ Driveway
Count Date:	11/2/2016
Day of Week:	Wednesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	7	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	5	0
7:45 AM	0	0	0	0	0	3	0	0	0	0	5	0	0	0	4	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	7	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:30 PM	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

AM PEAK HOUR 7:00 AM to 8:00 AM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**20**	**0**
PHF	**0.00**				**0.42**				**0.82**				**0.71**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**5**	**0**
PHF	**0.00**				**0.00**				**0.67**				**0.42**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 15
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Sleeper Street/ Driveway
Count Date: 11/2/2016
Day of Week: Wednesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	1	0	0	50	0	5	0	0	0	3	0	0
7:15 AM	0	0	0	0	0	0	1	74	1	4	0	0	0	6	1	0
7:30 AM	0	0	0	0	1	0	0	90	0	5	0	0	0	4	0	0
7:45 AM	0	0	0	0	3	0	2	103	2	7	0	0	0	5	0	0
8:00 AM	0	0	0	0	2	0	1	106	2	9	0	0	0	7	1	0
8:15 AM	0	0	0	0	1	0	1	178	1	8	0	0	0	7	1	0
8:30 AM	0	0	0	0	1	0	1	233	1	7	0	0	0	4	0	0
8:45 AM	0	0	0	0	2	0	2	221	0	5	0	0	0	5	1	0

	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	1	0	0	0	0	1	114	0	4	0	0	0	2	0	0
4:15 PM	0	0	0	0	1	0	2	109	1	4	0	0	0	3	0	0
4:30 PM	0	0	0	0	0	0	3	129	1	6	0	0	0	5	1	0
4:45 PM	0	1	0	0	2	0	1	137	0	5	0	0	0	6	1	0
5:00 PM	0	0	0	0	3	0	1	164	2	7	0	0	0	6	0	0
5:15 PM	0	1	0	0	1	0	1	176	1	8	0	0	0	7	1	0
5:30 PM	0	1	0	0	2	0	2	132	2	5	0	0	0	5	1	0
5:45 PM	0	0	0	0	1	0	0	75	0	3	0	0	0	4	0	0

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	6	0	5	738	4	29	0	0	0	23	3	0

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	Driveway Northbound				Sleeper Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	2	0	0	7	0	4	547	5	23	0	0	0	22	2	0

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 16
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Farnsworth Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	4	0	9	0	9	91	0	0	0	93	11
7:15 AM	0	0	0	0	0	4	0	6	0	7	91	0	0	0	99	11
7:30 AM	0	0	0	0	0	3	0	2	0	5	83	0	0	0	96	10
7:45 AM	0	0	0	0	0	5	0	3	0	7	100	0	1	0	103	16
8:00 AM	0	0	0	0	0	6	0	3	0	8	108	0	2	0	101	20
8:15 AM	0	0	0	0	0	7	0	5	0	9	110	0	0	0	116	24
8:30 AM	0	0	0	0	0	6	0	7	0	10	101	0	0	0	119	25
8:45 AM	0	0	0	0	0	6	0	7	0	11	106	0	1	0	125	26

	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	7	0	7	0	6	110	0	0	0	81	8
4:15 PM	0	0	0	0	0	8	0	6	0	5	102	0	0	0	83	6
4:30 PM	0	0	0	0	0	9	0	5	1	4	115	0	0	0	78	3
4:45 PM	0	0	0	0	0	14	0	7	0	3	119	0	0	0	93	5
5:00 PM	0	0	0	0	0	18	0	9	0	2	118	0	0	0	99	6
5:15 PM	0	0	0	0	0	17	0	11	0	3	115	0	0	0	100	9
5:30 PM	0	0	0	0	0	15	0	12	0	4	117	0	0	0	102	12
5:45 PM	0	0	0	0	0	16	0	13	0	4	111	0	0	0	100	13

AM PEAK HOUR 8:00 AM to 9:00 AM	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**25**	**0**	**22**	**0**	**38**	**425**	**0**	**3**	**0**	**461**	**95**
PHF	**0.00**				**0.90**				**0.97**				**0.92**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.0%**	**0.0%**	**4.5%**	**0.0%**	**10.5%**	**6.8%**	**0.0%**	**0.0%**	**0.0%**	**5.9%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**66**	**0**	**45**	**0**	**13**	**461**	**0**	**0**	**0**	**401**	**40**
PHF	**0.00**				**0.96**				**0.98**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.4%**	**0.0%**	**0.0%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 16
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Farnsworth Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	8	0
7:45 AM	0	0	0	0	0	1	0	0	0	1	9	0	0	0	4	0
8:00 AM	0	0	0	0	0	0	0	0	0	3	8	0	0	0	7	0
8:15 AM	0	0	0	0	0	0	0	1	0	1	7	0	0	0	5	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	9	0	0	0	7	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	8	0

	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:30 PM	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
5:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	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

AM PEAK HOUR 7:30 AM to 8:30 AM	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**6**	**32**	**0**	**0**	**0**	**24**	**0**
PHF	**0.00**				**0.50**				**0.86**				**0.75**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Northbound				Farnsworth Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**
PHF	**0.00**				**0.50**				**0.50**				**0.50**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 16
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Farnsworth Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Northbound					Farnsworth Street Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	57		0	3	0	0		0	4	1	0	
7:15 AM	0	0	0	0		0	0	0	54		1	7	0	0		0	3	0	0	
7:30 AM	0	0	0	0		0	0	0	70		2	5	0	0		0	6	1	0	
7:45 AM	0	0	0	0		0	0	0	80		1	4	0	0		0	4	0	0	
8:00 AM	0	0	0	0		0	0	0	107		2	7	0	0		0	8	2	0	
8:15 AM	0	0	0	0		0	0	0	123		1	5	0	0		0	9	2	0	
8:30 AM	0	0	0	0		0	0	0	130		3	6	0	0		0	7	2	0	
8:45 AM	0	0	0	0		0	0	0	125		1	7	0	0		0	10	1	0	

	Northbound					Farnsworth Street Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	89		0	2	0	0		0	3	0	0	
4:15 PM	0	0	0	0		0	0	0	85		0	1	0	0		0	2	0	0	
4:30 PM	0	0	0	0		0	0	1	84		0	3	0	0		0	4	0	0	
4:45 PM	0	0	0	0		1	0	1	75		0	4	0	0		0	2	0	0	
5:00 PM	0	0	0	0		1	0	0	93		0	5	0	0		0	8	0	0	
5:15 PM	0	0	0	0		0	0	0	102		0	2	0	0		0	14	0	0	
5:30 PM	0	0	0	0		1	0	1	103		0	6	0	0		0	9	0	0	
5:45 PM	0	0	0	0		0	0	2	95		0	2	0	0		0	5	0	0	

AM PEAK HOUR[1]	Northbound					Farnsworth Street Southbound					Congress Street Eastbound					Congress Street Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		0	0	0	485		7	25	0	0		0	34	7	0	

PM PEAK HOUR[1]	Northbound					Farnsworth Street Southbound					Congress Street Eastbound					Congress Street Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		2	0	3	393		0	15	0	0		0	36	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 17
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Thomson Place/A Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	26	3	14	0	1	1	2	0	2	64	29	0	37	76	1
7:15 AM	0	31	3	18	0	2	2	3	0	2	65	28	0	43	76	2
7:30 AM	0	33	2	20	0	1	2	2	0	1	60	25	0	44	71	1
7:45 AM	0	35	2	22	0	2	3	2	0	1	77	28	0	49	82	2
8:00 AM	0	34	2	22	0	3	2	1	0	0	88	28	0	49	86	2
8:15 AM	0	36	3	23	0	4	2	2	0	2	83	32	0	55	102	3
8:30 AM	0	35	3	21	0	5	1	1	0	1	74	32	0	55	108	1
8:45 AM	0	37	3	22	0	5	1	1	0	1	78	34	0	58	113	1

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	30	1	33	0	2	2	5	0	1	77	39	0	34	54	1
4:15 PM	0	32	2	35	0	3	1	4	0	0	91	39	0	37	53	1
4:30 PM	0	31	3	34	0	3	2	3	0	1	95	35	0	37	47	0
4:45 PM	0	34	3	36	0	4	2	2	0	1	95	36	0	36	69	1
5:00 PM	0	33	2	35	0	4	1	1	0	0	99	34	0	34	76	2
5:15 PM	0	33	2	38	0	5	2	2	0	1	101	34	0	33	74	3
5:30 PM	0	30	2	38	0	3	1	2	0	0	96	31	0	28	75	3
5:45 PM	0	32	2	40	0	3	1	2	0	0	100	33	0	29	81	2

AM PEAK HOUR 8:00 AM to 9:00 AM	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**142**	**11**	**88**	**0**	**17**	**6**	**5**	**0**	**4**	**323**	**126**	**0**	**217**	**409**	**7**
PHF	**0.97**				**0.88**				**0.97**				**0.92**			
HV %	**0.0%**	**4.2%**	**9.1%**	**2.3%**	**0.0%**	**0.0%**	**0.0%**	**40.0%**	**0.0%**	**0.0%**	**5.0%**	**3.2%**	**0.0%**	**0.0%**	**2.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**128**	**8**	**151**	**0**	**15**	**5**	**7**	**0**	**1**	**396**	**132**	**0**	**124**	**306**	**10**
PHF	**0.97**				**0.75**				**0.97**				**0.98**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 17
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Thomson Place/A Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	3	1	0	0	4	0
7:30 AM	0	3	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:45 AM	0	1	1	0	0	0	0	0	0	0	5	1	0	0	3	0
8:00 AM	0	1	0	0	0	0	0	1	0	0	7	3	0	0	3	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	4	1	0	0	1	0
8:30 AM	0	3	1	1	0	0	0	0	0	0	1	0	0	0	0	0
8:45 AM	0	1	0	1	0	0	0	1	0	0	4	0	0	0	4	0

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**6**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**16**	**5**	**0**	**0**	**11**	**0**
PHF	**0.58**				**0.25**				**0.53**				**0.69**			

PM PEAK HOUR 4:00 PM to 5:00 PM	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**4**	**0**
PHF	**0.00**				**0.00**				**0.50**				**0.33**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 17
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Thomson Place/A Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	5	0	0	0	25	0	1	0	6	0	2	0	2
7:15 AM	0	0	0	3	0	0	0	39	0	3	2	4	0	1	0	6
7:30 AM	2	1	0	6	0	0	0	43	0	3	1	27	0	1	0	9
7:45 AM	3	0	0	9	0	0	0	42	0	4	2	47	0	2	0	12
8:00 AM	4	0	1	18	0	0	0	54	0	5	3	33	0	2	0	9
8:15 AM	3	1	0	25	0	0	0	60	0	2	1	16	0	1	0	5
8:30 AM	6	1	2	24	0	0	0	60	0	3	2	16	0	3	0	6
8:45 AM	7	0	4	20	0	0	0	55	0	4	1	14	0	2	0	7

	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	1	0	0	13	0	0	0	19	0	0	0	25	0	0	0	3
4:15 PM	0	0	0	18	0	0	0	28	0	2	0	24	0	1	0	5
4:30 PM	2	0	0	20	0	0	0	33	0	1	0	27	0	2	0	9
4:45 PM	1	0	1	21	0	0	0	35	0	2	0	28	0	0	0	13
5:00 PM	3	0	0	26	0	1	1	35	0	4	0	36	1	5	0	15
5:15 PM	4	0	0	29	0	0	2	32	0	3	0	41	0	7	0	16
5:30 PM	5	0	1	25	0	0	1	33	0	5	0	35	0	4	0	14
5:45 PM	1	0	0	19	0	1	0	30	0	3	0	25	1	1	0	11

AM PEAK HOUR[1]	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
8:00 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	20	2	7	87	0	0	0	229	0	14	7	79	0	8	0	27

PM PEAK HOUR[1]	A Street Northbound				Thomson Place Southbound				Congress Street Eastbound				Congress Street Westbound			
5:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	13	0	1	99	0	2	4	130	0	15	0	137	2	17	0	56

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 18
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Boston Wharf Rd/Service Rd
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	West Service Road Northbound				Boston Wharf Road Southbound			Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	21	9	20	2	13	11	0	11	27	22	5	12	72	15
7:15 AM	0	19	13	20	4	13	12	0	14	38	22	6	15	89	17
7:30 AM	0	16	15	19	6	11	13	0	16	45	19	5	17	98	17
7:45 AM	0	17	22	18	4	12	13	0	14	49	23	5	18	106	24
8:00 AM	0	16	27	15	2	12	12	0	11	48	25	4	18	104	28
8:15 AM	0	22	29	14	8	14	9	0	10	54	36	5	29	123	30
8:30 AM	0	25	28	12	13	15	6	0	8	55	43	4	37	131	30
8:45 AM	0	26	29	13	14	16	6	0	8	58	45	4	39	138	32

	West Service Road Northbound				Boston Wharf Road Southbound			Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	8	7	7	10	37	11	0	11	55	65	4	12	53	6
4:15 PM	0	10	8	7	8	47	13	0	11	64	67	5	20	59	5
4:30 PM	0	11	9	6	6	53	14	0	10	66	63	6	27	59	4
4:45 PM	0	10	8	8	13	55	17	0	11	72	70	6	35	70	8
5:00 PM	0	8	7	10	18	51	19	0	11	72	71	5	39	75	11
5:15 PM	0	10	5	10	17	64	16	0	9	81	70	5	37	73	12
5:30 PM	0	11	3	9	15	70	12	0	6	82	63	4	31	64	11
5:45 PM	0	12	3	9	16	74	13	0	6	86	66	4	33	67	12

AM PEAK HOUR 8:00 AM to 9:00 AM	West Service Road Northbound				Boston Wharf Road Southbound			Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**89**	**113**	**54**	**37**	**57**	**33**	**0**	**37**	**215**	**149**	**17**	**123**	**496**	**120**
PHF	**0.94**				**0.88**			**0.90**				**0.89**			
HV %	**0.0%**	**0.0%**	**7.1%**	**1.9%**	**10.8%**	**5.3%**	**0.0%**	**0.0%**	**0.0%**	**7.0%**	**0.0%**	**0.0%**	**0.0%**	**5.2%**	**7.5%**

PM PEAK HOUR 5:00 PM to 6:00 PM	West Service Road Northbound				Boston Wharf Road Southbound			Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**41**	**18**	**38**	**66**	**259**	**60**	**0**	**32**	**321**	**270**	**18**	**140**	**279**	**46**
PHF	**0.97**				**0.94**			**0.97**				**0.93**			
HV %	**0.0%**	**2.4%**	**16.7%**	**0.0%**	**0.0%**	**3.1%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 18
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Boston Wharf Rd/Service Rd
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	3	3	0	0	3	0	0	0	3	0	0	0	1	0
7:45 AM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0
8:00 AM	0	0	3	1	0	3	0	0	0	0	0	0	0	0	5	4
8:15 AM	0	0	5	0	0	0	1	0	0	0	8	0	0	0	12	1
8:30 AM	0	0	0	0	0	0	1	0	0	0	3	0	0	0	4	1
8:45 AM	0	0	0	0	0	1	1	0	0	0	4	0	0	0	5	3

	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**8**	**1**	**0**	**4**	**3**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**26**	**9**
PHF	**0.45**				**0.58**				**0.47**				**0.67**			

PM PEAK HOUR 4:45 PM to 5:45 PM	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**4**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**
PHF	**0.42**				**0.67**				**0.25**				**0.25**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 18
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Boston Wharf Rd/Service Rd
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	11	0	0	0	19	0	0	0	3	0	0	0	4
7:15 AM	0	0	1	10	0	0	0	18	2	0	0	8	0	0	0	9
7:30 AM	0	0	0	15	0	0	0	25	0	0	0	10	0	1	0	8
7:45 AM	0	0	0	18	0	0	0	29	0	3	0	11	0	2	0	6
8:00 AM	0	0	0	17	0	0	0	27	1	2	0	14	0	1	0	7
8:15 AM	0	1	0	15	0	0	0	23	1	3	0	15	0	2	0	8
8:30 AM	0	1	1	18	0	0	0	26	2	2	0	17	0	2	1	10
8:45 AM	0	0	0	19	0	0	0	27	0	2	0	18	0	3	1	11

	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	19	0	0	0	17	0	1	0	4	0	0	0	3
4:15 PM	0	0	0	18	0	0	0	16	0	2	0	7	0	0	0	5
4:30 PM	0	0	0	21	0	0	0	19	0	0	0	8	0	0	0	7
4:45 PM	0	0	0	22	0	0	0	21	0	2	0	9	0	1	0	8
5:00 PM	0	0	0	24	0	0	0	33	1	4	0	23	0	2	0	11
5:15 PM	0	0	0	24	0	0	0	42	0	2	0	35	0	2	0	12
5:30 PM	0	0	0	20	0	0	0	30	0	3	0	20	0	3	0	9
5:45 PM	0	0	0	15	0	0	0	16	1	1	0	4	0	1	0	6

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	2	1	69	0	0	0	103	4	9	0	64	0	8	2	36

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	West Service Road Northbound				Boston Wharf Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	83	0	0	0	121	2	10	0	82	0	8	0	38

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 19
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Service Rd/I-93, I-90 Ramps
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	31	58	34	0	0	0	0	0	7	39	0	0	0	68	9
7:15 AM	0	39	64	45	0	0	0	0	0	6	55	0	0	0	82	10
7:30 AM	0	43	63	51	0	0	0	0	0	7	60	0	0	0	89	10
7:45 AM	0	56	81	53	0	0	0	0	0	9	59	0	0	0	92	11
8:00 AM	0	63	91	49	0	0	0	0	0	10	50	0	0	0	87	11
8:15 AM	0	73	118	51	0	0	0	0	0	6	68	0	0	0	109	9
8:30 AM	0	76	134	48	0	0	0	0	0	2	75	0	0	0	122	6
8:45 AM	0	80	111	50	0	0	0	0	0	2	80	0	0	0	129	9

	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	17	40	26	0	0	0	0	0	8	77	0	0	0	54	5
4:15 PM	0	19	44	25	0	0	0	0	0	9	84	0	0	0	65	6
4:30 PM	0	19	43	22	0	0	0	0	0	10	83	0	0	0	71	5
4:45 PM	0	23	48	22	0	0	0	0	0	11	99	0	0	0	90	6
5:00 PM	0	24	48	19	0	0	0	0	0	12	105	0	0	0	101	6
5:15 PM	0	24	47	19	0	0	0	0	0	12	114	0	0	0	98	5
5:30 PM	0	22	43	17	0	0	0	0	0	11	111	0	0	0	84	4
5:45 PM	0	23	45	18	0	0	0	0	0	12	116	0	0	0	89	4

AM PEAK HOUR 8:00 AM to 9:00 AM	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**292**	**454**	**198**	**0**	**0**	**0**	**0**	**0**	**20**	**273**	**0**	**0**	**0**	**447**	**35**
PHF	**0.91**				**0.00**				**0.89**				**0.87**			
HV %	**0.0%**	**0.0%**	**0.7%**	**4.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.1%**	**0.0%**	**0.0%**	**0.0%**	**4.5%**	**2.9%**

PM PEAK HOUR 5:00 PM to 6:00 PM	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**93**	**183**	**73**	**0**	**0**	**0**	**0**	**0**	**47**	**446**	**0**	**0**	**0**	**372**	**19**
PHF	**0.96**				**0.00**				**0.96**				**0.91**			
HV %	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 19
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Service Rd/I-93, I-90 Ramps
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:00 AM	0	0	1	3	0	0	0	0	0	0	4	0	0	0	5	0
8:15 AM	0	0	0	3	0	0	0	0	0	0	3	0	0	0	7	0
8:30 AM	0	0	1	1	0	0	0	0	0	0	3	0	0	0	4	0
8:45 AM	0	0	1	1	0	0	0	0	0	0	4	0	0	0	4	1

	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	1	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
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	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

AM PEAK HOUR 8:00 AM to 9:00 AM	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**3**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**20**	**1**
PHF	**0.69**				**0.00**				**0.88**				**0.75**			

PM PEAK HOUR 4:00 PM to 5:00 PM	I-93 and I-90 Exit Ramps Northbound				East Service Road Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
PHF	**0.75**				**0.00**				**0.00**				**0.25**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 19
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Service Rd/I-93, I-90 Ramps
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	I-93 and I-90 Exit Ramps Northbound					East Service Road Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	1		0	0	0	7		1	1	0	1		0	0	0	2	
7:15 AM	0	0	0	5		0	0	0	6		0	0	0	0		0	0	0	0	
7:30 AM	0	0	0	2		0	0	0	11		0	0	0	2		0	1	0	1	
7:45 AM	0	0	0	5		0	0	0	9		1	2	0	1		0	0	0	0	
8:00 AM	0	0	0	3		0	0	0	17		0	2	0	5		0	0	0	3	
8:15 AM	0	0	0	1		0	0	0	25		0	1	0	19		0	1	0	0	
8:30 AM	0	0	0	6		0	0	0	22		1	3	0	8		0	2	0	7	
8:45 AM	0	0	0	0		0	0	0	18		1	4	0	11		0	1	0	2	

	I-93 and I-90 Exit Ramps Northbound					East Service Road Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	1		0	0	0	15		0	0	0	3		0	0	0	3	
4:15 PM	0	0	0	3		0	0	0	14		0	2	0	1		0	1	1	0	
4:30 PM	0	0	0	3		0	0	0	23		0	0	0	5		0	1	0	2	
4:45 PM	0	0	0	0		0	0	0	28		0	1	0	0		0	0	0	2	
5:00 PM	0	0	0	5		0	0	0	27		0	1	0	8		0	0	1	7	
5:15 PM	0	0	0	4		0	0	0	25		0	0	0	2		0	0	1	3	
5:30 PM	0	0	0	7		0	0	0	26		0	2	0	6		0	2	0	5	
5:45 PM	0	0	0	1		0	0	0	22		0	1	0	4		0	1	0	2	

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	I-93 and I-90 Exit Ramps Northbound					East Service Road Southbound					Congress Street Eastbound					Congress Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	10		0	0	0	82		2	10	0	43		0	4	0	12	

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	I-93 and I-90 Exit Ramps Northbound					East Service Road Southbound					Congress Street Eastbound					Congress Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	17		0	0	0	100		0	4	0	20		0	3	2	17	

[1] Peak hours corresponds to vehicular peak hours.

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 20
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	B St/I-93, I-90 Ramps
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	46	26	43	0	5	18	7	0	39	6	28	0	57	24	9
7:15 AM	0	51	32	53	0	4	18	8	0	45	25	30	1	65	33	10
7:30 AM	0	51	35	58	0	3	17	8	0	46	36	29	2	67	40	10
7:45 AM	0	56	40	68	0	4	17	9	0	58	24	32	1	77	36	12
8:00 AM	0	56	41	72	0	3	15	8	0	65	7	31	0	79	31	12
8:15 AM	0	60	56	71	0	3	12	7	0	76	14	30	1	70	49	14
8:30 AM	0	58	66	63	0	2	8	6	0	79	15	27	0	54	64	26
8:45 AM	0	61	69	66	0	2	8	6	0	83	17	28	0	57	68	27

	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	23	24	72	0	2	16	11	0	12	43	48	0	90	25	13
4:15 PM	0	33	30	74	0	3	28	13	0	18	47	44	0	102	25	15
4:30 PM	0	39	34	68	0	3	37	14	0	23	46	36	0	105	23	16
4:45 PM	0	48	40	69	0	4	41	16	0	27	59	35	0	115	32	19
5:00 PM	0	52	43	63	0	5	41	16	0	29	64	31	0	114	39	20
5:15 PM	0	48	46	69	0	6	42	17	0	32	62	39	0	111	38	28
5:30 PM	0	40	45	68	0	6	39	15	0	31	54	43	0	98	33	33
5:45 PM	0	42	47	71	0	6	41	16	0	33	56	45	0	103	35	35

AM PEAK HOUR 8:00 AM to 9:00 AM	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**235**	**232**	**272**	**0**	**10**	**43**	**27**	**0**	**303**	**53**	**116**	**1**	**260**	**212**	**79**
PHF	**0.94**				**0.77**				**0.92**				**0.91**			
HV %	**0.0%**	**0.0%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**18.6%**	**7.4%**	**0.0%**	**0.3%**	**30.2%**	**4.3%**	**0.0%**	**5.0%**	**7.5%**	**1.3%**

PM PEAK HOUR 5:00 PM to 6:00 PM	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**182**	**181**	**271**	**0**	**23**	**163**	**64**	**0**	**125**	**236**	**158**	**0**	**426**	**145**	**116**
PHF	**0.97**				**0.96**				**0.97**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.8%**	**2.1%**	**0.0%**	**0.0%**	**0.5%**	**6.2%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 20
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: B St/I-93, I-90 Ramps
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	4	0	0	3	0	0	0	3	3	0	3	1	0
7:15 AM	0	0	0	3	0	0	1	0	0	0	4	1	0	1	4	0
7:30 AM	0	0	0	3	0	0	1	1	0	1	4	1	0	1	3	1
7:45 AM	0	0	0	4	0	0	4	0	0	0	3	1	0	3	3	0
8:00 AM	0	0	0	4	0	0	3	1	0	0	5	3	0	4	4	0
8:15 AM	0	0	0	3	0	0	1	1	0	0	4	0	0	1	3	0
8:30 AM	0	0	0	5	0	0	1	0	0	0	3	1	0	3	4	0
8:45 AM	0	0	0	4	0	0	3	0	0	1	4	1	0	5	5	1

	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	4	0	0	1	0	0	0	3	0	0	3	1	0
4:15 PM	0	0	0	3	0	0	1	0	0	0	4	0	0	4	3	0
4:30 PM	0	0	0	4	0	0	0	1	0	1	3	0	0	0	3	0
4:45 PM	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	0
5:00 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	1	4	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0
5:30 PM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0

AM PEAK HOUR 8:00 AM to 9:00 AM	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**16**	**0**	**0**	**8**	**2**	**0**	**1**	**16**	**5**	**0**	**13**	**16**	**1**
PHF	**0.80**				**0.63**				**0.69**				**0.68**			

PM PEAK HOUR 4:00 PM to 5:00 PM	I-93 On Ramps/I-90 Off Ramps Northbound				B Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**12**	**0**	**0**	**3**	**1**	**0**	**1**	**11**	**0**	**0**	**8**	**8**	**0**
PHF	**0.75**				**1.00**				**0.75**				**0.57**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 20
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: B St/I-93, I-90 Ramps
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	I-93 On Ramps/I-90 Off Ramps Northbound					B Street Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	3		0	0	0	11		0	1	0	5		0	2	0	6	
7:15 AM	0	0	0	1		0	0	0	15		0	1	0	2		0	1	0	1	
7:30 AM	0	0	0	5		0	0	0	19		0	0	0	11		0	1	1	11	
7:45 AM	0	0	0	4		0	0	0	12		0	0	0	7		0	1	0	15	
8:00 AM	0	0	0	7		0	0	0	9		0	1	0	15		0	4	0	19	
8:15 AM	0	0	0	8		0	0	0	18		0	2	0	11		0	5	1	21	
8:30 AM	0	0	0	5		0	0	0	23		0	1	0	9		0	3	0	18	
8:45 AM	0	0	0	4		0	0	0	18		0	1	0	6		0	3	0	17	

	I-93 On Ramps/I-90 Off Ramps Northbound					B Street Southbound					Congress Street Eastbound					Congress Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	3		0	0	0	4		0	0	0	2		0	1	0	12	
4:15 PM	0	0	0	6		0	0	0	8		0	0	0	3		0	0	0	9	
4:30 PM	0	0	0	5		0	0	0	16		0	0	0	9		0	1	0	15	
4:45 PM	0	0	0	2		0	0	0	12		0	0	0	6		0	2	1	13	
5:00 PM	0	0	0	7		1	0	0	20		0	1	0	4		0	2	0	19	
5:15 PM	0	0	0	5		1	0	0	16		0	1	0	8		0	1	1	13	
5:30 PM	0	0	0	2		0	0	0	11		0	1	0	3		0	3	0	17	
5:45 PM	0	0	0	7		0	0	0	24		0	2	0	8		0	2	0	21	

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	I-93 On Ramps/I-90 Off Ramps Northbound					B Street Southbound					Congress Street Eastbound					Congress Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	24		0	0	0	68		0	5	0	41		0	15	1	75	

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	I-93 On Ramps/I-90 Off Ramps Northbound					B Street Southbound					Congress Street Eastbound					Congress Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	21		2	0	0	71		0	5	0	23		0	8	1	70	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 21
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: D Street
Count Date: 11/1 & 11/2/2016
Day of Week: Tuesday & Wednesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	1	51	20	5	0	6	35	11	2	21	35	53	0	9	15	4
7:15 AM	0	58	25	6	1	6	35	11	3	20	43	60	0	12	20	5
7:30 AM	1	59	28	6	0	7	31	10	2	18	47	61	0	14	24	5
7:45 AM	0	66	26	5	0	7	31	9	2	18	55	70	0	15	20	4
8:00 AM	1	66	21	6	0	6	28	8	1	16	57	73	0	14	15	5
8:15 AM	1	78	24	6	1	5	33	9	2	18	61	68	0	16	19	4
8:30 AM	0	83	25	5	1	4	34	10	3	19	59	57	0	16	22	5
8:45 AM	0	87	26	5	0	4	36	11	3	20	62	60	0	17	23	5

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	62	22	8	1	3	77	6	2	10	24	43	0	17	25	8
4:15 PM	1	75	24	9	0	5	85	11	3	14	26	49	0	20	27	9
4:30 PM	2	80	24	9	1	6	84	15	4	16	25	51	0	22	26	10
4:45 PM	1	78	27	8	2	6	88	14	5	21	30	50	0	24	32	12
5:00 PM	2	68	27	7	1	5	83	12	6	24	33	45	0	24	35	12
5:15 PM	2	79	30	11	2	6	81	13	6	26	39	48	0	33	43	18
5:30 PM	1	51	30	13	3	7	72	13	5	25	42	47	0	38	46	22
5:45 PM	1	69	32	14	3	7	76	14	5	26	44	49	0	40	48	23

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	2	**314**	**96**	**22**	**2**	**19**	**131**	**38**	**9**	**73**	**239**	**258**	**0**	**63**	**79**	**19**
PHF	**0.92**				**0.93**				**0.97**				**0.89**			
HV %	**0.0%**	**4.5%**	**9.4%**	**9.1%**	**0.0%**	**0.0%**	**10.7%**	**0.0%**	**0.0%**	**0.0%**	**6.3%**	**3.9%**	**0.0%**	**1.6%**	**22.8%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	6	**267**	**119**	**45**	**9**	**25**	**312**	**52**	**22**	**101**	**158**	**189**	**0**	**135**	**172**	**75**
PHF	**0.90**				**0.98**				**0.95**				**0.86**			
HV %	**0.0%**	**1.9%**	**2.5%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**3.8%**	**2.6%**	**0.0%**	**0.0%**	**1.7%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 21
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: D Street
Count Date: 11/1 & 11/2/2016
Day of Week: Tuesday & Wednesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	4	3	0	0	0	3	0	0	0	4	3	0	1	1	0
7:15 AM	0	3	3	1	0	0	4	0	0	0	3	4	0	0	4	0
7:30 AM	0	3	1	0	0	0	3	0	0	0	3	3	0	3	1	0
7:45 AM	0	1	3	1	0	0	4	0	0	0	3	5	0	1	4	0
8:00 AM	0	3	1	1	0	0	5	0	0	0	1	4	0	0	4	0
8:15 AM	0	3	0	0	0	0	3	0	0	0	3	1	0	0	3	0
8:30 AM	0	4	3	1	0	0	3	0	0	0	4	1	0	0	4	0
8:45 AM	0	4	5	0	0	0	3	0	0	0	7	4	0	1	7	0

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	0
4:15 PM	0	3	0	0	0	0	3	0	0	0	3	0	0	0	1	0
4:30 PM	0	1	0	0	0	0	1	0	0	0	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:00 PM	0	3	1	0	0	0	1	0	0	0	3	1	0	0	1	0
5:15 PM	0	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0
5:45 PM	0	0	1	0	0	0	1	0	0	0	1	3	0	0	1	0

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**14**	**9**	**2**	**0**	**0**	**14**	**0**	**0**	**0**	**15**	**10**	**0**	**1**	**18**	**0**
PHF	**0.69**				**0.70**				**0.57**				**0.59**			

PM PEAK HOUR 4:15 PM to 5:15 PM	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**7**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**10**	**1**	**0**	**0**	**6**	**0**
PHF	**0.50**				**0.42**				**0.69**				**0.50**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 21
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: D Street
Count Date: 11/1 & 11/2/2016
Day of Week: Tuesday & Wednesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	1	0	0	5	0	1	0	3	0	1	0	5	0	0	0	6
7:15 AM	0	1	0	3	0	0	0	6	0	0	0	4	0	0	0	2
7:30 AM	2	1	0	9	0	1	0	9	0	2	0	11	0	1	0	6
7:45 AM	1	0	0	14	0	0	0	12	0	1	0	17	0	0	0	10
8:00 AM	1	2	0	18	0	1	0	8	0	1	1	13	0	2	1	13
8:15 AM	0	1	0	21	0	0	0	3	0	2	0	8	0	1	0	14
8:30 AM	1	1	0	25	0	0	0	6	0	2	0	15	0	1	0	15
8:45 AM	2	2	0	26	0	0	0	9	0	3	1	20	0	3	1	15

	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	1	0	16	0	1	0	4	0	2	0	12	0	1	0	3
4:15 PM	0	1	0	15	0	2	0	9	0	3	0	11	0	0	0	7
4:30 PM	0	0	0	20	0	2	0	11	0	1	0	11	0	0	0	15
4:45 PM	0	0	0	24	0	2	0	12	0	2	0	9	0	1	0	21
5:00 PM	0	1	0	20	0	1	0	13	0	2	1	13	0	1	0	20
5:15 PM	0	2	0	15	0	2	0	12	0	2	0	10	0	2	0	17
5:30 PM	0	1	0	13	0	2	0	14	0	1	1	8	0	0	0	13
5:45 PM	0	0	0	9	0	3	0	11	0	2	0	6	0	2	0	7

AM PEAK HOUR[1]	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
8:00 AM to 9:00 AM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	4	6	0	90	0	1	0	26	0	8	2	56	0	7	2	57

PM PEAK HOUR[1]	D Street Northbound				D Street Southbound				Congress Street Eastbound				Congress Street Westbound			
5:00 PM to 6:00 PM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	4	0	57	0	8	0	50	0	7	2	37	0	5	0	57

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 22
Location:	Seaport, Boston, MA
Street 1:	Summer Street
Street 2:	Melcher Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	21	0	5	0	0	0	0	0	0	94	56	0	9	90	0
7:15 AM	0	23	0	6	0	0	0	0	0	0	121	60	0	11	101	0
7:30 AM	0	23	0	5	0	0	0	0	0	0	136	58	0	11	102	0
7:45 AM	0	29	0	8	0	0	0	0	0	0	158	65	0	13	122	0
8:00 AM	0	32	0	10	0	0	0	0	0	0	165	66	0	13	131	0
8:15 AM	0	30	0	13	0	0	0	0	0	0	169	72	0	15	131	0
8:30 AM	0	25	0	15	0	0	0	0	0	0	157	72	0	16	118	0
8:45 AM	0	26	0	16	0	0	0	0	0	0	165	76	0	17	124	0

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	34	0	13	0	0	0	0	0	0	119	31	0	7	67	0
4:15 PM	0	38	0	14	0	0	0	0	0	0	138	37	0	7	91	0
4:30 PM	0	39	0	14	0	0	0	0	0	0	144	39	0	7	106	0
4:45 PM	0	45	0	19	0	0	0	0	0	0	169	36	0	7	96	0
5:00 PM	0	47	0	23	0	0	0	0	0	0	178	30	0	6	77	0
5:15 PM	0	59	0	24	0	0	0	0	0	0	180	27	0	5	96	0
5:30 PM	0	65	0	23	0	0	0	0	0	0	165	21	0	4	105	0
5:45 PM	0	68	0	24	0	0	0	0	0	0	173	22	0	4	110	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**113**	**0**	**54**	**0**	**0**	**0**	**0**	**0**	**0**	**656**	**286**	**0**	**61**	**504**	**0**
PHF	**0.97**				**0.00**				**0.98**				**0.97**			
HV %	**0.0%**	**6.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**0.0%**	**0.0%**	**0.0%**	**4.2%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**239**	**0**	**94**	**0**	**0**	**0**	**0**	**0**	**0**	**696**	**100**	**0**	**19**	**388**	**0**
PHF	**0.90**				**0.00**				**0.96**				**0.89**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.0%**	**0.0%**	**0.0%**	**2.8%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 22
Location: Seaport, Boston, MA
Street 1: Summer Street
Street 2: Melcher Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	4	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	3	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	3	0
7:45 AM	0	3	0	0	0	0	0	0	0	0	3	0	0	0	3	0
8:00 AM	0	3	0	0	0	0	0	0	0	0	4	0	0	0	5	0
8:15 AM	0	3	0	0	0	0	0	0	0	0	5	0	0	0	7	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	5	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**20**	**0**
PHF	**0.83**				**0.00**				**0.80**				**0.71**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**12**	**0**
PHF	**0.25**				**0.00**				**0.88**				**0.75**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 22
Location: Seaport, Boston, MA
Street 1: Summer Street
Street 2: Melcher Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	5	0	1	28	0	0	0	0	0	4	3	26	0	3	0	0
7:15 AM	6	0	0	27	0	0	0	0	0	5	0	25	0	2	0	0
7:30 AM	7	0	0	39	0	0	0	0	0	5	4	40	0	3	0	0
7:45 AM	6	0	0	48	0	0	0	0	0	4	1	52	1	4	0	0
8:00 AM	8	0	1	63	0	0	0	0	0	6	2	70	0	6	0	0
8:15 AM	10	0	0	72	0	0	0	0	0	4	3	81	2	4	0	0
8:30 AM	9	0	0	77	0	0	0	0	0	4	3	96	0	4	0	0
8:45 AM	8	0	1	75	0	0	0	0	0	5	5	101	0	5	0	0

	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	3	0	0	33	0	0	0	0	0	3	2	42	0	2	0	0
4:15 PM	1	0	0	31	0	0	0	0	0	2	1	40	0	2	0	0
4:30 PM	2	0	1	36	0	0	0	0	0	4	2	54	0	4	0	0
4:45 PM	2	0	0	38	0	0	0	0	0	1	0	62	0	1	0	0
5:00 PM	4	0	0	60	0	0	0	0	0	3	3	82	0	5	0	0
5:15 PM	5	0	0	76	0	0	0	0	0	3	3	95	0	7	0	0
5:30 PM	4	0	1	57	0	0	0	0	0	5	1	77	0	6	0	0
5:45 PM	4	0	0	32	0	0	0	0	0	2	2	51	0	5	0	0

AM PEAK HOUR[1]	Melcher Street Northbound				Southbound				Summer Street Eastbound				Summer Street Westbound			
8:00 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	35	0	2	287	0	0	0	0	0	19	13	348	2	19	0	0

PM PEAK HOUR[1]	Melcher Street Northbound				0 Southbound				Summer Street Eastbound				Summer Street Westbound			
5:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	17	0	1	225	0	0	0	0	0	13	9	305	0	23	0	0

[1] Peak hours corresponds to vehicular peak hours.

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 23
Location:	Seaport, Boston, MA
Street 1:	Melcher Street
Street 2:	A Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	12	50	2	0	7	72	21	0	5	0	17	0	0	0	0
7:15 AM	0	16	58	1	0	6	72	21	0	6	0	23	0	0	0	0
7:30 AM	0	19	60	0	0	4	66	19	0	7	0	26	0	0	0	0
7:45 AM	0	22	64	2	0	3	75	23	0	8	0	30	0	0	0	0
8:00 AM	0	23	62	3	0	2	77	25	0	9	0	31	0	0	0	0
8:15 AM	0	24	71	3	0	2	80	28	0	11	0	31	0	0	0	0
8:30 AM	0	22	74	2	0	1	76	29	0	11	0	28	0	0	0	0
8:45 AM	0	23	78	2	0	1	80	30	0	12	0	29	0	0	0	0

	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	13	72	4	0	2	65	11	0	13	0	23	0	0	0	0
4:15 PM	0	17	66	6	0	1	70	13	0	13	0	24	0	0	0	0
4:30 PM	0	19	54	8	0	0	68	14	0	12	0	23	0	0	0	0
4:45 PM	0	20	65	5	0	1	73	15	0	19	0	24	0	0	0	0
5:00 PM	0	20	70	2	0	2	71	14	0	24	0	23	0	0	0	0
5:15 PM	0	22	75	4	0	2	68	18	0	22	0	23	0	0	0	0
5:30 PM	0	21	72	6	0	1	59	21	0	18	0	20	0	0	0	0
5:45 PM	0	22	76	6	0	1	62	22	0	19	0	21	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**92**	**285**	**10**	**0**	**6**	**313**	**112**	**0**	**43**	**0**	**119**	**0**	**0**	**0**	**0**
PHF	**0.94**				**0.97**				**0.96**				**0.00**			
HV %	**0.0%**	**1.1%**	**2.8%**	**0.0%**	**0.0%**	**0.0%**	**2.9%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**85**	**293**	**18**	**0**	**6**	**260**	**75**	**0**	**83**	**0**	**87**	**0**	**0**	**0**	**0**
PHF	**0.95**				**0.97**				**0.90**				**0.00**			
HV %	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 23
Location: Seaport, Boston, MA
Street 1: Melcher Street
Street 2: A Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	3	0	0	0	4	1	0	0	0	0	0	0	0	0
8:30 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**8**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.50**				**0.00**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	A Street Northbound				A Street Southbound				Melcher Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**4**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.42**				**0.00**				**0.00**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 23
Location:	Seaport, Boston, MA
Street 1:	Melcher Street
Street 2:	A Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	A Street				A Street				Melcher Street							
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	2	4	0	4	0	3	0	3	0	0	0	5	0	0	0	0
7:15 AM	3	2	0	6	0	2	0	6	0	0	0	7	0	0	0	0
7:30 AM	2	5	0	11	0	5	1	12	1	0	0	13	0	0	0	0
7:45 AM	5	9	0	14	0	7	0	16	0	0	0	17	0	0	0	0
8:00 AM	4	6	0	17	0	6	0	18	0	0	1	23	0	0	0	0
8:15 AM	5	9	0	19	0	7	1	17	2	0	0	27	0	0	0	0
8:30 AM	3	8	0	18	0	9	1	15	1	0	1	24	0	0	0	0
8:45 AM	5	11	0	16	0	8	0	12	0	0	0	18	0	0	0	0

	A Street				A Street				Melcher Street							
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	2	0	5	0	3	0	4	0	0	1	12	0	0	0	0
4:15 PM	0	1	0	4	0	3	0	6	0	0	0	11	0	0	0	0
4:30 PM	1	4	0	7	0	7	0	8	0	0	1	17	0	0	0	0
4:45 PM	0	3	0	9	0	6	0	7	0	0	2	21	0	0	0	0
5:00 PM	1	5	0	8	0	5	1	10	1	0	1	20	0	0	0	0
5:15 PM	2	5	0	7	0	8	0	12	1	0	2	17	0	0	0	0
5:30 PM	1	7	0	13	0	9	2	12	2	0	3	20	0	0	0	0
5:45 PM	1	6	0	18	0	8	0	11	1	0	2	22	0	0	0	0

AM PEAK HOUR[1]	A Street				A Street				Melcher Street							
8:00 AM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	17	34	0	70	0	30	2	62	3	0	2	92	0	0	0	0

PM PEAK HOUR[1]	A Street				A Street				Melcher Street							
5:00 PM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 PM	5	23	0	46	0	30	3	45	5	0	8	79	0	0	0	0

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 24
Location: Seaport, Boston, MA
Street 1: Summer Street
Street 2: World Trade Center Avenue
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	3	4	4	0	3	0	0	0	2	82	6	0	9	94	2
7:15 AM	0	3	2	6	0	4	0	3	0	4	102	10	0	13	102	3
7:30 AM	0	2	0	7	0	4	0	5	0	5	113	13	0	16	100	4
7:45 AM	0	4	0	8	0	5	0	5	0	4	135	11	0	16	115	7
8:00 AM	0	6	0	8	0	6	0	4	0	2	145	8	0	15	119	9
8:15 AM	0	7	0	13	0	5	0	5	0	3	149	17	0	21	126	7
8:30 AM	0	8	0	16	0	6	0	6	0	2	138	24	0	25	118	4
8:45 AM	0	8	0	17	0	6	0	6	0	2	145	25	0	26	110	4

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	10	1	16	0	5	1	3	1	4	134	13	1	14	69	2
4:15 PM	0	10	1	16	0	7	0	3	2	6	141	12	2	15	76	5
4:30 PM	0	9	0	15	0	8	0	2	2	7	134	10	2	14	75	7
4:45 PM	0	11	0	18	0	13	0	6	1	12	150	15	1	13	67	12
5:00 PM	0	11	0	20	0	16	0	9	2	16	151	19	2	10	53	16
5:15 PM	0	13	0	20	0	18	0	9	3	14	165	29	3	11	77	13
5:30 PM	0	13	0	19	0	18	0	8	3	10	164	37	4	11	94	8
5:45 PM	0	14	0	20	0	19	0	8	2	11	172	39	4	12	99	8

AM PEAK HOUR 8:00 AM to 9:00 AM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**29**	**0**	**54**	**0**	**23**	**0**	**21**	**0**	**9**	**577**	**74**	**0**	**87**	**473**	**24**
PHF	**0.83**				**0.92**				**0.96**				**0.95**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.7%**	**0.0%**	**0.0%**	**0.0%**	**8.2%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**51**	**0**	**79**	**0**	**71**	**0**	**34**	**10**	**51**	**652**	**124**	**13**	**44**	**323**	**45**
PHF	**0.96**				**0.97**				**0.93**				**0.86**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.0%**	**0.0%**	**0.0%**	**0.0%**	**5.9%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 24
Location:	Seaport, Boston, MA
Street 1:	Summer Street
Street 2:	World Trade Center Avenue
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	10	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	8	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	13	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	9	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	10	0

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	8	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	5	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	7	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0

AM PEAK HOUR 8:00 AM to 9:00 AM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**0**	**0**	**39**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.75**			

PM PEAK HOUR 4:00 PM to 5:00 PM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**0**	**0**	**20**	**0**
PHF	**0.00**				**0.00**				**0.56**				**0.63**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 24
Location:	Seaport, Boston, MA
Street 1:	Summer Street
Street 2:	World Trade Center Avenue
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	5	0	0	0	6	0	3	0	7	0	4	0	5
7:15 AM	0	0	0	9	0	0	0	4	0	2	0	12	0	5	0	3
7:30 AM	0	0	0	14	0	0	0	5	1	2	0	7	0	5	0	5
7:45 AM	0	0	0	11	0	0	0	7	2	2	0	9	0	4	1	6
8:00 AM	0	0	0	15	0	0	0	11	1	5	0	13	0	6	1	7
8:15 AM	0	1	0	18	0	0	0	9	0	4	0	10	0	7	0	15
8:30 AM	0	1	0	22	0	0	0	13	0	4	0	16	0	4	1	12
8:45 AM	0	1	0	20	0	0	0	8	1	3	0	15	0	5	0	14

	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	11	0	0	0	11	0	2	0	11	0	1	0	2
4:15 PM	0	0	0	18	1	0	1	9	0	2	0	15	0	0	0	6
4:30 PM	0	0	0	12	1	0	0	5	0	3	0	7	0	0	0	7
4:45 PM	0	0	0	14	0	0	1	6	0	1	0	12	0	1	0	9
5:00 PM	0	0	0	17	1	0	1	14	0	2	0	9	0	3	0	11
5:15 PM	0	0	0	25	1	0	0	12	0	5	0	14	0	2	0	15
5:30 PM	0	0	0	21	0	0	1	17	0	3	0	21	0	2	0	17
5:45 PM	0	0	0	27	1	0	0	18	0	4	0	17	0	3	0	21

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	3	0	75	0	0	0	41	2	16	0	54	0	22	2	48

PM PEAK HOUR[1] 5:00 PM to 6:00 PM	World Trade Center Avenue Northbound				World Trade Center Avenue Southbound				Summer Street Eastbound				Summer Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	90	3	0	2	61	0	14	0	61	0	10	0	64

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 25
Location:	Seaport, Boston, MA
Street 1:	Summer Street
Street 2:	D Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	34	49	3	0	38	13	20	0	9	72	8	0	3	43	56
7:15 AM	0	33	39	4	0	44	18	19	0	12	90	10	0	4	56	77
7:30 AM	0	29	25	3	0	46	22	17	0	14	99	11	0	4	61	91
7:45 AM	0	30	26	4	0	47	20	19	0	19	117	12	0	5	78	97
8:00 AM	0	29	25	5	0	44	17	19	0	22	125	12	0	6	87	94
8:15 AM	0	31	26	6	0	47	15	22	0	30	123	14	0	7	90	103
8:30 AM	0	30	26	7	0	45	11	22	0	35	111	14	0	8	87	102
8:45 AM	0	32	27	7	0	47	13	23	0	37	116	15	0	8	90	107

	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	16	47	9	0	35	20	14	0	61	69	25	0	12	52	61
4:15 PM	0	16	50	8	0	43	19	16	0	61	77	26	0	11	57	74
4:30 PM	0	15	47	7	0	46	18	17	0	56	77	24	0	9	54	79
4:45 PM	0	15	51	7	0	45	20	17	0	55	101	25	0	7	52	71
5:00 PM	0	14	56	6	0	40	23	16	0	48	115	24	0	5	43	96
5:15 PM	0	14	68	6	0	41	22	16	0	49	130	24	0	5	69	90
5:30 PM	0	12	49	5	0	38	23	15	0	46	133	22	0	4	88	98
5:45 PM	0	13	47	5	0	40	36	16	0	48	140	23	0	4	92	94

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**122**	**104**	**25**	**0**	**183**	**56**	**86**	**0**	**124**	**475**	**55**	**0**	**29**	**354**	**406**
PHF	**0.95**				**0.97**				**0.97**				**0.96**			
HV %	**0.0%**	**0.8%**	**26.9%**	**28.0%**	**0.0%**	**4.4%**	**30.4%**	**3.5%**	**0.0%**	**0.8%**	**11.6%**	**9.1%**	**0.0%**	**3.4%**	**16.9%**	**3.7%**

PM PEAK HOUR 5:00 PM to 6:00 PM	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**53**	**220**	**22**	**0**	**159**	**104**	**63**	**0**	**191**	**518**	**93**	**0**	**18**	**292**	**378**
PHF	**0.84**				**0.89**				**0.95**				**0.91**			
HV %	**0.0%**	**1.9%**	**6.8%**	**18.2%**	**0.0%**	**1.9%**	**11.5%**	**0.0%**	**0.0%**	**1.0%**	**6.6%**	**1.1%**	**0.0%**	**11.1%**	**12.0%**	**2.6%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 25
Location: Seaport, Boston, MA
Street 1: Summer Street
Street 2: D Street
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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TRUCKS

	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	5	3	0	0	3	0	0	0	5	1	0	0	8	3
7:15 AM	0	0	8	3	0	3	7	0	0	1	9	3	0	1	13	3
7:30 AM	0	1	8	5	0	1	7	3	0	1	9	3	0	1	9	3
7:45 AM	0	0	7	1	0	0	5	1	0	0	7	0	0	1	8	4
8:00 AM	0	0	4	2	0	1	3	1	0	1	10	1	0	0	10	7
8:15 AM	0	1	5	1	0	0	4	1	0	0	16	1	0	0	17	1
8:30 AM	0	0	9	3	0	3	5	0	0	0	9	0	0	0	12	4
8:45 AM	0	0	10	1	0	4	5	1	0	0	20	3	0	1	21	3

	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	4	0	0	0	3	0	0	0	5	1	0	1	7	1
4:15 PM	0	0	5	0	0	1	4	1	0	0	9	0	0	0	9	3
4:30 PM	0	0	7	1	0	3	5	0	0	1	7	0	0	0	10	4
4:45 PM	0	0	4	1	0	1	4	1	0	1	3	0	0	1	3	1
5:00 PM	0	1	9	0	0	0	5	0	0	0	9	0	0	0	12	5
5:15 PM	0	0	1	1	0	1	3	0	0	0	7	1	0	0	7	1
5:30 PM	0	0	4	3	0	1	3	0	0	1	10	0	0	1	7	4
5:45 PM	0	0	1	0	0	1	1	0	0	1	8	0	0	1	9	0

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**28**	**7**	**0**	**8**	**17**	**3**	**0**	**1**	**55**	**5**	**0**	**1**	**60**	**15**
PHF	**0.75**				**0.70**				**0.66**				**0.76**			

PM PEAK HOUR 4:15 PM to 5:15 PM	D Street Northbound				D Street Southbound				Summer Street Eastbound				Summer Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**25**	**2**	**0**	**5**	**18**	**2**	**0**	**2**	**28**	**0**	**0**	**1**	**34**	**13**
PHF	**0.70**				**0.78**				**0.83**				**0.71**			

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Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 25
Location:	Seaport, Boston, MA
Street 1:	Summer Street
Street 2:	D Street
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

PEDESTRIANS & BICYCLES

	D Street					D Street					Summer Street					Summer Street				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	2	0	4		0	0	0	4		0	0	0	6		0	2	1	5	
7:15 AM	0	3	0	6		0	0	0	7		0	1	0	4		0	2	3	2	
7:30 AM	0	4	1	7		0	0	1	8		0	2	0	6		0	1	5	4	
7:45 AM	1	5	2	7		0	0	0	8		0	0	0	7		0	4	3	5	
8:00 AM	1	8	0	5		0	1	0	9		0	1	1	5		0	3	2	7	
8:15 AM	0	5	0	3		0	0	0	9		0	3	0	2		0	5	2	8	
8:30 AM	1	9	1	9		0	0	0	8		0	2	1	7		0	3	4	10	
8:45 AM	0	10	0	14		0	1	1	7		0	3	2	11		0	4	2	12	

	D Street					D Street					Summer Street					Summer Street				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	6		0	0	0	5		0	1	0	7		0	2	0	6	
4:15 PM	0	0	0	3		0	0	0	9		0	2	0	2		0	3	0	8	
4:30 PM	0	2	0	9		0	1	1	8		0	1	0	7		0	1	0	10	
4:45 PM	0	1	0	14		0	0	0	7		0	3	0	11		0	3	0	12	
5:00 PM	0	0	0	13		0	2	0	9		0	2	0	13		0	4	0	10	
5:15 PM	0	1	0	12		0	4	1	10		0	3	0	15		0	3	0	8	
5:30 PM	0	1	0	14		0	1	0	8		0	3	0	9		0	5	0	10	
5:45 PM	0	0	0	15		0	2	0	10		0	4	0	14		0	4	0	12	

AM PEAK HOUR[1]	D Street					D Street					Summer Street					Summer Street				
8:00 AM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	2	32	1	31		0	2	1	33		0	9	4	25		0	15	10	37	

PM PEAK HOUR[1]	D Street					D Street					Summer Street					Summer Street				
5:00 PM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	2	0	54		0	9	1	37		0	12	0	51		0	16	0	40	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 26
Location: Seaport, Boston, MA
Street 1: D Street
Street 2: I-90 On-ramps
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	38	76	0	0	0	71	27	0	0	0	0	0	0	0	0
7:15 AM	0	39	89	0	0	0	81	26	0	0	0	0	0	0	0	0
7:30 AM	0	37	93	0	0	0	85	22	0	0	0	0	0	0	0	0
7:45 AM	0	45	97	0	0	0	86	30	0	0	0	0	0	0	0	0
8:00 AM	0	48	93	0	0	0	80	36	0	0	0	0	0	0	0	0
8:15 AM	0	51	108	0	0	0	84	34	0	0	0	0	0	0	0	0
8:30 AM	0	50	113	0	0	0	78	29	0	0	0	0	0	0	0	0
8:45 AM	0	53	118	0	0	0	83	30	0	0	0	0	0	0	0	0

	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	77	92	0	0	0	69	68	0	0	0	0	0	0	0	0
4:15 PM	0	77	108	0	0	0	78	77	0	0	0	0	0	0	0	0
4:30 PM	0	69	94	0	0	0	81	78	0	0	0	0	0	0	0	0
4:45 PM	0	85	101	0	0	0	82	81	0	0	0	0	0	0	0	0
5:00 PM	0	93	113	0	0	0	79	77	0	0	0	0	0	0	0	0
5:15 PM	0	93	103	0	0	0	79	85	0	0	0	0	0	0	0	0
5:30 PM	0	85	113	0	0	0	76	84	0	0	0	0	0	0	0	0
5:45 PM	0	89	100	0	0	0	92	74	0	0	0	0	0	0	0	0

AM PEAK HOUR	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
8:00 AM to 9:00 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**202**	**432**	**0**	**0**	**0**	**325**	**129**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.93**				**0.96**				**0.00**				**0.00**			
HV %	**0.0%**	**6.4%**	**7.2%**	**0.0%**	**0.0%**	**0.0%**	**8.6%**	**7.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
5:00 PM to 6:00 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**360**	**429**	**0**	**0**	**0**	**326**	**320**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.96**				**0.97**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**3.4%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 26
Location:	Seaport, Boston, MA
Street 1:	D Street
Street 2:	I-90 On-ramps
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	3	7	0	0	0	4	3	0	0	0	0	0	0	0	0
7:15 AM	0	1	9	0	0	0	9	4	0	0	0	0	0	0	0	0
7:30 AM	0	4	5	0	0	0	7	1	0	0	0	0	0	0	0	0
7:45 AM	0	3	8	0	0	0	7	3	0	0	0	0	0	0	0	0
8:00 AM	0	3	9	0	0	0	9	1	0	0	0	0	0	0	0	0
8:15 AM	0	3	4	0	0	0	5	3	0	0	0	0	0	0	0	0
8:30 AM	0	4	8	0	0	0	4	3	0	0	0	0	0	0	0	0
8:45 AM	0	3	10	0	0	0	10	3	0	0	0	0	0	0	0	0

	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	4	0	0	0	5	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	4	0	0	0	5	1	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	3	0	0	0	4	1	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**11**	**31**	**0**	**0**	**0**	**32**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.88**				**0.79**				**0.00**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	D Street Northbound				D Street Southbound				I-90 On-ramps Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**14**	**0**	**0**	**0**	**21**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.80**				**0.69**				**0.00**				**0.00**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 26
Location:	Seaport, Boston, MA
Street 1:	D Street
Street 2:	I-90 On-ramps
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	D Street Northbound					D Street Southbound					I-90 On-ramps Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	4	0	0		0	0	0	0		0	0	0	9		0	0	0	0	
7:15 AM	0	6	0	0		0	0	0	0		0	0	0	7		0	0	0	0	
7:30 AM	0	7	0	0		0	0	0	0		0	0	0	14		0	0	0	0	
7:45 AM	0	8	0	0		0	0	0	0		0	0	0	8		0	0	0	0	
8:00 AM	0	9	0	0		0	1	0	0		0	0	0	11		0	0	0	0	
8:15 AM	0	7	0	0		0	0	0	0		0	0	0	13		0	0	0	0	
8:30 AM	0	11	0	0		0	1	0	0		0	0	0	15		0	0	0	0	
8:45 AM	0	12	0	0		0	2	0	0		0	0	0	23		0	0	0	0	

	D Street Northbound					D Street Southbound					I-90 On-ramps Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	0		0	0	0	4		0	0	0	0	
4:15 PM	0	0	0	0		0	0	0	0		0	0	0	7		0	0	0	0	
4:30 PM	0	1	0	0		0	0	0	0		0	0	0	14		0	0	0	0	
4:45 PM	0	1	0	0		0	0	0	0		0	0	0	11		0	0	0	0	
5:00 PM	0	0	0	0		0	3	0	0		0	0	0	15		0	0	0	0	
5:15 PM	0	1	0	0		0	5	0	0		0	0	0	18		0	0	0	0	
5:30 PM	0	2	0	0		0	5	0	0		0	0	0	12		0	0	0	0	
5:45 PM	0	0	0	0		0	2	0	0		0	0	0	4		0	0	0	0	

AM PEAK HOUR[1]	D Street Northbound					D Street Southbound					I-90 On-ramps Eastbound					Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	39	0	0		0	4	0	0		0	0	0	62		0	0	0	0	

PM PEAK HOUR[1]	D Street Northbound					D Street Southbound					I-90 On-ramps Eastbound					Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	3	0	0		0	15	0	0		0	0	0	49		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 27
Location:	Seaport, Boston, MA
Street 1:	D Street
Street 2:	Silver Line Way
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	76	0	0	0	98	0	0	0	7	0	0	0	9	0
7:15 AM	0	0	89	0	0	0	107	0	0	0	8	0	0	0	9	0
7:30 AM	0	0	93	0	0	0	107	0	0	0	8	0	0	0	8	0
7:45 AM	0	0	97	0	0	0	116	0	0	0	9	0	0	0	9	0
8:00 AM	0	0	93	0	0	0	116	0	0	0	10	0	0	0	9	0
8:15 AM	0	0	108	0	0	0	118	0	0	0	11	0	0	0	8	0
8:30 AM	0	0	113	0	0	0	107	0	0	0	10	0	0	0	8	0
8:45 AM	0	0	118	0	0	0	113	0	0	0	11	0	0	0	7	0

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	92	0	0	0	137	0	0	0	5	0	0	0	4	0
4:15 PM	0	0	108	0	0	0	145	0	0	0	6	0	0	0	6	0
4:30 PM	0	0	113	0	0	0	151	0	0	0	7	0	0	0	8	0
4:45 PM	0	0	101	0	0	0	149	0	0	0	8	0	0	0	8	0
5:00 PM	0	0	113	0	0	0	158	0	0	0	7	0	0	2	7	1
5:15 PM	0	0	103	0	0	0	164	0	0	0	8	0	0	0	7	0
5:30 PM	0	0	113	0	0	0	163	0	0	0	7	0	0	2	6	0
5:45 PM	0	0	100	0	0	0	157	0	0	0	7	0	0	0	6	0

AM PEAK HOUR 8:00 AM to 9:00 AM	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**432**	**0**	**0**	**0**	**454**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**32**	**0**
PHF	**0.92**				**0.96**				**0.95**				**0.89**			
HV %	**0.0%**	**0.0%**	**7.2%**	**0.0%**	**0.0%**	**0.0%**	**8.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**429**	**0**	**0**	**0**	**642**	**0**	**0**	**0**	**29**	**0**	**0**	**4**	**26**	**1**
PHF	**0.95**				**0.98**				**0.91**				**0.78**			
HV %	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location 27
Location:	Seaport, Boston, MA
Street 1:	D Street
Street 2:	Silver Line Way
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	9	0	0	0	13	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	9	0	0	0	10	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	10	0	0	0	13	0	0	0	0	0	0	0	0	0

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**31**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.86**				**0.77**				**0.00**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**14**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.70**				**0.72**				**0.00**				**0.00**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location 27
Location: Seaport, Boston, MA
Street 1: D Street
Street 2: Silver Line Way
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	5	0	0	0	1	0	0	0	0	0	6	0	0	0	9
7:15 AM	0	6	0	0	0	0	0	0	0	0	0	8	0	0	0	12
7:30 AM	0	7	0	0	0	0	0	0	0	0	0	14	0	0	0	16
7:45 AM	0	8	0	0	0	0	0	0	0	0	0	10	0	0	0	14
8:00 AM	0	10	0	0	0	2	0	0	0	0	0	17	0	0	0	18
8:15 AM	0	7	0	0	0	0	0	0	0	0	0	14	0	0	0	22
8:30 AM	0	10	0	0	0	1	0	0	0	0	0	22	0	0	0	25
8:45 AM	0	12	0	0	0	2	0	0	0	0	0	25	0	0	0	20

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	6	0	0	0	7
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	8
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	10	0	0	0	14
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	12	0	0	0	11
5:00 PM	0	1	0	0	0	3	0	0	0	0	0	16	0	0	0	17
5:15 PM	0	1	0	0	0	4	0	0	0	0	0	21	0	0	0	19
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	24	0	0	0	22
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	6	0	0	0	9

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	39	0	0	0	5	0	0	0	0	0	78	0	0	0	85

	D Street Northbound				D Street Southbound				Silver Line Way Eastbound				Silver Line Way Westbound			
PM PEAK HOUR[1] 5:00 PM to 6:00 PM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	4	0	0	0	14	0	0	0	0	0	67	0	0	0	67

[1] Peak hours corresponds to vehicular peak hours.

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location A
Location: Seaport, Boston, MA
Street 1: Boston Wharf Road
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	31	4	0	7	25	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	34	10	0	8	28	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	33	15	0	7	28	0	0	0	0	0	0	2	0	0
7:45 AM	0	0	47	13	0	8	27	0	0	0	0	0	0	2	0	0
8:00 AM	0	0	56	10	0	8	25	0	0	0	0	0	0	1	0	0
8:15 AM	0	0	57	12	0	7	28	0	0	0	0	0	0	3	0	1
8:30 AM	0	0	54	12	0	5	32	0	0	0	0	0	0	2	0	1
8:45 AM	0	0	56	13	0	5	34	0	0	0	0	0	0	2	0	0

	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	23	1	0	1	46	0	0	0	0	0	0	12	0	10
4:15 PM	0	0	23	1	0	0	55	0	0	0	0	0	0	13	0	10
4:30 PM	0	0	25	0	0	1	60	0	0	0	0	0	0	13	0	9
4:45 PM	0	0	27	0	0	0	68	0	0	0	0	0	0	17	0	12
5:00 PM	0	0	29	0	0	1	69	0	0	0	0	0	0	19	0	14
5:15 PM	0	0	25	1	0	2	74	0	0	0	0	0	0	23	0	12
5:30 PM	0	0	20	0	0	1	73	0	0	0	0	0	0	24	0	8
5:45 PM	0	0	21	0	0	1	78	0	0	0	0	0	0	25	0	8

AM PEAK HOUR 8:00 AM to 9:00 AM	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**223**	**47**	**0**	**25**	**119**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**2**
PHF	**0.98**				**0.92**				**0.00**				**0.63**			
HV %	**0.0%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**10.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**95**	**1**	**0**	**5**	**294**	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**0**	**42**
PHF	**0.83**				**0.95**				**0.00**				**0.95**			
HV %	**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%**	**0.0%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location A
Location:	Seaport, Boston, MA
Street 1:	Boston Wharf Road
Street 2:	Driveway (for Parking Lot)
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	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
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0

	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	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
5:15 PM	0	0	1	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
8:00 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
9:00 AM	**0**	**0**	**13**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.65**				**0.60**				**0.00**				**0.00**			

PM PEAK HOUR	Boston Wharf Road Northbound				Boston Wharf Road Southbound				Eastbound				Driveway (for Parking Lot) Westbound			
4:00 PM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.50**				**0.00**				**0.00**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location A
Location: Seaport, Boston, MA
Street 1: Boston Wharf Road
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Boston Wharf Road Northbound					Boston Wharf Road Southbound					Eastbound					Driveway (for Parking Lot) Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	1	0	0		0	0	0	0		0	0	0	0		0	0	0	7	
7:15 AM	0	2	0	0		0	0	0	0		0	0	0	0		0	0	0	10	
7:30 AM	0	3	0	0		0	0	0	0		0	0	0	0		0	0	0	5	
7:45 AM	0	2	0	0		0	0	0	0		0	0	0	0		0	0	0	11	
8:00 AM	0	1	0	0		0	0	0	0		0	0	0	0		0	0	0	9	
8:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	10	
8:30 AM	0	2	0	0		0	1	0	0		0	0	0	0		0	0	0	6	
8:45 AM	0	1	0	0		0	1	0	0		0	0	0	0		0	0	0	12	

	Boston Wharf Road Northbound					Boston Wharf Road Southbound					Eastbound					Driveway (for Parking Lot) Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	6	
4:15 PM	0	1	0	0		0	1	0	0		0	0	0	0		0	0	0	9	
4:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	4	
4:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	9	
5:00 PM	0	1	0	0		0	1	0	0		0	0	0	0		0	0	0	7	
5:15 PM	0	2	0	0		0	0	0	0		0	0	0	0		0	0	0	13	
5:30 PM	0	2	0	0		0	1	0	0		0	0	0	0		0	0	0	11	
5:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	13	

AM PEAK HOUR[1]	Boston Wharf Road Northbound					Boston Wharf Road Southbound					Eastbound					Driveway (for Parking Lot) Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	4	0	0		0	2	0	0		0	0	0	0		0	0	0	37	

PM PEAK HOUR[1]	Boston Wharf Road Northbound					Boston Wharf Road Southbound					Eastbound					Driveway (for Parking Lot) Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	5	0	0		0	2	0	0		0	0	0	0		0	0	0	44	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location B
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON
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TOTAL (CARS & TRUCKS)

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	46	8	0	0	99	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	61	7	0	0	121	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	67	8	0	0	132	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	67	9	0	0	148	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	60	9	0	0	150	0
8:15 AM	0	0	0	1	0	0	0	0	0	0	73	8	0	0	182	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	77	7	0	0	198	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	82	7	0	0	209	0

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	9	0	0	0	0	0	0	76	0	0	0	71	0
4:15 PM	0	0	0	9	0	0	0	0	0	0	84	0	0	0	84	0
4:30 PM	0	0	0	9	0	0	0	0	0	0	84	0	0	0	90	0
4:45 PM	0	0	0	12	0	0	0	0	0	0	98	1	0	0	113	0
5:00 PM	0	0	0	14	0	0	0	0	0	0	103	2	0	0	125	0
5:15 PM	0	0	0	14	0	0	0	0	0	0	112	1	0	0	122	0
5:30 PM	0	0	0	12	0	0	0	0	0	0	110	0	0	0	106	0
5:45 PM	0	0	0	13	0	0	0	0	0	0	115	0	0	0	112	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**292**	**31**	**0**	**0**	**739**	**0**
PHF	**0.25**				**0.00**				**0.91**				**0.88**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**440**	**3**	**0**	**0**	**465**	**0**
PHF	**0.95**				**0.00**				**0.96**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location B
Location:	Seaport, Boston, MA
Street 1:	Congress Street
Street 2:	Driveway (for Parking Lot)
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TRUCKS

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
4:45 PM	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
5:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.50**				**0.00**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location B
Location: Seaport, Boston, MA
Street 1: Congress Street
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	11	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM	0	0	0	9	0	0	0	0	0	1	0	0	0	0	0	0
8:00 AM	0	0	0	14	0	0	0	0	0	2	0	0	0	0	0	0
8:15 AM	0	0	0	12	0	0	0	0	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	15	0	0	0	0	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	5	0	0	0	0	0	2	0	0	0	0	0	0

	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM	0	0	0	5	0	0	0	0	0	3	0	0	0	0	0	0
4:30 PM	0	0	0	9	0	0	0	0	0	2	0	0	0	0	0	0
4:45 PM	0	0	0	7	0	0	0	0	0	2	0	0	0	0	0	0
5:00 PM	0	0	0	19	0	0	0	0	0	4	0	0	0	0	0	0
5:15 PM	0	0	0	21	0	0	0	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	0	16	0	0	0	0	0	3	0	0	0	0	0	0
5:45 PM	0	0	0	11	0	0	0	0	0	2	0	0	0	0	0	0

AM PEAK HOUR[1]	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
8:00 AM to 9:00 AM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	46	0	0	0	0	0	6	0	0	0	0	0	0

PM PEAK HOUR[1]	Parking Lot Northbound				Southbound				Northern Avenue Eastbound				Northern Avenue Westbound			
5:00 PM to 6:00 PM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	67	0	0	0	0	0	10	0	0	0	0	0	0

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location C
Location:	Seaport, Boston, MA
Street 1:	East Service Rd
Street 2:	Driveway (for Parking Lot)
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

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TOTAL (CARS & TRUCKS)

	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	11	58	5	0	0	0	0	0	0	1	0	0	0	0	0
7:15 AM	0	12	60	8	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	12	58	10	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	15	70	11	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	17	94	11	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	19	92	12	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	19	107	11	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	20	95	12	0	0	0	0	0	0	0	0	0	0	0	0

	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	50	3	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	54	4	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	53	4	0	0	0	0	0	1	0	0	0	0	0	3
4:45 PM	0	1	49	6	0	0	0	0	0	1	0	0	0	0	0	5
5:00 PM	0	1	55	7	0	0	0	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	54	8	0	0	0	0	0	1	0	0	0	0	0	6
5:30 PM	0	1	55	8	0	0	0	0	0	1	0	0	0	0	0	5
5:45 PM	0	1	52	7	0	0	0	0	0	0	0	0	0	0	0	5

AM PEAK HOUR	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
8:00 AM to 9:00 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**75**	**388**	**46**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.93**				**0.00**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**3.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
5:00 PM to 6:00 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**216**	**30**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**22**
PHF	**0.97**				**0.00**				**0.50**				**0.92**			
HV %	**0.0%**	**0.0%**	**1.9%**	**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%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location C
Location: Seaport, Boston, MA
Street 1: East Service Rd
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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TRUCKS

	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	3	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	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0

	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	1	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
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.43**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:30 PM to 5:30 PM	East Service Road Northbound				Southbound				Driveway (for Parking Lot) Eastbound				Driveway (for Parking Lot) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.42**				**0.00**				**0.00**				**0.00**			

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location C
Location: Seaport, Boston, MA
Street 1: East Service Rd
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

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PEDESTRIANS & BICYCLES

	East Service Road Northbound					Southbound					Driveway (for Parking Lot) Eastbound					Driveway (for Parking Lot) Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	3		0	0	0	0		0	0	0	2	
7:15 AM	0	0	0	0		0	0	0	2		0	0	0	0		0	0	0	1	
7:30 AM	0	0	0	0		0	0	0	4		0	0	0	0		0	0	0	4	
7:45 AM	0	0	0	0		0	0	0	7		0	0	0	0		0	0	0	1	
8:00 AM	0	0	0	0		0	0	0	8		0	0	0	0		0	0	0	2	
8:15 AM	0	0	0	0		0	0	0	6		0	0	0	0		0	0	0	2	
8:30 AM	0	0	0	0		0	0	0	5		0	0	0	0		0	0	0	1	
8:45 AM	0	0	0	0		0	0	0	6		0	0	0	0		0	0	0	0	

	East Service Road Northbound					Southbound					Driveway (for Parking Lot) Eastbound					Driveway (for Parking Lot) Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	9		0	0	0	1		0	0	0	2	
4:15 PM	0	0	0	0		0	0	0	10		0	0	0	0		0	0	0	3	
4:30 PM	0	0	0	0		0	0	0	15		0	0	0	1		0	0	0	1	
4:45 PM	0	0	0	0		0	0	0	19		0	0	0	0		0	0	0	2	
5:00 PM	0	0	0	0		0	0	0	17		0	0	0	0		0	0	0	3	
5:15 PM	0	0	0	0		0	0	0	14		0	0	0	1		0	0	0	1	
5:30 PM	0	0	0	0		0	0	0	12		0	0	0	0		0	0	0	5	
5:45 PM	0	0	0	0		0	0	0	9		0	0	0	0		0	0	0	6	

AM PEAK HOUR[1]	East Service Road Northbound					Southbound					Driveway (for Parking Lot) Eastbound					Driveway (for Parking Lot) Westbound				
8:00 AM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	0		0	0	0	25		0	0	0	0		0	0	0	5	

PM PEAK HOUR[1]	East Service Road Northbound					0 Southbound					Driveway (for Parking Lot) Eastbound					Driveway (for Parking Lot) Westbound				
5:00 PM to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	0		0	0	0	52		0	0	0	1		0	0	0	15	

[1] *Peak hours corresponds to vehicular peak hours.*

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location D
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	114	5	0	0	55	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	119	5	0	0	79	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	118	4	0	0	95	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	120	6	0	0	91	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	115	8	0	0	110	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	138	6	0	0	104	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	148	5	0	0	103	0
8:45 AM	0	0	0	1	0	0	0	0	0	0	145	5	0	0	122	0

	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	7	0	0	0	0	0	0	155	7	0	0	80	0
4:15 PM	0	0	0	5	0	0	0	0	0	0	171	6	0	0	103	0
4:30 PM	0	0	0	3	0	0	0	0	0	0	172	5	0	0	115	0
4:45 PM	0	0	0	7	0	0	0	0	0	0	194	9	0	0	144	0
5:00 PM	0	0	0	10	0	0	0	0	0	0	197	12	0	0	161	0
5:15 PM	0	0	0	12	0	0	0	0	0	0	194	15	0	0	166	0
5:30 PM	0	0	0	12	0	0	0	0	0	0	173	16	0	0	155	0
5:45 PM	0	0	0	13	0	0	0	0	0	0	185	14	0	0	163	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**546**	**24**	**0**	**0**	**439**	**0**
PHF	**0.25**				**0.00**				**0.93**				**0.90**			
HV %	**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%**	**0.0%**	**8.9%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**0**	**749**	**57**	**0**	**0**	**645**	**0**
PHF	**0.90**				**0.00**				**0.96**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**0.0%**

Client: Mr. Andrew Fabiszewski
Project #: 0010_HSH_Seaport_Boston
BTD #: Location D
Location: Seaport, Boston, MA
Street 1: Seaport Boulevard
Street 2: Driveway (for Parking Lot)
Count Date: 11/1/2016
Day of Week: Tuesday
Weather: Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

TRUCKS

	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	10	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	14	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	21	0	0	0	14	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	14	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	9	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	10	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	12	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	8	0

	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**75**	**0**	**0**	**0**	**52**	**0**
PHF	**0.00**				**0.00**				**0.89**				**0.93**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Driveway (for Parking Lot) Northbound				Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**12**	**0**
PHF	**0.00**				**0.00**				**0.94**				**0.75**			

Client:	Mr. Andrew Fabiszewski
Project #:	0010_HSH_Seaport_Boston
BTD #:	Location D
Location:	Seaport, Boston, MA
Street 1:	Seaport Boulevard
Street 2:	Driveway (for Parking Lot)
Count Date:	11/1/2016
Day of Week:	Tuesday
Weather:	Partly Cloudy, 55° F

BOSTON TRAFFIC DATA
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PEDESTRIANS & BICYCLES

	Driveway (for Parking Lot)										Seaport Boulevard					Seaport Boulevard				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	9		0	0	0	0		0	0	0	0		0	1	0	0	
7:15 AM	0	0	0	6		0	0	0	0		0	1	0	0		0	1	0	0	
7:30 AM	0	0	0	17		0	0	0	0		0	3	0	0		0	3	0	0	
7:45 AM	0	0	0	26		0	0	0	0		0	4	0	0		0	2	0	0	
8:00 AM	0	0	0	33		0	0	0	0		0	9	0	0		0	8	0	0	
8:15 AM	0	0	0	37		0	0	0	0		0	9	0	0		0	8	0	0	
8:30 AM	0	0	0	45		0	0	0	0		0	12	0	0		0	6	0	0	
8:45 AM	0	0	0	49		0	0	0	0		0	12	0	0		0	9	0	0	

	Driveway (for Parking Lot)										Seaport Boulevard					Seaport Boulevard				
	Northbound					Southbound					Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	28		0	0	0	0		0	2	0	0		0	2	0	0	
4:15 PM	0	0	0	27		0	0	0	0		0	4	0	0		0	2	0	0	
4:30 PM	0	0	0	30		0	0	0	0		0	4	0	0		0	4	0	0	
4:45 PM	0	0	0	29		0	0	0	0		0	2	0	0		0	5	0	0	
5:00 PM	0	0	0	41		0	0	0	0		0	9	0	0		0	6	0	0	
5:15 PM	0	0	0	49		0	0	0	0		0	11	0	0		0	13	0	0	
5:30 PM	0	0	0	45		0	0	0	0		0	9	0	0		0	11	0	0	
5:45 PM	0	0	0	37		0	0	0	0		0	4	0	0		0	5	0	0	

AM PEAK HOUR[1]	Driveway (for Parking Lot)										Seaport Boulevard					Seaport Boulevard				
8:00 AM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	0	0	164		0	0	0	0		0	42	0	0		0	31	0	0	

PM PEAK HOUR[1]	Driveway (for Parking Lot)										Seaport Boulevard					Seaport Boulevard				
5:00 PM	Northbound					Southbound					Eastbound					Westbound				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	0	0	172		0	0	0	0		0	33	0	0		0	35	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Crash Rate Table - Seaport Square 2012-2014

Scenario	Congress Street / B Street	Congress Street / Boston Wharf Road	Congress Street / D Street	Northern Avenue / D Street	Seaport Boulevard / B Street
Year					
2012	0	0	0	1	0
2013	0	1	1	0	0
2014	1	0	2	2	1
Total	1	1	3	3	1
Type					
Single Vehicle	0	0	0	0	0
Rear-end	0	0	1	1	1
Angle	0	0	1	1	0
Sideswipe	1	0	0	1	0
Head-on	0	1	0	0	0
Pedestrian Involved	0	0	1	0	0
Cyclist Involved	0	0	0	0	0
Unknown/ Other	0	0	0	0	0
Total	1	1	3	3	1
Severity					
Property Damage Only	1	0	1	1	0
Personal injury	0	1	2	0	1
Fatality	0	0	0	0	0
Hit and run	0	0	0	0	0
Unknown	0	0	0	2	0
Total	1	1	3	3	1
Hour of Day					
6-10 a.m.	0	0	0	1	0
10-2 p.m.	0	0	2	0	0
2-6 p.m.	0	1	1	1	1
6-10 p.m.	1	0	0	0	0
10-2 a.m.	0	0	0	0	0
2-6 a.m.	0	0	0	1	0
Total	1	1	3	3	1
Day of Week					
Monday	0	0	0	1	0
Tuesday	0	1	1	0	0
Wednesday	0	0	1	0	1
Thursday	0	0	0	0	0
Friday	1	0	0	0	0
Saturday	0	0	0	0	0
Sunday	0	0	1	2	0
Total	1	1	3	3	1
Weather					
Clear	0	0	3	1	0
Cloudy	1	1	0	1	1
Rain	0	0	0	1	0
Snow	0	0	0	0	0
Sleet, Hail, Freezing Rain	0	0	0	0	0
Fog, Smog, Smoke	0	0	0	0	0
Severe Crosswinds	0	0	0	0	0
Blowing sand, snow	0	0	0	0	0
Other	0	0	0	0	0
Unknown	0	0	0	0	0
Total	1	1	3	3	1

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston

COUNT DATE : Nov-16

DISTRICT : 4

UNSIGNALIZED :

SIGNALIZED : x

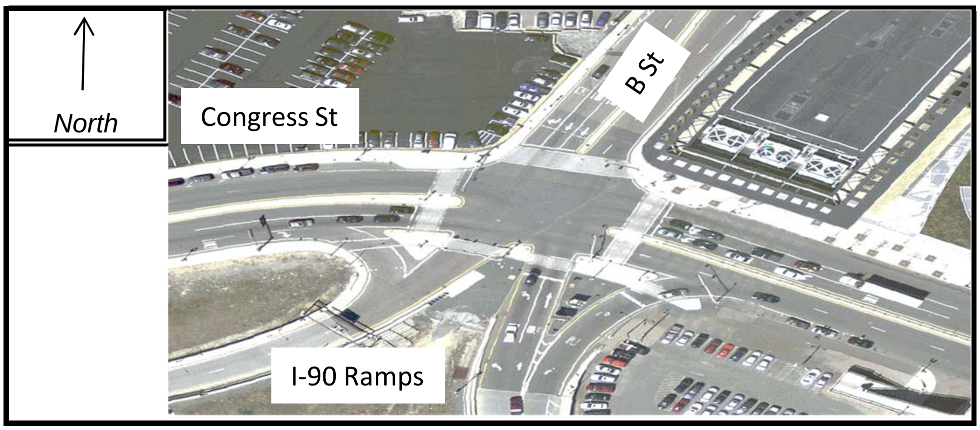
~ INTERSECTION DATA ~

MAJOR STREET : Congress Street

MINOR STREET(S) : B Street

I-90 Ramps

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	519	687	634	250		2,090

" K " FACTOR : 0.090

APPROACH ADT : 23,222

ADT = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES (**A**) : 0.33

CRASH RATE CALCULATION : 0.04

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date:

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston COUNT DATE : Nov-16

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Congress Street

MINOR STREET(S) : Boston Wharf Road/West Service Road

INTERSECTION DIAGRAM
(Label Approaches)

North

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	623	483	97	385		1,588

" K " FACTOR : **0.090** APPROACH ADT : **17,644** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 1 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **0.33**

CRASH RATE CALCULATION : **0.05** RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments :

Project Title & Date:

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston　　　　COUNT DATE : Nov-16

DISTRICT : 4　　　UNSIGNALIZED : 　　　SIGNALIZED : x

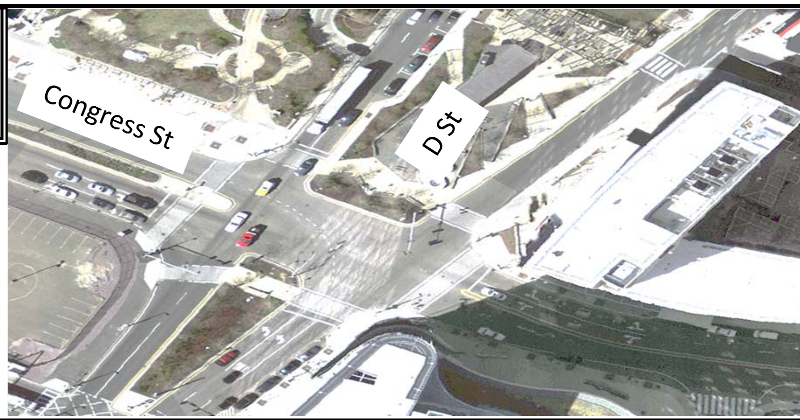
~ INTERSECTION DATA ~

MAJOR STREET : Congress Street

MINOR STREET(S) : D Street

INTERSECTION DIAGRAM
(Label Approaches)

North



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	470	382	437	398		1,687

" K " FACTOR : 0.090　　APPROACH ADT : 18,744　　**ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 3　　# OF YEARS : 3　　AVERAGE # OF CRASHES (**A**) : 1.00

CRASH RATE CALCULATION : 0.15　　RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments :

Project Title & Date:

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston

COUNT DATE : Nov-16

DISTRICT : 4

UNSIGNALIZED :

SIGNALIZED : x

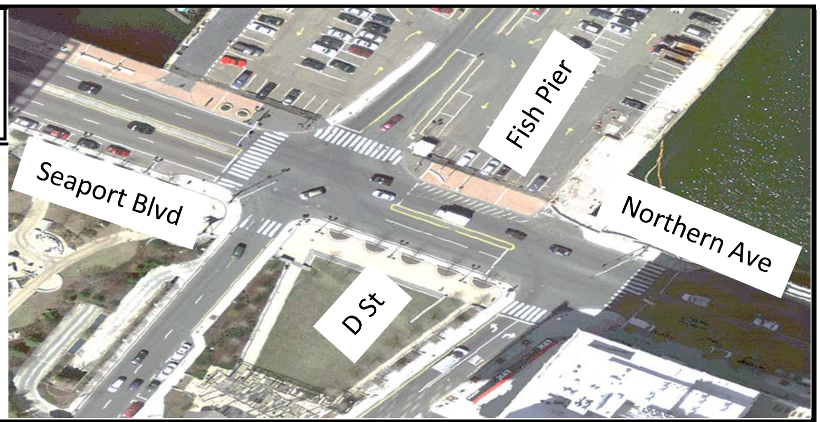
~ INTERSECTION DATA ~

MAJOR STREET : Seaport Boulevard/Northern Avenue

MINOR STREET(S) : D Street/Fish Pier

INTERSECTION DIAGRAM
(Label Approaches)

North



Peak Hour Volumes

APPROACH :	**1**	**2**	**3**	**4**	**5**	**Total Entering Vehicles**
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	711	439	85	79		**1,314**

" K " FACTOR : **0.090**

APPROACH ADT : **14,600**

ADT = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES (**A**) : **1.00**

CRASH RATE CALCULATION : **0.19**

RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date:

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston

COUNT DATE : Nov-16

DISTRICT : 4

UNSIGNALIZED :

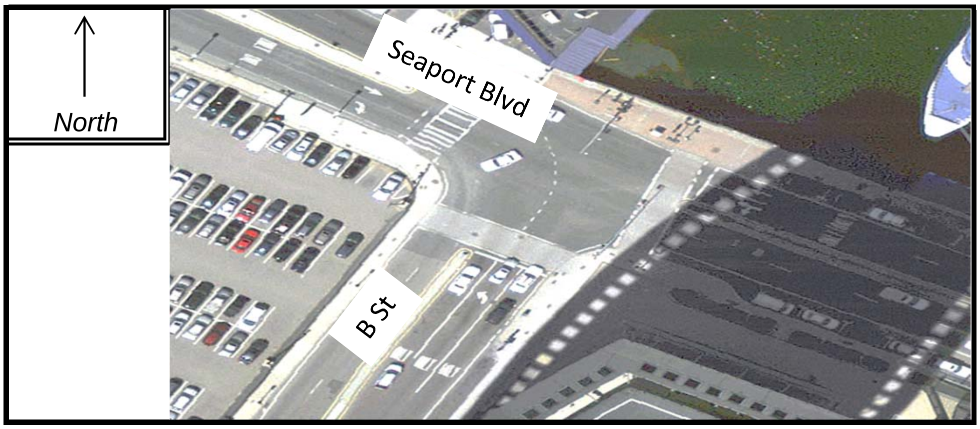
SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Seaport Boulevard

MINOR STREET(S) : B Street

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	796	505	335			1,636

" K " FACTOR : 0.090

APPROACH ADT : 18,178

ADT = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES (**A**) : 0.33

CRASH RATE CALCULATION : 0.05

$$\text{RATE} = \frac{(A * 1,000,000)}{(ADT * 365)}$$

Comments :

Project Title & Date:

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston

COUNT DATE : Nov-16

DISTRICT : 4

UNSIGNALIZED : x

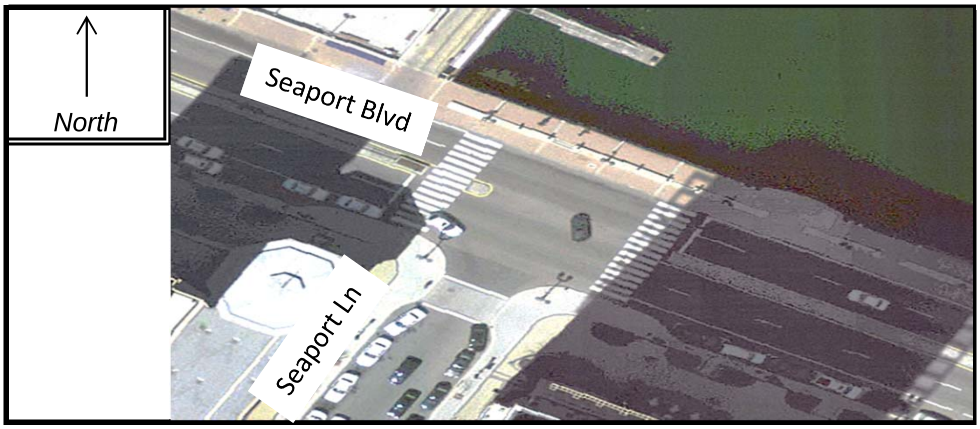
SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Seaport Boulevard

MINOR STREET(S) : Seaport Lane

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	**1**	**2**	**3**	**4**	**5**	**Total Entering Vehicles**
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/PM) :	776	557				**1,333**

" K " FACTOR : **0.090**

APPROACH ADT : **14,811**

ADT = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 4

OF YEARS : 3

AVERAGE # OF CRASHES (**A**) : **1.33**

CRASH RATE CALCULATION : **0.25**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date:

MASSACHUSETTS HIGHWAY DEPARTMENT - STATEWIDE TRAFFIC DATA COLLECTION

2011 WEEKDAY SEASONAL FACTORS *

* Note: These are weekday factors. The average of the factors for the year will not equal 1, as weekend data are not considered.

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
GROUP **1** - WEST INTERSTATE	0.98	0.93	0.90	0.89	0.90	0.88	0.91	0.90	0.89	0.89	0.93	0.95
Use group 2 for R5, R6, & R0 GROUP **2** - **RURAL MAJOR COLLECTOR (R-5)**	1.12	1.12	1.07	0.99	0.91	0.90	0.86	0.86	0.92	0.93	1.01	1.05
GROUP **3A** - RECREATIONAL **(1-4) See below	1.26	1.25	1.20	1.06	0.96	0.89	0.76	0.76	0.92	0.99	1.08	1.14
GROUP **3B** - RECREATIONAL ***(5) See below	1.22	1.26	1.22	1.06	0.96	0.90	0.72	0.74	0.97	1.02	1.14	1.15
GROUP **4** - I-495 INTERSTATE	1.02	1.00	1.00	0.96	0.92	0.89	0.85	0.83	0.93	0.96	1.01	1.03
GROUP **5** - EAST INTERSTATE	1.04	1.00	0.96	0.93	0.92	0.91	0.91	0.89	0.93	0.93	0.96	1.01
GROUP **6**: Use group 6 for U2, U3, U5, U6, U0, R2, & R3 **URBAN ARTERIALS, COLLECTORS & RURAL ARTERIALS (R-2, R-3)**	1.03	1.01	0.96	0.92	0.91	0.90	0.92	0.92	0.93	0.92	0.97	0.97
GROUP **7** - I-84 PROXIMITY (STA. 17, 3921)	1.24	1.24	1.15	1.04	0.99	1.00	0.93	0.89	1.05	1.05	1.05	1.12
GROUP **8** - I-295 PROXIMITY (STA. 6590)	1.00	0.99	0.95	0.92	0.94	0.91	0.93	0.92	0.95	0.94	0.97	0.95
GROUP **9** - I-195 PROXIMITY (STA. 7)	1.13	1.05	1.03	0.95	0.89	0.87	0.86	0.79	0.88	0.91	0.99	1.03

RECREATIONAL: (ALL YEARS)

**GROUP 3A:

1. CAPE COD (ALL TOWNS)

2.PLYMOUTH(SOUTH OF RTE.3A)

7014, 7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108,7178

3.MARTHA'S VINEYARD

4.NANTUCKET

***GROUP 3B:

5.PERMANENTS 2 & 189

1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,

1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,

1105,1106,1107,1108,1113,1114,1116,2196,2197,2198

2011 AXLE CORRECTION FACTORS

ROAD INVENTORY FUNCTIONAL CLASSIFICATION	AXLE CORRECTION FACTOR
RURAL	
1	0.95
2	0.97
3	0.98
0,5,6	0.98
URBAN	
1	0.96
2,3	0.98
5	0.98
0,6	0.99
I-84	0.90

ROUND OFF

0 - 999............10

> 1,000..........100

Apply I-84 factor to stations:

3290, 3921, 3929

Seaport Square PDA NPC - Block D
Trip Generation Assessment

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed
XX HARD CODED TO BALANCE (Manually change formatting)

HOWARD STEIN HUDSON
17-Jan-2017

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Office Building[4]	425	Total		11.030	4,688	1.13	5,298		0	0	5,298	55%	2,914	19%	1,008	17%	900	9%	476		34	1.13	796	830
	KSF	In	50%	5.515	2,344	1.13	2,649	0%	0	0	2,649	55%	1,457	19%	504	17%	450	9%	238	14	17	1.13	398	415
		Out	50%	5.515	2,344	1.13	2,649	0%	0	0	2,649	55%	1,457	19%	504	17%	450	9%	238	14	17	1.13	398	415
Shopping Center[5]	69.4	Total		42.700	2,964	1.78	5,276	25%	1,320	1,320	3,956	27%	1,068	39%	1,542	34%	1,346		0		0	1.78	756	756
	KSF	In	50%	21.350	1,482	1.78	2,638	25%	660	660	1,978	27%	534	39%	771	34%	673	0%	0	14.00	0	1.78	378	378
		Out	50%	21.350	1,482	1.78	2,638	25%	660	660	1,978	27%	534	39%	771	34%	673	0%	0	14.00	0	1.78	378	378
Total		Total			7,652		10,574		1,320	1,320	9,254		3,982		2,550		2,246		476				1,552	
		In			3,826		5,287		660	660	4,627		1,991		1,275		1,123		238				776	
		Out			3,826		5,287		660	660	4,627		1,991		1,275		1,123		238				776	
AM Peak Hour																								
Office Building[4]	425	Total		2.11	897	1.13	1,014		0	0	1,014		558		192		173		91		6	1.13	153	159
	KSF	In	97%	2.040	867	1.13	980	0%	0	0	980	55%	539	19%	186	17%	167	9%	88	14	6	1.13	148	154
		Out	3%	0.070	30	1.13	34	0%	0	0	34	55%	19	19%	6	17%	6	9%	3	14	0	1.13	5	5
Shopping Center[5]	69.4	Total		0.96	66	1.78	118	25%	22	22	96	27%	26	39%	37	34%	33		0		0	1.78	19	19
	KSF	In	62%	0.595	41	1.78	73	25%	11	11	62	27%	17	39%	24	34%	21	0%	0	5.75	0	1.78	12	12
		Out	38%	0.365	25	1.78	45	25%	11	11	34	27%	9	39%	13	34%	12	0%	0	5.75	0	1.78	7	7
Total		Total			963		1,132		22	22	1,110		584		229		206						172	178
		In			908		1,053		11	11	1,042		556		210		188						160	166
		Out			55		79		11	11	68		28		19		18						12	12
PM Peak Hour																								
Office Building[4]	425	Total		2.02	859	1.13	971		0	0	971		534		185		165		87		6	1.13	146	152
	KSF	In	3%	0.070	30	1.13	34	0%	0	0	34	55%	19	19%	6	17%	6	9%	3	14	0	1.13	5	5
		Out	97%	1.950	829	1.13	937	0%	0	0	937	55%	515	19%	179	17%	159	9%	84	14	6	1.13	141	147
Shopping Center[5]	69.4	Total		3.71	258	1.78	460	25%	110	110	350	27%	95	39%	136	34%	119		0		0	1.78	66	66
	KSF	In	48%	1.781	124	1.78	221	25%	55	55	166	27%	45	39%	65	34%	56	0%	0	5.75	0	1.78	31	31
		Out	52%	1.929	134	1.78	239	25%	55	55	184	27%	50	39%	71	34%	63	0%	0	5.75	0	1.78	35	35
Total		Total			1,117		1,431		110	110	1,321		629		321		284						212	218
		In			154		255		55	55	200		64		71		62						36	36
		Out			963		1,176		55	55	1,121		565		250		222						176	182

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Office Building trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 710 (General Office Building), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block F

Trip Generation Assessment

HOWARD STEIN HUDSON

17-Jan-2017

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed

XX HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Office Building[4]	63	Total		11.030	694	1.13	**784**		0	0	**784**	55%	**432**	19%	**148**	17%	**134**	9%	**70**		**6**	1.13	**118**	**124**
	KSF	In	50%	5.515	347	1.13	**392**	0%	0	0	**392**	55%	**216**	19%	**74**	17%	**67**	9%	**35**	14	**3**	1.13	**59**	**62**
		Out	50%	5.515	347	1.13	**392**	0%	0	0	**392**	55%	**216**	19%	**74**	17%	**67**	9%	**35**	14	**3**	1.13	**59**	**62**
Shopping Center[5]	58	Total		42.700	2,476	1.78	**4,408**	25%	1,102	1,102	**3,306**	27%	**892**	39%	**1,290**	34%	**1,124**		**0**		**0**	1.78	**632**	**632**
	KSF	In	50%	21.350	1,238	1.78	**2,204**	25%	551	551	**1,653**	27%	**446**	39%	**645**	34%	**562**	0%	**0**	14.00	**0**	1.78	**316**	**316**
		Out	50%	21.350	1,238	1.78	**2,204**	25%	551	551	**1,653**	27%	**446**	39%	**645**	34%	**562**	0%	**0**	14.00	**0**	1.78	**316**	**316**
Total		Total			**3,170**		**5,192**		**1,102**	1,102	**4,090**		**1,324**		**1,438**		**1,258**		**70**				**750**	
		In			**1,585**		**2,596**		**551**	551	**2,045**		**662**		**719**		**629**		**35**				**375**	
		Out			**1,585**		**2,596**		**551**	551	**2,045**		**662**		**719**		**629**		**35**				**375**	
AM Peak Hour																								
Office Building[4]	63	Total		2.11	133	1.13	**151**		0	0	**151**		**83**		**29**		**26**		**13**		**1**	1.13	**23**	**24**
	KSF	In	97%	2.040	129	1.13	**146**	0%	0	0	**146**	55%	**80**	19%	**28**	17%	**25**	**9%**	**13**	14	**1**	1.13	**22**	**23**
		Out	3%	0.070	4	1.13	**5**	0%	0	0	**5**	55%	**3**	19%	**1**	17%	**1**	**9%**	**0**	14	**0**	1.13	**1**	**1**
Shopping Center[5]	58	Total		0.96	56	1.78	**99**	25%	18	18	**81**	27%	**22**	39%	**31**	34%	**28**		**0**		**0**	1.78	**16**	**16**
	KSF	In	62%	0.595	35	1.78	**62**	25%	9	9	**53**	27%	**14**	39%	**21**	34%	**18**	0%	**0**	5.75	**0**	1.78	**10**	**10**
		Out	38%	0.365	21	1.78	**37**	25%	9	9	**28**	27%	**8**	39%	**10**	34%	**10**	0%	**0**	5.75	**0**	1.78	**6**	**6**
Total		Total			**189**		**250**		**18**	18	**232**		**105**		**60**		**54**						**39**	**40**
		In			**164**		**208**		**9**	9	**199**		**94**		**49**		**43**						**32**	**33**
		Out			**25**		**42**		**9**	9	**33**		**11**		**11**		**11**						**7**	**7**
PM Peak Hour																								
Office Building[4]	63	Total		2.02	127	1.13	**144**		0	0	**144**		**79**		**27**		**25**		**13**		**1**	1.13	**22**	**23**
	KSF	In	3%	0.070	4	1.13	**5**	0%	0	0	**5**	55%	**3**	19%	**1**	17%	**1**	**9%**	**0**	14	**0**	1.13	**1**	**1**
		Out	97%	1.950	123	1.13	**139**	0%	0	0	**139**	55%	**76**	19%	**26**	17%	**24**	**9%**	**13**	14	**1**	1.13	**21**	**22**
Shopping Center[5]	58	Total		3.71	215	1.78	**382**	25%	92	92	**290**	27%	**78**	39%	**113**	34%	**99**		**0**		**0**	1.78	**55**	**55**
	KSF	In	48%	1.781	103	1.78	**183**	25%	46	46	**137**	27%	**37**	39%	**53**	34%	**47**	0%	**0**	5.75	**0**	1.78	**26**	**26**
		Out	52%	1.929	112	1.78	**199**	25%	46	46	**153**	27%	**41**	39%	**60**	34%	**52**	0%	**0**	5.75	**0**	1.78	**29**	**29**
Total		Total			**342**		**526**		**92**	92	**434**		**157**		**140**		**124**						**77**	**78**
		In			**107**		**188**		**46**	46	**142**		**40**		**54**		**48**						**27**	**27**
		Out			**235**		**338**		**46**	46	**292**		**117**		**86**		**76**						**50**	**51**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Office Building trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 710 (General Office Building), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block G

Trip Generation Assessment

HOWARD STEIN HUDSON

17-Jan-2017

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed

XX HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips
Daily Peak Hour							
Apartment[4]	581	Total		6.650	3,864	1.13	**4,366**
	units	In	50%	3.325	1,932	1.13	**2,183**
		Out	50%	3.325	1,932	1.13	**2,183**
Shopping Center[5]	85.8	Total		42.700	3,664	1.78	**6,522**
	KSF	In	50%	21.350	1,832	1.78	**3,261**
		Out	50%	21.350	1,832	1.78	**3,261**
Total		Total			**7,528**		**10,888**
		In			**3,764**		**5,444**
		Out			**3,764**		**5,444**
AM Peak Hour							
Apartment[4]	581	Total		0.24	139	1.13	**157**
	units	In	20%	0.050	29	1.13	**33**
		Out	80%	0.190	110	1.13	**124**
Shopping Center[5]	85.8	Total		0.96	82	1.78	**146**
	KSF	In	62%	0.595	51	1.78	**91**
		Out	38%	0.365	31	1.78	**55**
Total		Total			**221**		**303**
		In			**80**		**124**
		Out			**141**		**179**
PM Peak Hour							
Apartment[4]	581	Total		0.24	139	1.13	**157**
	units	In	62%	0.150	87	1.13	**98**
		Out	38%	0.090	52	1.13	**59**
Shopping Center[5]	85.8	Total		3.71	319	1.78	**567**
	KSF	In	48%	1.781	153	1.78	**272**
		Out	52%	1.929	166	1.78	**295**
Total		Total			**458**		**724**
		In			**240**		**370**
		Out			**218**		**354**

Land Use	Size	Category	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips
Daily Peak Hour						
Apartment[4]	581	Total		0	0	**4,366**
	units	In	0%	0	0	**2,183**
		Out	0%	0	0	**2,183**
Shopping Center[5]	85.8	Total	25%	1,630	1,630	**4,892**
	KSF	In	25%	815	815	**2,446**
		Out	25%	815	815	**2,446**
Total		Total		**1,630**	1,630	**9,258**
		In		**815**	815	**4,629**
		Out		**815**	815	**4,629**
AM Peak Hour						
Apartment[4]	581	Total		0	0	**157**
	units	In	0%	0	0	**33**
		Out	0%	0	0	**124**
Shopping Center[5]	85.8	Total	25%	28	28	**118**
	KSF	In	25%	14	14	**77**
		Out	25%	14	14	**41**
Total		Total		**28**	28	**275**
		In		**14**	14	**110**
		Out		**14**	14	**165**
PM Peak Hour						
Apartment[4]	581	Total		0	0	**157**
	units	In	0%	0	0	**98**
		Out	0%	0	0	**59**
Shopping Center[5]	85.8	Total	25%	136	136	**431**
	KSF	In	25%	68	68	**204**
		Out	25%	68	68	**227**
Total		Total		**136**	136	**588**
		In		**68**	68	**302**
		Out		**68**	68	**286**

Land Use	Size	Category	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips
Daily Peak Hour								
Apartment[4]	581	Total	35%	**1,528**	39%	**1,702**	26%	**1,136**
	units	In	35%	**764**	39%	**851**	26%	**568**
		Out	35%	**764**	39%	**851**	26%	**568**
Shopping Center[5]	85.8	Total	27%	**1,320**	39%	**1,908**	34%	**1,664**
	KSF	In	27%	**660**	39%	**954**	34%	**832**
		Out	27%	**660**	39%	**954**	34%	**832**
Total		Total		**2,848**		**3,610**		**2,800**
		In		**1,424**		**1,805**		**1,400**
		Out		**1,424**		**1,805**		**1,400**
AM Peak Hour								
Apartment[4]	581	Total		**55**		**61**		**41**
	units	In	35%	**12**	39%	**12**	26%	**9**
		Out	35%	**43**	39%	**49**	26%	**32**
Shopping Center[5]	85.8	Total	27%	**32**	39%	**46**	34%	**40**
	KSF	In	27%	**21**	39%	**30**	34%	**26**
		Out	27%	**11**	39%	**16**	34%	**14**
Total		Total		**87**		**107**		**81**
		In		**33**		**42**		**35**
		Out		**54**		**65**		**46**
PM Peak Hour								
Apartment[4]	581	Total		**55**		**62**		**40**
	units	In	35%	**34**	39%	**39**	26%	**25**
		Out	35%	**21**	39%	**23**	26%	**15**
Shopping Center[5]	85.8	Total	27%	**116**	39%	**169**	34%	**146**
	KSF	In	27%	**55**	39%	**80**	34%	**69**
		Out	27%	**61**	39%	**89**	34%	**77**
Total		Total		**171**		**231**		**186**
		In		**89**		**119**		**94**
		Out		**82**		**112**		**92**

Land Use	Size	Category	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour									
Apartment[4]	581	Total	0%	**0**		**0**	1.13	**1,006**	**1,006**
	units	In	0%	**0**	14.00	**0**	1.13	**503**	**503**
		Out	0%	**0**	14.00	**0**	1.13	**503**	**503**
Shopping Center[5]	85.8	Total		**0**		**0**	1.78	**934**	**934**
	KSF	In	0%	**0**	14.00	**0**	1.78	**467**	**467**
		Out	0%	**0**	14.00	**0**	1.78	**467**	**467**
Total		Total		**0**				**1,940**	
		In		**0**				**970**	
		Out		**0**				**970**	
AM Peak Hour									
Apartment[4]	581	Total	**0%**	**0**		**0**	1.13	**36**	**36**
	units	In	0%	**0**	14.00	**0**	1.13	**8**	**8**
		Out	0%	**0**	14.00	**0**	1.13	**28**	**28**
Shopping Center[5]	85.8	Total		**0**		**0**	1.78	**23**	**23**
	KSF	In	0%	**0**	14.00	**0**	1.78	**15**	**15**
		Out	0%	**0**	14.00	**0**	1.78	**8**	**8**
Total		Total						**59**	**59**
		In						**23**	**23**
		Out						**36**	**36**
PM Peak Hour									
Apartment[4]	581	Total	**0%**	**0**		**0**	1.13	**35**	**35**
	units	In	0%	**0**	14.00	**0**	1.13	**22**	**22**
		Out	0%	**0**	14.00	**0**	1.13	**13**	**13**
Shopping Center[5]	85.8	Total		**0**		**0**	1.78	**82**	**82**
	KSF	In	0%	**0**	14.00	**0**	1.78	**39**	**39**
		Out	0%	**0**	14.00	**0**	1.78	**43**	**43**
Total		Total						**117**	**117**
		In						**61**	**61**
		Out						**56**	**56**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Apartment trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 220 (Apartment), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block L3

Trip Generation Assessment

HOWARD STEIN HUDSON

3-Feb-2017

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XX HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Apartment[4]	366	Total		6.650	2,434	1.13	**2,750**		0	0	**2,750**	35%	**962**	39%	**1,072**	26%	**716**	0%	**0**		**0**	1.13	**634**	**634**
	units	In	50%	3.325	1,217	1.13	**1,375**	0%	0	0	**1,375**	35%	**481**	39%	**536**	26%	**358**	0%	**0**	14.00	**0**	1.13	**317**	**317**
		Out	50%	3.325	1,217	1.13	**1,375**	0%	0	0	**1,375**	35%	**481**	39%	**536**	26%	**358**	0%	**0**	14.00	**0**	1.13	**317**	**317**
Shopping Center[5]	56	Total		42.700	2,392	1.78	**4,258**	25%	1,064	1,064	**3,194**	27%	**862**	39%	**1,246**	34%	**1,086**		**0**		**0**	1.78	**610**	**610**
	KSF	In	50%	21.350	1,196	1.78	**2,129**	25%	532	532	**1,597**	27%	**431**	39%	**623**	34%	**543**	0%	**0**	14.00	**0**	1.78	**305**	**305**
		Out	50%	21.350	1,196	1.78	**2,129**	25%	532	532	**1,597**	27%	**431**	39%	**623**	34%	**543**	0%	**0**	14.00	**0**	1.78	**305**	**305**
Total		Total			**4,826**		**7,008**		**1,064**	1,064	**5,944**		**1,824**		**2,318**		**1,802**		**0**				**1,244**	
		In			**2,413**		**3,504**		**532**	532	**2,972**		**912**		**1,159**		**901**		**0**				**622**	
		Out			**2,413**		**3,504**		**532**	532	**2,972**		**912**		**1,159**		**901**		**0**				**622**	
AM Peak Hour																								
Apartment[4]	366	Total		0.24	88	1.13	**99**		0	0	**99**		**35**		**38**		**26**	**0%**	**0**		**0**	1.13	**23**	**23**
	units	In	20%	0.050	18	1.13	**20**	0%	0	0	**20**	35%	**7**	39%	**8**	26%	**5**	0%	**0**	14.00	**0**	1.13	**4**	**4**
		Out	80%	0.190	70	1.13	**79**	0%	0	0	**79**	35%	**28**	39%	**30**	26%	**21**	0%	**0**	14.00	**0**	1.13	**19**	**19**
Shopping Center[5]	56	Total		0.96	53	1.78	**95**	25%	18	18	**77**	27%	**21**	39%	**30**	34%	**26**		**0**		**0**	1.78	**15**	**15**
	KSF	In	62%	0.595	33	1.78	**59**	25%	9	9	**50**	27%	**14**	39%	**19**	34%	**17**	0%	**0**	14.00	**0**	1.78	**10**	**10**
		Out	38%	0.365	20	1.78	**36**	25%	9	9	**27**	27%	**7**	39%	**11**	34%	**9**	0%	**0**	14.00	**0**	1.78	**5**	**5**
Total		Total			**141**		**194**		**18**	18	**176**		**56**		**68**		**52**						**38**	**38**
		In			**51**		**79**		**9**	9	**70**		**21**		**27**		**22**						**14**	**14**
		Out			**90**		**115**		**9**	9	**106**		**35**		**41**		**30**						**24**	**24**
PM Peak Hour																								
Apartment[4]	366	Total		0.24	88	1.13	**99**		0	0	**99**		**35**		**38**		**26**	**0%**	**0**		**0**	1.13	**23**	**23**
	units	In	62%	0.150	55	1.13	**62**	0%	0	0	**62**	35%	**22**	39%	**24**	26%	**16**	0%	**0**	14.00	**0**	1.13	**14**	**14**
		Out	38%	0.090	33	1.13	**37**	0%	0	0	**37**	35%	**13**	39%	**14**	26%	**10**	0%	**0**	14.00	**0**	1.13	**9**	**9**
Shopping Center[5]	56	Total		3.71	208	1.78	**370**	25%	90	90	**280**	27%	**76**	39%	**109**	34%	**95**		**0**		**0**	1.78	**53**	**53**
	KSF	In	48%	1.781	100	1.78	**178**	25%	45	45	**133**	27%	**36**	39%	**52**	34%	**45**	0%	**0**	14.00	**0**	1.78	**25**	**25**
		Out	52%	1.929	108	1.78	**192**	25%	45	45	**147**	27%	**40**	39%	**57**	34%	**50**	0%	**0**	14.00	**0**	1.78	**28**	**28**
Total		Total			**296**		**469**		**90**	90	**379**		**111**		**147**		**121**						**76**	**76**
		In			**155**		**240**		**45**	45	**195**		**58**		**76**		**61**						**39**	**39**
		Out			**141**		**229**		**45**	45	**184**		**53**		**71**		**60**						**37**	**37**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Apartment trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 220 (Apartment), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block L4
Trip Generation Assessment

HOWARD STEIN HUDSON
17-Jan-2017

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed
XX HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Office Building[4]	442.54	Total		11.030	4,882	1.13	**5,516**		0	0	**5,516**	55%	**3,034**	19%	**1,048**	17%	**938**	9%	**496**		**36**	1.13	**830**	**866**
	KSF	In	50%	5.515	2,441	1.13	**2,758**	0%	0	0	**2,758**	55%	**1,517**	19%	**524**	17%	**469**	9%	**248**	14	**18**	1.13	**415**	**433**
		Out	50%	5.515	2,441	1.13	**2,758**	0%	0	0	**2,758**	55%	**1,517**	19%	**524**	17%	**469**	9%	**248**	14	**18**	1.13	**415**	**433**
Shopping Center[5]	81	Total		42.700	3,458	1.78	**6,156**	25%	1,540	1,540	**4,616**	27%	**1,246**	39%	**1,800**	34%	**1,570**		**0**		**0**	1.78	**882**	**882**
	KSF	In	50%	21.350	1,729	1.78	**3,078**	25%	770	770	**2,308**	27%	**623**	39%	**900**	34%	**785**	0%	**0**	14.00	**0**	1.78	**441**	**441**
		Out	50%	21.350	1,729	1.78	**3,078**	25%	770	770	**2,308**	27%	**623**	39%	**900**	34%	**785**	0%	**0**	14.00	**0**	1.78	**441**	**441**
Total		Total			**8,340**		**11,672**		**1,540**	1,540	**10,132**		**4,280**		**2,848**		**2,508**		**496**				**1,712**	**1,748**
		In			**4,170**		**5,836**		**770**	770	**5,066**		**2,140**		**1,424**		**1,254**		**248**				**856**	**874**
		Out			**4,170**		**5,836**		**770**	770	**5,066**		**2,140**		**1,424**		**1,254**		**248**				**856**	**874**
AM Peak Hour																								
Office Building[4]	442.54	Total		2.11	934	1.13	**1,055**		0	0	**1,055**		**580**		**201**		**179**		**95**		**7**	1.13	**158**	**165**
	KSF	In	97%	2.040	903	1.13	**1,020**	0%	0	0	**1,020**	55%	**561**	19%	**194**	17%	**173**	**9%**	**92**	14	**7**	1.13	**153**	**160**
		Out	3%	0.070	31	1.13	**35**	0%	0	0	**35**	55%	**19**	19%	**7**	17%	**6**	**9%**	**3**	14	**0**	1.13	**5**	**5**
Shopping Center[5]	81	Total		0.96	78	1.78	**138**	25%	26	26	**112**	27%	**30**	39%	**44**	34%	**38**		**0**		**0**	1.78	**21**	**21**
	KSF	In	62%	0.595	48	1.78	**85**	25%	13	13	**72**	27%	**19**	39%	**29**	34%	**24**	0%	**0**	5.75	**0**	1.78	**13**	**13**
		Out	38%	0.365	30	1.78	**53**	25%	13	13	**40**	27%	**11**	39%	**15**	34%	**14**	0%	**0**	5.75	**0**	1.78	**8**	**8**
Total		Total			**1,012**		**1,193**		**26**	26	**1,167**		**610**		**245**		**217**						**179**	**186**
		In			**951**		**1,105**		**13**	13	**1,092**		**580**		**223**		**197**						**166**	**173**
		Out			**61**		**88**		**13**	13	**75**		**30**		**22**		**20**						**13**	**13**
PM Peak Hour																								
Office Building[4]	442.54	Total		2.02	894	1.13	**1,010**		0	0	**1,010**		**555**		**192**		**172**		**91**		**6**	1.13	**152**	**158**
	KSF	In	3%	0.070	31	1.13	**35**	0%	0	0	**35**	55%	**19**	19%	**7**	17%	**6**	**9%**	**3**	14	**0**	1.13	**5**	**5**
		Out	97%	1.950	863	1.13	**975**	0%	0	0	**975**	55%	**536**	19%	**185**	17%	**166**	**9%**	**88**	14	**6**	1.13	**147**	**153**
Shopping Center[5]	81	Total		3.71	300	1.78	**534**	25%	128	128	**406**	27%	**110**	39%	**158**	34%	**138**		**0**		**0**	1.78	**78**	**78**
	KSF	In	48%	1.781	144	1.78	**256**	25%	64	64	**192**	27%	**52**	39%	**75**	34%	**65**	0%	**0**	5.75	**0**	1.78	**37**	**37**
		Out	52%	1.929	156	1.78	**278**	25%	64	64	**214**	27%	**58**	39%	**83**	34%	**73**	0%	**0**	5.75	**0**	1.78	**41**	**41**
Total		Total			**1,194**		**1,544**		**128**	128	**1,416**		**665**		**350**		**310**						**230**	**236**
		In			**175**		**291**		**64**	64	**227**		**71**		**82**		**71**						**42**	**42**
		Out			**1,019**		**1,253**		**64**	64	**1,189**		**594**		**268**		**239**						**188**	**194**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Office Building trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 710 (General Office Building), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block L5

Trip Generation Assessment

HOWARD STEIN HUDSON

17-Jan-2017

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Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Office Building[4]	610	Total		11.030	6,728	1.13	**7,602**		0	0	**7,602**	55%	**4,182**	19%	**1,444**	17%	**1,292**	9%	**684**		**48**	1.13	**1,144**	**1,192**
	KSF	In	50%	5.515	3,364	1.13	**3,801**	0%	0	0	**3,801**	55%	**2,091**	19%	**722**	17%	**646**	9%	**342**	14	**24**	1.13	**572**	**596**
		Out	50%	5.515	3,364	1.13	**3,801**	0%	0	0	**3,801**	55%	**2,091**	19%	**722**	17%	**646**	9%	**342**	14	**24**	1.13	**572**	**596**
Shopping Center[5]	112	Total		42.700	4,782	1.78	**8,512**	25%	2,128	2,128	**6,384**	27%	**1,724**	39%	**2,490**	34%	**2,170**		**0**		**0**	1.78	**1,220**	**1,220**
	KSF	In	50%	21.350	2,391	1.78	**4,256**	25%	1,064	1,064	**3,192**	27%	**862**	39%	**1,245**	34%	**1,085**	0%	**0**	14.00	**0**	1.78	**610**	**610**
		Out	50%	21.350	2,391	1.78	**4,256**	25%	1,064	1,064	**3,192**	27%	**862**	39%	**1,245**	34%	**1085**	0%	**0**	14.00	**0**	1.78	**610**	**610**
Total		Total			**11,510**		**16,114**		**2,128**	2,128	**13,986**		**5,906**		**3,934**		**3,462**		**684**				**2,364**	
		In			**5,755**		**8,057**		**1,064**	1,064	**6,993**		**2,953**		**1,967**		**1,731**		**342**				**1,182**	
		Out			**5,755**		**8,057**		**1,064**	1,064	**6,993**		**2,953**		**1,967**		**1,731**		**342**				**1,182**	
AM Peak Hour																								
Office Building[4]	610	Total		2.11	1,287	1.13	**1,455**		0	0	**1,455**		**800**		**277**		**247**		**131**		**9**	1.13	**219**	**228**
	KSF	In	97%	2.040	1,244	1.13	**1,406**	0%	0	0	**1,406**	55%	**773**	19%	**267**	17%	**239**	**9%**	**127**	14	**9**	1.13	**212**	**221**
		Out	3%	0.070	43	1.13	**49**	0%	0	0	**49**	55%	**27**	19%	**10**	17%	**8**	**9%**	**4**	14	**0**	1.13	**7**	**7**
Shopping Center[5]	112	Total		0.96	108	1.78	**192**	25%	36	36	**156**	27%	**42**	39%	**61**	34%	**53**		**0**		**0**	1.78	**30**	**30**
	KSF	In	62%	0.595	67	1.78	**119**	25%	18	18	**101**	27%	**27**	39%	**40**	34%	**34**	0%	**0**	5.75	**0**	1.78	**19**	**19**
		Out	38%	0.365	41	1.78	**73**	25%	18	18	**55**	27%	**15**	39%	**21**	34%	**19**	0%	**0**	5.75	**0**	1.78	**11**	**11**
Total		Total			**1,395**		**1,647**		**36**	36	**1,611**		**842**		**338**		**300**						**249**	**258**
		In			**1,311**		**1,525**		**18**	18	**1,507**		**800**		**307**		**273**						**231**	**240**
		Out			**84**		**122**		**18**	18	**104**		**42**		**31**		**27**						**18**	**18**
PM Peak Hour																								
Office Building[4]	610	Total		2.02	1,233	1.13	**1,394**		0	0	**1,394**		**767**		**265**		**237**		**125**		**9**	1.13	**210**	**219**
	KSF	In	3%	0.070	43	1.13	**49**	0%	0	0	**49**	55%	**27**	19%	**10**	17%	**8**	**9%**	**4**	14	**0**	1.13	**7**	**7**
		Out	97%	1.950	1,190	1.13	**1,345**	0%	0	0	**1,345**	55%	**740**	19%	**255**	17%	**229**	**9%**	**121**	14	**9**	1.13	**203**	**212**
Shopping Center[5]	112	Total		3.71	415	1.78	**738**	25%	178	178	**560**	27%	**152**	39%	**218**	34%	**190**		**0**		**0**	1.78	**107**	**107**
	KSF	In	48%	1.781	199	1.78	**354**	25%	89	89	**265**	27%	**72**	39%	**103**	34%	**90**	0%	**0**	5.75	**0**	1.78	**51**	**51**
		Out	52%	1.929	216	1.78	**384**	25%	89	89	**295**	27%	**80**	39%	**115**	34%	**100**	0%	**0**	5.75	**0**	1.78	**56**	**56**
Total		Total			**1,648**		**2,132**		**178**	178	**1,954**		**919**		**483**		**427**						**317**	**326**
		In			**242**		**403**		**89**	89	**314**		**99**		**113**		**98**						**58**	**58**
		Out			**1,406**		**1,729**		**89**	89	**1,640**		**820**		**370**		**329**						**259**	**268**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
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Seaport Square PDA NPC - Block L6

Trip Generation Assessment

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17-Jan-2017

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Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	% Taxi[3]	Private Auto Person-Trips	Taxi Person-Trips	Assumed Local Auto Occupancy Rate[4]	Assumed Local Auto Occupancy Rate for Taxis[5]	Total Adjusted Private Auto Trips	Total Adjusted Taxi Trips	Total Adjusted Auto (Private + Taxi) Trips
Daily Peak Hour																									
Hotel[6]	389	Total		8.170	3,178	1.84	5,848		0	0	5,848	27%	1,578	39%	2,282	34%	1,988	30%	1,392	596	1.84	1.20	756	496	1,252
	rooms	In	50%	4.085	1,589	1.84	2,924	0%	0	0	2,924	27%	789	39%	1,141	34%	994	30%	696	298	1.84	1.20	378	248	626
		Out	50%	4.085	1,589	1.84	2,924	0%	0	0	2,924	27%	789	39%	1,141	34%	994	30%	696	298	1.84	1.20	378	248	626
Shopping Center[7]	51	Total		42.700	2,178	1.78	3,876	25%	970	970	2,906	27%	784	39%	1,134	34%	988	0%	988	0	1.78	1.20	556	0	556
	KSF	In	50%	21.350	1,089	1.78	1,938	25%	485	485	1,453	27%	392	39%	567	34%	494	0%	494	0	1.78	1.20	278	0	278
		Out	50%	21.350	1,089	1.78	1,938	25%	485	485	1,453	27%	392	39%	567	34%	494	0%	494	0	1.78	1.20	278	0	278
Total		Total			5,356		9,724		970	970	8,754		2,362		3,416		2,976		2,380	596			1,312	496	1,808
		In			2,678		4,862		485	485	4,377		1,181		1,708		1,488		1,190	298			656	248	904
		Out			2,678		4,862		485	485	4,377		1,181		1,708		1,488		1,190	298			656	248	904
AM Peak Hour																									
Hotel[6]	389	Total		0.53	207	1.84	380		0	0	380		102		149		129	30%	90	39	1.84	1.20	49	32	81
	rooms	In	59%	0.313	122	1.84	224	0%	0	0	224	27%	60	39%	88	34%	76	30%	53	23	1.84	1.20	29	19	48
		Out	41%	0.217	85	1.84	156	0%	0	0	156	27%	42	39%	61	34%	53	30%	37	16	1.84	1.20	20	13	33
Shopping Center[7]	51	Total		0.96	49	1.78	87	25%	18	18	69		19		26		24	0%	24	0	1.78	1.20	13	0	13
	KSF	In	62%	0.595	30	1.78	53	25%	9	9	44	27%	12	39%	17	34%	15	0%	15	0	1.78	1.20	8	0	8
		Out	38%	0.365	19	1.78	34	25%	9	9	25	27%	7	39%	9	34%	9	0%	9	0	1.78	1.20	5	0	5
Total		Total			256		467		18	18	449		121		175		153		114	39			62	32	94
		In			152		277		9	9	268		72		105		91		68	23			37	19	56
		Out			104		190		9	9	181		49		70		62		46	16			25	13	38
PM Peak Hour																									
Hotel[6]	389	Total		0.60	233	1.84	429		0	0	429		116		168		145	30%	102	43	1.84	1.20	55	36	91
	rooms	In	51%	0.306	119	1.84	219	0%	0	0	219	27%	59	39%	86	34%	74	30%	52	22	1.84	1.20	28	18	46
		Out	49%	0.294	114	1.84	210	0%	0	0	210	27%	57	39%	82	34%	71	30%	50	21	1.84	1.20	27	18	45
Shopping Center[7]	51	Total		3.71	189	1.78	336	25%	82	82	254		69		99		86	0%	86	0	1.78	1.20	48	0	48
	KSF	In	48%	1.781	91	1.78	162	25%	41	41	121	27%	33	39%	47	34%	41	0%	41	0	1.78	1.20	23	0	23
		Out	52%	1.929	98	1.78	174	25%	41	41	133	27%	36	39%	52	34%	45	0%	45	0	1.78	1.20	25	0	25
Total		Total			422		765		82	82	683		185		267		231		188	43			103	36	139
		In			210		381		41	41	340		92		133		115		93	22			51	18	69
		Out			212		384		41	41	343		93		134		116		95	21			52	18	70

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Vehicle Trips = 70% Private Auto and 30% Taxi. Taxi trip rate based on CTPS Taxi activity rates for Hotel lane use, as adopted by Central Artery/Tunnel Project
4. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
5. For taxi cabs, 1.2 passengers per cab. (2.2 minus 1 driver equals 1.2)
6. ITE Trip Generation Manual, 9th Edition, LUC 310 (Hotel), average rate
7. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block N

Trip Generation Assessment

HOWARD STEIN HUDSON

17-Jan-2017

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed

XX HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Apartment[4]	350	Total		6.650	2,328	1.13	**2,630**		0	0	**2,630**	35%	**920**	39%	**1,026**	26%	**684**	0%	**0**		**0**	1.13	**606**	**606**
	units	In	50%	3.325	1,164	1.13	**1,315**	0%	0	0	**1,315**	35%	**460**	39%	**513**	26%	**342**	0%	**0**	14.00	**0**	1.13	**303**	**303**
		Out	50%	3.325	1,164	1.13	**1,315**	0%	0	0	**1,315**	35%	**460**	39%	**513**	26%	**342**	0%	**0**	14.00	**0**	1.13	**303**	**303**
Shopping Center[5]	72	Total		42.700	3,074	1.78	**5,472**	25%	1,368	1,368	**4,104**	27%	**1,108**	39%	**1,600**	34%	**1,396**		**0**		**0**	1.78	**784**	**784**
	KSF	In	50%	21.350	1,537	1.78	**2,736**	25%	684	684	**2,052**	27%	**554**	39%	**800**	34%	**698**	0%	**0**	14.00	**0**	1.78	**392**	**392**
		Out	50%	21.350	1,537	1.78	**2,736**	25%	684	684	**2,052**	27%	**554**	39%	**800**	34%	**698**	0%	**0**	14.00	**0**	1.78	**392**	**392**
Total		Total			**5,402**		**8,102**		**1,368**	1,368	**6,734**		**2,028**		**2,626**		**2,080**		**0**				**1,390**	
		In			**2,701**		**4,051**		**684**	684	**3,367**		**1,014**		**1,313**		**1,040**		**0**				**695**	
		Out			**2,701**		**4,051**		**684**	684	**3,367**		**1,014**		**1,313**		**1,040**		**0**				**695**	
AM Peak Hour																								
Apartment[4]	350	Total		0.24	85	1.13	**96**		0	0	**96**		**34**		**37**		**25**	**0%**	**0**		**0**	1.13	**22**	**22**
	units	In	20%	0.050	18	1.13	**20**	0%	0	0	**20**	35%	**7**	39%	**8**	26%	**5**	0%	**0**	14.00	**0**	1.13	**4**	**4**
		Out	80%	0.190	67	1.13	**76**	0%	0	0	**76**	35%	**27**	39%	**29**	26%	**20**	0%	**0**	14.00	**0**	1.13	**18**	**18**
Shopping Center[5]	72	Total		0.96	69	1.78	**123**	25%	24	24	**99**	27%	**27**	39%	**38**	34%	**34**		**0**		**0**	1.78	**19**	**19**
	KSF	In	62%	0.595	43	1.78	**77**	25%	12	12	**65**	27%	**18**	39%	**25**	34%	**22**	0%	**0**	14.00	**0**	1.78	**12**	**12**
		Out	38%	0.365	26	1.78	**46**	25%	12	12	**34**	27%	**9**	39%	**13**	34%	**12**	0%	**0**	14.00	**0**	1.78	**7**	**7**
Total		Total			**154**		**219**		**24**	24	**195**		**61**		**75**		**59**						**41**	**41**
		In			**61**		**97**		**12**	12	**85**		**25**		**33**		**27**						**16**	**16**
		Out			**93**		**122**		**12**	12	**110**		**36**		**42**		**32**						**25**	**25**
PM Peak Hour																								
Apartment[4]	350	Total		0.24	85	1.13	**96**		0	0	**96**		**34**		**38**		**25**	**0%**	**0**		**0**	1.13	**22**	**22**
	units	In	62%	0.150	53	1.13	**60**	0%	0	0	**60**	35%	**21**	39%	**24**	26%	**16**	0%	**0**	14.00	**0**	1.13	**14**	**14**
		Out	38%	0.090	32	1.13	**36**	0%	0	0	**36**	35%	**13**	39%	**14**	26%	**9**	0%	**0**	14.00	**0**	1.13	**8**	**8**
Shopping Center[5]	72	Total		3.71	267	1.78	**475**	25%	114	114	**361**	27%	**97**	39%	**141**	34%	**123**		**0**		**0**	1.78	**70**	**70**
	KSF	In	48%	1.781	128	1.78	**228**	25%	57	57	**171**	27%	**46**	39%	**67**	34%	**58**	0%	**0**	14.00	**0**	1.78	**33**	**33**
		Out	52%	1.929	139	1.78	**247**	25%	57	57	**190**	27%	**51**	39%	**74**	34%	**65**	0%	**0**	14.00	**0**	1.78	**37**	**37**
Total		Total			**352**		**571**		**114**	114	**457**		**131**		**179**		**148**						**92**	**92**
		In			**181**		**288**		**57**	57	**231**		**67**		**91**		**74**						**47**	**47**
		Out			**171**		**283**		**57**	57	**226**		**64**		**88**		**74**						**45**	**45**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Apartment trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 220 (Apartment), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Seaport Square PDA NPC - Block P

Trip Generation Assessment

XXX Means Columns U, X, and AA do not sum to Column R; hard code adjustements are needed

XX HARD CODED TO BALANCE (Manually change formatting)

HOWARD STEIN HUDSON

17-Jan-2017

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Pass-By Person-Trips Share	Pass-By Person-Trips	Non-Primary Person-Trips	Primary Person Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Shuttle Share[2]	Shuttle Person-Trips	Shuttle Occupancy Rate	Shuttle Trips	Assumed Local Auto Occupancy Rate[3]	Total Adjusted Auto Trips	Total Adjusted Auto+Shuttle Trips
Daily Peak Hour																								
Office Building[4]	491	Total		11.030	5,416	1.13	**6,120**		0	0	**6,120**	55%	**3,366**	19%	**1,164**	17%	**1,040**	9%	**550**		**40**	1.13	**920**	**960**
	KSF	In	50%	5.515	2,708	1.13	**3,060**	0%	0	0	**3,060**	55%	**1,683**	19%	**582**	17%	**520**	9%	**275**	14	**20**	1.13	**460**	**480**
		Out	50%	5.515	2,708	1.13	**3,060**	0%	0	0	**3,060**	55%	**1,683**	19%	**582**	17%	**520**	9%	**275**	14	**20**	1.13	**460**	**480**
Shopping Center[5]	75	Total		42.700	3,202	1.78	**5,700**	25%	1,426	1,426	**4,274**	27%	**1,154**	39%	**1,666**	34%	**1,454**		**0**		**0**	1.78	**816**	**816**
	KSF	In	50%	21.350	1,601	1.78	**2,850**	25%	713	713	**2,137**	27%	**577**	39%	**833**	34%	**727**	0%	**0**	14.00	**0**	1.78	**408**	**408**
		Out	50%	21.350	1,601	1.78	**2,850**	25%	713	713	**2,137**	27%	**577**	39%	**833**	34%	**727**	0%	**0**	14.00	**0**	1.78	**408**	**408**
Total		Total			**8,618**		**11,820**		**1,426**	1,426	**10,394**		**4,520**		**2,830**		**2,494**		550				**1,736**	
		In			**4,309**		**5,910**		**713**	713	**5,197**		**2,260**		**1,415**		**1,247**		275				**868**	
		Out			**4,309**		**5,910**		**713**	713	**5,197**		**2,260**		**1,415**		**1,247**		275				**868**	
AM Peak Hour																								
Office Building[4]	491	Total		2.11	1,036	1.13	**1,170**		0	0	**1,170**		**644**		**223**		**198**		**105**		**7**	1.13	**175**	**182**
	KSF	In	97%	2.040	1,002	1.13	**1,132**	0%	0	0	**1,132**	55%	**623**	19%	**215**	17%	**192**	**9%**	**102**	14	**7**	1.13	**170**	**177**
		Out	3%	0.070	34	1.13	**38**	0%	0	0	**38**	55%	**21**	19%	**8**	17%	**6**	**9%**	**3**	14	**0**	1.13	**5**	**5**
Shopping Center[5]	75	Total		0.96	72	1.78	**128**	25%	24	24	**104**	27%	**28**	39%	**41**	34%	**35**		**0**		**0**	1.78	**20**	**20**
	KSF	In	62%	0.595	45	1.78	**80**	25%	12	12	**68**	27%	**18**	39%	**27**	34%	**23**	0%	**0**	5.75	**0**	1.78	**13**	**13**
		Out	38%	0.365	27	1.78	**48**	25%	12	12	**36**	27%	**10**	39%	**14**	34%	**12**	0%	**0**	5.75	**0**	1.78	**7**	**7**
Total		Total			**1,108**		**1,298**		**24**	24	**1,274**		**672**		**264**		**233**						**195**	**202**
		In			**1,047**		**1,212**		**12**	12	**1,200**		**641**		**242**		**215**						**183**	**190**
		Out			**61**		**86**		**12**	12	**74**		**31**		**22**		**18**						**12**	**12**
PM Peak Hour																								
Office Building[4]	491	Total		2.02	991	1.13	**1,119**		0	0	**1,119**		**616**		**213**		**190**		**100**		**7**	1.13	**168**	**175**
	KSF	In	3%	0.070	34	1.13	**38**	0%	0	0	**38**	55%	**21**	19%	**8**	17%	**6**	**9%**	**3**	14	**0**	1.13	**5**	**5**
		Out	97%	1.950	957	1.13	**1,081**	0%	0	0	**1,081**	55%	**595**	19%	**205**	17%	**184**	**9%**	**97**	14	**7**	1.13	**163**	**170**
Shopping Center[5]	75	Total		3.71	279	1.78	**497**	25%	120	120	**377**	27%	**101**	39%	**148**	34%	**128**		**0**		**0**	1.78	**72**	**72**
	KSF	In	48%	1.781	134	1.78	**239**	25%	60	60	**179**	27%	**48**	39%	**70**	34%	**61**	0%	**0**	5.75	**0**	1.78	**34**	**34**
		Out	52%	1.929	145	1.78	**258**	25%	60	60	**198**	27%	**53**	39%	**78**	34%	**67**	0%	**0**	5.75	**0**	1.78	**38**	**38**
Total		Total			**1,270**		**1,616**		**120**	120	**1,496**		**717**		**361**		**318**						**240**	**247**
		In			**168**		**277**		**60**	60	**217**		**69**		**78**		**67**						**39**	**39**
		Out			**1,102**		**1,339**		**60**	60	**1,279**		**648**		**283**		**251**						**201**	**208**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on HSH field work and South Boston Waterfront Sustainable Transportation Plan
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
4. Peak hour Office Building trip rates calculated based on HSH field work 11/01/16, daily rates based on ITE LUC 710 (General Office Building), average rate
5. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	2	4	115	29	5	0	360	1	10	0	0	3	
Future Volume (vph)	2	4	115	29	5	0	360	1	10	0	0	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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		0.97	0.98		0.98			0.96					
Frt			0.850					0.862			0.865		
Flt Protected		0.984			0.959		0.950						
Satd. Flow (prot)	0	1870	1417	0	1777	0	1719	1567	0	0	1644	0	
Flt Permitted		0.892			0.751		0.950						
Satd. Flow (perm)	0	1636	1391	0	1368	0	1719	1567	0	0	1644	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			160					11			541		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		278			172			335			275		
Travel Time (s)		6.3			3.9			7.6			6.3		
Confl. Peds. (#/hr)	35		10	10		35			31	31			
Peak Hour Factor	0.72	0.72	0.72	0.71	0.71	0.71	0.95	0.95	0.95	0.38	0.38	0.38	
Heavy Vehicles (%)	0%	0%	14%	3%	0%	0%	5%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	3	6	160	41	7	0	379	1	11	0	0	8	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	9	160	0	48	0	379	12	0	0	8	0	
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA			NA		
Protected Phases		4	1		4		1	1 2			2		3
Permitted Phases	4		4	4						2			
Detector Phase	4	4	1	4	4		1	1 2		2	2		
Switch Phase													
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0		8.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0			13.0	13.0		22.0
Total Split (s)	22.0	22.0	44.0	22.0	22.0		44.0			22.0	22.0		22.0
Total Split (%)	20.0%	20.0%	40.0%	20.0%	20.0%		40.0%			20.0%	20.0%		20%
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)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0		1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0		
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0		
Lead/Lag	Lag	Lag	Lead	Lag	Lag		Lead			Lag	Lag		Lead
Lead-Lag Optimize?													
Recall Mode	None	None	C-Max	None	None		C-Max			None	None		None
Act Effct Green (s)		9.2	96.8		9.2		89.2	100.6			8.0		
Actuated g/C Ratio		0.08	0.88		0.08		0.81	0.91			0.07		
v/c Ratio		0.07	0.13		0.42		0.27	0.01			0.01		
Control Delay		48.5	0.5		58.8		1.5	0.2			0.0		
Queue Delay		0.0	0.0		0.0		0.8	0.0			0.0		
Total Delay		48.5	0.5		58.8		2.3	0.2			0.0		
LOS		D	A		E		A	A			A		
Approach Delay		3.0			58.8			2.2					
Approach LOS		A			E			A					
Stops (vph)		7	3		32		67	0			0		
Fuel Used(gal)		0	0		1		1	0			0		
CO Emissions (g/hr)		8	19		44		99	2			0		
NOx Emissions (g/hr)		2	4		9		19	0			0		
VOC Emissions (g/hr)		2	4		10		23	0			0		
Dilemma Vehicles (#)		0	0		0		0	0			0		
Queue Length 50th (ft)		6	0		33		3	0			0		
Queue Length 95th (ft)		18	3		54		m5	m0			0		
Internal Link Dist (ft)		198			92			255			195		
Turn Bay Length (ft)													
Base Capacity (vph)		252	1264		211		1393	1499			711		
Starvation Cap Reductn		0	0		0		700	0			0		
Spillback Cap Reductn		0	0		0		0	0			0		
Storage Cap Reductn		0	0		0		0	0			0		
Reduced v/c Ratio		0.04	0.13		0.23		0.55	0.01			0.01		

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 6.8 Intersection LOS: A
Intersection Capacity Utilization 43.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	208	619	99	3	14	555	31	74	49	25	31	35	101
Future Volume (vph)	208	619	99	3	14	555	31	74	49	25	31	35	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	0		125		125		0	0		0	0		100
Storage Lanes	0		0		1		0	0		0	0		0
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	0.95	0.95	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				0.97			0.93			0.93	0.92
Frt		0.984				0.992			0.977				0.850
Flt Protected		0.989			0.950				0.976			0.977	
Satd. Flow (prot)	0	2777	0	0	1624	2909	0	0	1305	0	0	1389	1255
Flt Permitted		0.528			0.226				0.812			0.834	
Satd. Flow (perm)	0	1483	0	0	386	2909	0	0	1052	0	0	1104	1152
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		19				12			9				109
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		1029				308			511			339	
Travel Time (s)		23.4				7.0			11.6			7.7	
Confl. Peds. (#/hr)	130		69		69		130	46		157	157		46
Confl. Bikes (#/hr)			29				8			5			2
Peak Hour Factor	0.96	0.96	0.96	0.50	0.97	0.97	0.97	0.89	0.89	0.89	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	0%	0%	0%	6%	38%	7%	2%	0%	35%	0%	12%
Parking (#/hr)							0		0	0			
Adj. Flow (vph)	217	645	103	6	14	572	32	83	55	28	33	38	109
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	965	0	0	20	604	0	0	166	0	0	71	109
Turn Type	Perm	NA		Perm	D.P+P	NA		Perm	NA		Perm	NA	Perm
Protected Phases		1			4	1 4			3			3	
Permitted Phases	1			1 4	1			3			3		3
Detector Phase	1	1		1 4	4	1 4		3	3		3	3	3
Switch Phase													
Minimum Initial (s)	10.0	10.0			8.0			8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	23.0	23.0			15.0			29.0	29.0		29.0	29.0	29.0
Total Split (s)	66.0	66.0			15.0			29.0	29.0		29.0	29.0	29.0
Total Split (%)	60.0%	60.0%			13.6%			26.4%	26.4%		26.4%	26.4%	26.4%
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	3.0	3.0
Lost Time Adjust (s)		-2.0			-2.0				-2.0			-2.0	-2.0
Total Lost Time (s)		4.0			4.0				4.0			4.0	4.0
Lead/Lag					Lag			Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max			None			Max	Max		Max	Max	Max
Act Effct Green (s)		62.0			73.0	77.0			25.0			25.0	25.0
Actuated g/C Ratio		0.56			0.66	0.70			0.23			0.23	0.23
v/c Ratio		3.44dl			0.05	0.30			0.67			0.28	0.32
Control Delay		89.7			7.1	10.0			41.3			36.7	9.8
Queue Delay		0.0			0.0	0.0			0.0			0.0	0.0
Total Delay		89.7			7.1	10.0			41.3			36.7	9.8
LOS		F			A	A			D			D	A
Approach Delay		89.7				9.9			41.3			20.4	
Approach LOS		F				A			D			C	
Stops (vph)		828			9	270			146			57	35
Fuel Used(gal)		29			0	7			3			1	1
CO Emissions (g/hr)		2022			14	495			212			69	46
NOx Emissions (g/hr)		393			3	96			41			13	9
VOC Emissions (g/hr)		469			3	115			49			16	11
Dilemma Vehicles (#)		0			0	0			0			0	0
Queue Length 50th (ft)		~425			8	128			52			45	14
Queue Length 95th (ft)		m#461			m15	113			m#158			91	57
Internal Link Dist (ft)		949				228			431			259	
Turn Bay Length (ft)					125								100
Base Capacity (vph)		844			379	2039			246			250	346
Starvation Cap Reductn		0			0	0			0			0	0
Spillback Cap Reductn		0			0	0			0			0	0
Storage Cap Reductn		0			0	0			0			0	0
Reduced v/c Ratio		1.14			0.05	0.30			0.67			0.28	0.32

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 71 (65%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 53.4 Intersection LOS: D
Intersection Capacity Utilization 76.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

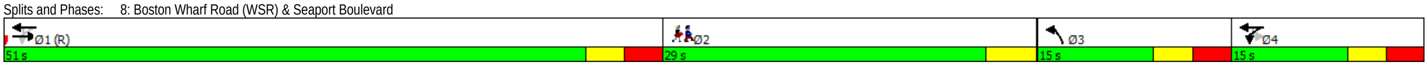
Splits and Phases: 7: Sleeper Street & Seaport Boulevard

Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø2
Lane Configurations									
Traffic Volume (vph)	1	461	153	14	72	467	111	46	
Future Volume (vph)	1	461	153	14	72	467	111	46	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	12	11	12	12	
Storage Length (ft)	0		0		100		0	100	
Storage Lanes	0		0		1		2	1	
Taper Length (ft)	25				25		25		
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95	
Ped Bike Factor		0.99							
Frt		0.963					0.956		
Flt Protected					0.950		0.966		
Satd. Flow (prot)	0	2794	0	0	1523	2935	3042	0	
Flt Permitted		0.876			0.348		0.966		
Satd. Flow (perm)	0	2448	0	0	558	2935	3042	0	
Right Turn on Red			Yes					Yes	
Satd. Flow (RTOR)		51					47		
Link Speed (mph)		30				30	30		
Link Distance (ft)		655				254	912		
Travel Time (s)		14.9				5.8	20.7		
Confl. Bikes (#/hr)			20						
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.96	0.96	
Heavy Vehicles (%)	0%	8%	5%	0%	8%	7%	1%	0%	
Adj. Flow (vph)	1	518	172	16	80	519	116	48	
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	691	0	0	96	519	164	0	
Turn Type	Perm	NA		custom	D.P+P	NA	Prot		
Protected Phases		1			4	1 4	3		2
Permitted Phases	1			4	1				
Detector Phase	1	1		4	4	1 4	3		
Switch Phase									
Minimum Initial (s)	10.0	10.0		8.0	8.0		8.0		8.0
Minimum Split (s)	18.0	18.0		15.0	15.0		15.0		29.0
Total Split (s)	51.0	51.0		15.0	15.0		15.0		29.0
Total Split (%)	46.4%	46.4%		13.6%	13.6%		13.6%		26%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		4.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		0.0
Lost Time Adjust (s)		-2.0			-1.0		-1.0		
Total Lost Time (s)		4.0			5.0		5.0		
Lead/Lag	Lead	Lead		Lag	Lag		Lead		Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max		Max	Max		Max		None
Act Effct Green (s)		70.2			79.2	85.2	10.0		
Actuated g/C Ratio		0.64			0.72	0.77	0.09		
v/c Ratio		0.44			0.20	0.23	0.51		
Control Delay		4.9			6.4	5.2	42.6		
Queue Delay		0.0			0.0	0.0	0.0		
Total Delay		4.9			6.4	5.2	42.6		
LOS		A			A	A	D		
Approach Delay		4.9				5.4	42.6		
Approach LOS		A				A	D		
Stops (vph)		164			23	135	193		
Fuel Used(gal)		6			1	3	4		
CO Emissions (g/hr)		429			41	218	248		
NOx Emissions (g/hr)		83			8	42	48		
VOC Emissions (g/hr)		99			9	51	57		
Dilemma Vehicles (#)		0			0	0	0		
Queue Length 50th (ft)		2			9	40	32		
Queue Length 95th (ft)		m77			42	102	74		
Internal Link Dist (ft)		575				174	832		
Turn Bay Length (ft)					100				
Base Capacity (vph)		1581			489	2273	319		
Starvation Cap Reductn		0			0	0	0		
Spillback Cap Reductn		0			0	0	0		
Storage Cap Reductn		0			0	0	0		
Reduced v/c Ratio		0.44			0.20	0.23	0.51		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 93 (85%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 51.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	9	31	481	0	0	370	109	115	231	37	85	0	59
Future Volume (vph)	9	31	481	0	0	370	109	115	231	37	85	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	1		1	1		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.89				0.95		0.93		0.87	0.92	0.91	
Frt						0.966				0.850		0.871	
Flt Protected		0.950						0.950			0.950	0.993	
Satd. Flow (prot)	0	1398	2737	0	0	2656	0	1570	1676	1405	1354	1143	0
Flt Permitted		0.370						0.950			0.950	0.993	
Satd. Flow (perm)	0	487	2737	0	0	2656	0	1455	1676	1220	1242	1130	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						38				119		119	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			263			376			812			335	
Travel Time (s)			6.0			8.5			18.5			7.6	
Confl. Peds. (#/hr)	50	127					127	50		74	74		50
Confl. Bikes (#/hr)							26						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.82	0.82	0.82	0.81	0.81	0.81
Heavy Vehicles (%)	0%	21%	9%	0%	0%	9%	7%	0%	2%	0%	14%	0%	13%
Parking (#/hr)			0	0									
Adj. Flow (vph)	10	34	523	0	0	394	116	140	282	45	105	0	73
Shared Lane Traffic (%)											11%		
Lane Group Flow (vph)	0	44	523	0	0	510	0	140	282	45	93	85	0
Turn Type	D.Pm	D.P+P	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases		7	1 7			1		6	6		5	5	
Permitted Phases	1	1								6			
Detector Phase	1	7	1 7			1		6	6	6	5	5	
Switch Phase													
Minimum Initial (s)	10.0	8.0				10.0		10.0	10.0	10.0	8.0	8.0	
Minimum Split (s)	26.0	13.0				26.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	40.0	15.0				40.0		27.0	27.0	27.0	28.0	28.0	
Total Split (%)	36.4%	13.6%				36.4%		24.5%	24.5%	24.5%	25.5%	25.5%	
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0				-2.0		-2.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)		5.0				3.0		3.0	5.0	3.0	5.0	5.0	
Lead/Lag		Lag						Lead	Lead	Lead			
Lead-Lag Optimize?													
Recall Mode	C-Max	None				C-Max		None	None	None	None	None	
Act Effct Green (s)		54.7	61.7			44.1		25.0	23.0	25.0	12.3	12.3	
Actuated g/C Ratio		0.50	0.56			0.40		0.23	0.21	0.23	0.11	0.11	
v/c Ratio		0.13	0.34			0.47		0.39	0.81	0.12	0.62	0.36	
Control Delay		12.8	11.7			22.4		43.2	60.6	6.4	73.2	15.5	
Queue Delay		0.0	0.0			0.2		0.0	0.0	0.0	0.0	0.0	
Total Delay		12.8	11.7			22.6		43.2	60.6	6.4	73.2	15.5	
LOS		B	B			C		D	E	A	E	B	
Approach Delay			11.8			22.6			50.2			45.6	
Approach LOS			B			C			D			D	
Stops (vph)		15	160			327		110	231	9	72	29	
Fuel Used(gal)		0	4			5		2	6	0	2	1	
CO Emissions (g/hr)		24	277			377		164	391	23	120	39	
NOx Emissions (g/hr)		5	54			73		32	76	5	23	8	
VOC Emissions (g/hr)		6	64			87		38	91	5	28	9	
Dilemma Vehicles (#)		0	0			0		0	0	0	0	0	
Queue Length 50th (ft)		14	84			109		102	215	3	68	0	
Queue Length 95th (ft)		m14	46			158		145	268	m10	113	26	
Internal Link Dist (ft)			183			296			732			255	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		346	1534			1086		377	372	383	283	333	
Starvation Cap Reductn		0	0			144		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		0.13	0.34			0.54		0.37	0.76	0.12	0.33	0.26	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 28.9 Intersection LOS: C
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

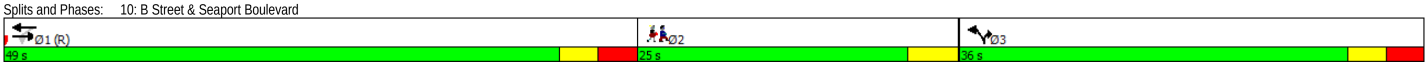
Splits and Phases: 9: East Service Road & Seaport Boulevard

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	538	65	46	195	284	124	
Future Volume (vph)	538	65	46	195	284	124	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	13	11	12	
Storage Length (ft)		0	0		125	125	
Storage Lanes		0	0		1	0	
Taper Length (ft)			25		25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	1.00	
Ped Bike Factor	1.00						
Frt	0.984					0.850	
Flt Protected				0.991	0.950		
Satd. Flow (prot)	2889	0	0	2484	2901	1358	
Flt Permitted				0.711	0.950		
Satd. Flow (perm)	2889	0	0	1782	2901	1358	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	392			591	498		
Travel Time (s)	8.9			13.4	11.3		
Confl. Bikes (#/hr)		23					
Peak Hour Factor	0.92	0.92	0.72	0.72	0.84	0.84	
Heavy Vehicles (%)	11%	5%	24%	28%	5%	7%	
Parking (#/hr)				0			
Adj. Flow (vph)	585	71	64	271	338	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	656	0	0	335	338	148	
Turn Type	NA		Perm	NA	Prot	Prot	
Protected Phases	1			1	3	3	2
Permitted Phases			1				
Detector Phase	1		1	1	3	3	
Switch Phase							
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0	8.0
Minimum Split (s)	18.0		18.0	18.0	15.0	15.0	25.0
Total Split (s)	49.0		49.0	49.0	36.0	36.0	25.0
Total Split (%)	44.5%		44.5%	44.5%	32.7%	32.7%	23%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	3.0		3.0	3.0	3.0	3.0	0.0
Lost Time Adjust (s)	-2.0			-2.0	0.0	0.0	
Total Lost Time (s)	4.0			4.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lead			Lag
Lead-Lag Optimize?							
Recall Mode	C-Max		C-Max	C-Max	Max	Max	Ped
Act Effct Green (s)	45.0			45.0	30.0	30.0	
Actuated g/C Ratio	0.41			0.41	0.27	0.27	
v/c Ratio	0.56			0.46	0.43	0.40	
Control Delay	22.6			26.2	24.6	26.0	
Queue Delay	0.3			0.0	0.0	0.0	
Total Delay	22.9			26.2	24.6	26.0	
LOS	C			C	C	C	
Approach Delay	22.9			26.2	25.1		
Approach LOS	C			C	C		
Stops (vph)	360			172	220	96	
Fuel Used(gal)	7			3	4	2	
CO Emissions (g/hr)	463			234	262	117	
NOx Emissions (g/hr)	90			46	51	23	
VOC Emissions (g/hr)	107			54	61	27	
Dilemma Vehicles (#)	0			0	0	0	
Queue Length 50th (ft)	171			88	88	76	
Queue Length 95th (ft)	112			98	121	126	
Internal Link Dist (ft)	312			511	418		
Turn Bay Length (ft)					125	125	
Base Capacity (vph)	1181			729	791	370	
Starvation Cap Reductn	127			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.62			0.46	0.43	0.40	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 97 (88%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 24.4 Intersection LOS: C
Intersection Capacity Utilization 47.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: B Street & Seaport Boulevard

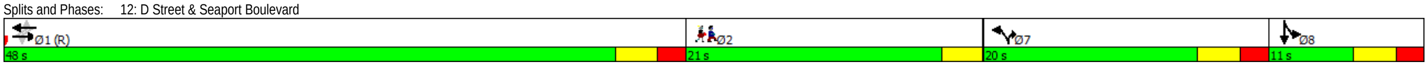


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	21	402	168	40	106	26	141	0	15	34	15	15	
Future Volume (vph)	21	402	168	40	106	26	141	0	15	34	15	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.96			0.98		0.94	0.57			0.88		
Frt		0.957			0.977			0.850	0.850		0.968		
Flt Protected		0.998			0.988		0.950				0.974		
Satd. Flow (prot)	0	2851	0	0	2506	0	1626	0	1615	0	1322	0	
Flt Permitted		0.940			0.769		0.950				0.974		
Satd. Flow (perm)	0	2683	0	0	1930	0	1532	0	1615	0	1214	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		74			25			164	109		12		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		372			296			334			515		
Travel Time (s)		8.5			6.7			7.6			11.7		
Confl. Peds. (#/hr)	29		173	173		29	32		31	31		32	
Confl. Bikes (#/hr)			18			13							
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95	0.89	0.89	0.89	
Heavy Vehicles (%)	26%	17%	13%	0%	49%	50%	11%	0%	0%	24%	67%	7%	
Adj. Flow (vph)	23	432	181	45	119	29	148	0	16	38	17	17	
Shared Lane Traffic (%)									10%				
Lane Group Flow (vph)	0	636	0	0	193	0	148	2	14	0	72	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	48.0	48.0		48.0	48.0		20.0		20.0	11.0	11.0		21.0
Total Split (%)	48.0%	48.0%		48.0%	48.0%		20.0%		20.0%	11.0%	11.0%		21%
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	Lead		Lead		Lead	Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Act Effct Green (s)		61.6			61.6		13.3	0.0	13.3		10.1		
Actuated g/C Ratio		0.62			0.62		0.13	0.00	0.13		0.10		
v/c Ratio		0.38			0.16		0.69	0.01	0.05		0.50		
Control Delay		10.2			8.8		56.6	0.0	0.3		47.3		
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0		
Total Delay		10.2			8.8		56.6	0.0	0.3		47.3		
LOS		B			A		E	A	A		D		
Approach Delay		10.2			8.8			51.1			47.3		
Approach LOS		B			A			D			D		
Stops (vph)		257			64		130	0	0		50		
Fuel Used(gal)		4			1		3	0	0		1		
CO Emissions (g/hr)		305			74		190	0	2		80		
NOx Emissions (g/hr)		59			14		37	0	0		16		
VOC Emissions (g/hr)		71			17		44	0	1		19		
Dilemma Vehicles (#)		0			0		0	0	0		0		
Queue Length 50th (ft)		86			22		91	0	0		37		
Queue Length 95th (ft)		154			47		148	0	0		79		
Internal Link Dist (ft)		292			216			254			435		
Turn Bay Length (ft)													
Base Capacity (vph)		1681			1198		258	164	348		143		
Starvation Cap Reductn		0			0		0	0	0		0		
Spillback Cap Reductn		0			0		0	0	0		0		
Storage Cap Reductn		0			0		0	0	0		0		
Reduced v/c Ratio		0.38			0.16		0.57	0.01	0.04		0.50		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 12: D Street & Seaport Boulevard

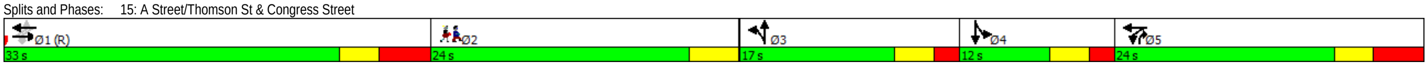


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	4	323	126	217	409	7	142	11	88	17	6	15	
Future Volume (vph)	4	323	126	217	409	7	142	11	88	17	6	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12	
Storage Length (ft)	100		100	0		0	0		100	0		0	
Storage Lanes	1		1	1		0	0		1	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	0.95	0.95	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		1.00								
Frt			0.850		0.997				0.850		0.947		
Flt Protected		0.999		0.950				0.956			0.978		
Satd. Flow (prot)	0	2990	1364	1570	1616	0	0	1775	1425	0	1550	0	
Flt Permitted		0.750		0.517				0.956			0.978		
Satd. Flow (perm)	0	2245	1307	855	1616	0	0	1775	1425	0	1550	0	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					1				179		17		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		191			478			213			710		
Travel Time (s)		4.3			10.9			4.8			16.1		
Confl. Bikes (#/hr)			14			8			2				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97	0.88	0.88	0.88	
Heavy Vehicles (%)	0%	5%	3%	0%	2%	0%	4%	9%	2%	0%	0%	40%	
Adj. Flow (vph)	4	333	130	236	445	8	146	11	91	19	7	17	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	337	130	236	453	0	0	157	91	0	43	0	
Turn Type	Perm	NA	Perm	D.P+P	NA		Split	NA	Over	Split	NA		
Protected Phases		1		5	1 5		3	3	5	4	4		2
Permitted Phases	1		1	1									
Detector Phase	1	1	1	5	1 5		3	3	5	4	4		
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	6.0			8.0	8.0	6.0	6.0	6.0		8.0
Minimum Split (s)	19.0	19.0	19.0	14.0			14.0	14.0	14.0	12.0	12.0		24.0
Total Split (s)	33.0	33.0	33.0	24.0			17.0	17.0	24.0	12.0	12.0		24.0
Total Split (%)	30.0%	30.0%	30.0%	21.8%			15.5%	15.5%	21.8%	10.9%	10.9%		22%
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0		4.0
All-Red Time (s)	4.0	4.0	4.0	4.0			2.0	2.0	4.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0	0.0	0.0				-1.0	0.0		-1.0		
Total Lost Time (s)		7.0	7.0	7.0				4.0	7.0		4.0		
Lead/Lag	Lead	Lead	Lead				Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	None			Max	Max	None	Max	Max		None
Act Effct Green (s)		30.8	30.8	47.8	54.8			13.0	17.0		8.0		
Actuated g/C Ratio		0.28	0.28	0.43	0.50			0.12	0.15		0.07		
v/c Ratio		0.54	0.36	0.49	0.56			0.75	0.25		0.34		
Control Delay		37.3	36.8	34.1	36.8			69.7	1.6		40.8		
Queue Delay		0.0	0.0	0.0	1.8			0.0	0.0		0.0		
Total Delay		37.3	36.8	34.1	38.6			69.7	1.6		40.8		
LOS		D	D	C	D			E	A		D		
Approach Delay		37.1			37.1			44.7			40.8		
Approach LOS		D			D			D			D		
Stops (vph)		242	88	202	347			137	0		26		
Fuel Used(gal)		4	2	3	7			3	0		1		
CO Emissions (g/hr)		301	113	240	461			221	12		47		
NOx Emissions (g/hr)		59	22	47	90			43	2		9		
VOC Emissions (g/hr)		70	26	56	107			51	3		11		
Dilemma Vehicles (#)		0	0	0	0			0	0		0		
Queue Length 50th (ft)		100	67	155	302			109	0		18		
Queue Length 95th (ft)		138	109	249	441			#211	0		53		
Internal Link Dist (ft)		111			398			133			630		
Turn Bay Length (ft)			100						100				
Base Capacity (vph)		628	365	481	805			209	371		128		
Starvation Cap Reductn		0	0	0	201			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		0.54	0.36	0.49	0.75			0.75	0.25		0.34		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 38.5 Intersection LOS: D
Intersection Capacity Utilization 65.5% 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: 15: A Street/Thomson St & Congress Street



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↑↱		↰	↱			↰	↱
Traffic Volume (vph)	37	215	149	17	123	496	120	89	113	54	37	57	33
Future Volume (vph)	37	215	149	17	123	496	120	89	113	54	37	57	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0		150		0	0		0	0		125
Storage Lanes	0		1		1		0	1		0	0		1
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	1.00	1.00	1.00	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	0.77		0.83	0.93		0.91	0.98			0.98	
Frt			0.850			0.971			0.952				0.850
Flt Protected		0.993			0.950			0.950				0.981	
Satd. Flow (prot)	0	1602	1454	0	1624	2654	0	1841	1462	0	0	1510	1405
Flt Permitted		0.845			0.542			0.950				0.981	
Satd. Flow (perm)	0	1348	1114	0	767	2654	0	1674	1462	0	0	1487	1405
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			166			31			20				89
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		478				521			204			912	
Travel Time (s)		10.9				11.8			4.6			20.7	
Confl. Peds. (#/hr)	103		69	36	69		103	64		36	36		64
Confl. Bikes (#/hr)			9				8			2			
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.94	0.94	0.94	0.88	0.88	0.88
Heavy Vehicles (%)	0%	7%	0%	0%	0%	5%	8%	0%	7%	2%	11%	5%	0%
Parking (#/hr)						0	0						
Adj. Flow (vph)	41	239	166	19	138	557	135	95	120	57	42	65	38
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	280	166	0	157	692	0	95	177	0	0	107	38
Turn Type	Perm	NA	Perm	Perm	Perm	NA		Split	NA		Split	NA	Prot
Protected Phases		1				1		2	2		3	3	3
Permitted Phases	1		1	1	1								
Detector Phase	1	1	1	1	1	1		2	2		3	3	3
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0		30.0	30.0		33.0	33.0	33.0
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0		30.0	30.0		33.0	33.0	33.0
Total Split (%)	42.7%	42.7%	42.7%	42.7%	42.7%	42.7%		27.3%	27.3%		30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	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		9.0	9.0	9.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			11.0	11.0
Lead/Lag								Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	None
Act Effct Green (s)		58.3	58.3		58.3	58.3		17.3	17.3			13.4	13.4
Actuated g/C Ratio		0.53	0.53		0.53	0.53		0.16	0.16			0.12	0.12
v/c Ratio		0.39	0.25		0.39	0.49		0.33	0.72			0.58	0.15
Control Delay		12.6	3.7		15.1	12.3		42.5	54.5			62.0	3.5
Queue Delay		0.0	0.0		0.0	0.0		0.2	0.0			0.0	0.0
Total Delay		12.6	3.7		15.1	12.3		42.7	54.5			62.0	3.5
LOS		B	A		B	B		D	D			E	A
Approach Delay		9.3				12.8			50.4			46.7	
Approach LOS		A				B			D			D	
Stops (vph)		165	50		59	409		75	137			83	4
Fuel Used(gal)		2	1		1	6		1	3			2	0
CO Emissions (g/hr)		175	66		93	440		93	200			162	20
NOx Emissions (g/hr)		34	13		18	86		18	39			31	4
VOC Emissions (g/hr)		40	15		21	102		21	46			37	5
Dilemma Vehicles (#)		0	0		0	0		0	0			0	0
Queue Length 50th (ft)		27	0		41	95		60	107			71	0
Queue Length 95th (ft)		288	142		91	157		102	170			104	6
Internal Link Dist (ft)		398				441			124			832	
Turn Bay Length (ft)					150								125
Base Capacity (vph)		714	668		406	1421		418	347			302	352
Starvation Cap Reductn		0	0		0	0		0	0			0	0
Spillback Cap Reductn		0	0		0	3		69	0			0	12
Storage Cap Reductn		0	0		0	0		0	0			0	0
Reduced v/c Ratio		0.39	0.25		0.39	0.49		0.27	0.51			0.35	0.11

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 89.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 16: Boston Wharf Road (WSR) & Congress Street

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	20	273	447	35	124	252	52	168	202	146
Future Volume (vph)	20	273	447	35	124	252	52	168	202	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor	0.96		0.99			0.98			0.92	
Frt			0.989				0.850		0.958	
Flt Protected	0.950					0.984			0.965	
Satd. Flow (prot)	1624	3094	3133	0	0	3176	1398	0	2983	0
Flt Permitted	0.376					0.984			0.965	
Satd. Flow (perm)	614	3094	3133	0	0	3108	1398	0	2788	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			7				99			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	82			82	43		12	43		12
Confl. Bikes (#/hr)				12						
Peak Hour Factor	0.89	0.89	0.87	0.87	0.91	0.91	0.91	0.90	0.90	0.90
Heavy Vehicles (%)	0%	5%	5%	3%	0%	1%	4%	0%	1%	4%
Adj. Flow (vph)	22	307	514	40	136	277	57	187	224	162
Shared Lane Traffic (%)										
Lane Group Flow (vph)	22	307	554	0	0	413	57	0	573	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Perm	Prot	
Protected Phases		1	1		2	2	2		3	
Permitted Phases	1							3		
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	32.0	32.0	32.0		30.0	30.0	30.0	33.0	33.0	
Total Split (s)	34.0	34.0	34.0		30.0	30.0	30.0	46.0	46.0	
Total Split (%)	30.9%	30.9%	30.9%		27.3%	27.3%	27.3%	41.8%	41.8%	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0		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	
Total Lost Time (s)	5.0	5.0	5.0			4.0	4.0		4.0	
Lead/Lag					Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)	46.9	46.9	46.9			20.6	20.6		29.5	
Actuated g/C Ratio	0.43	0.43	0.43			0.19	0.19		0.27	
v/c Ratio	0.08	0.23	0.41			0.70	0.17		0.77	
Control Delay	12.2	11.3	19.5			48.0	2.5		44.0	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	12.2	11.3	19.5			48.0	2.5		44.0	
LOS	B	B	B			D	A		D	
Approach Delay		11.3	19.5			42.4			44.0	
Approach LOS		B	B			D			D	
Stops (vph)	6	85	249			340	2		459	
Fuel Used(gal)	0	2	5			6	0		8	
CO Emissions (g/hr)	11	154	364			424	8		557	
NOx Emissions (g/hr)	2	30	71			83	1		108	
VOC Emissions (g/hr)	3	36	84			98	2		129	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	5	37	113			144	0		192	
Queue Length 95th (ft)	m14	54	144			188	9		234	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	261	1320	1340			750	406		1064	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.08	0.23	0.41			0.55	0.14		0.54	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 58 (53%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 31.0 — Intersection LOS: C
Intersection Capacity Utilization 61.9% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	303	53	116	1	260	212	79	235	232	272	10	43	27
Future Volume (vph)	303	53	116	1	260	212	79	235	232	272	10	43	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	14	12	12	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)	25				25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.91			0.93	0.94						0.98	0.98
Frt			0.850			0.972				0.850			0.850
Flt Protected		0.959			0.950	0.985		0.950				0.991	
Satd. Flow (prot)	0	2978	1398	0	1382	2620	0	1770	1754	1346	0	3112	1232
Flt Permitted		0.959			0.950	0.985		0.950				0.848	
Satd. Flow (perm)	0	2709	1398	0	1291	2567	0	1770	1754	1346	0	2615	1210
Right Turn on Red			No				Yes			Yes			Yes
Satd. Flow (RTOR)						22				280			109
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		509				995			220			498	
Travel Time (s)		11.6				22.6			5.0			11.3	
Confl. Peds. (#/hr)	126		37		37		126				45		2
Confl. Bikes (#/hr)							1						1
Peak Hour Factor	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.97	0.97	0.97	0.75	0.75	0.75
Heavy Vehicles (%)	3%	14%	4%	0%	7%	9%	14%	4%	4%	8%	0%	0%	14%
Adj. Flow (vph)	322	56	123	1	277	226	84	242	239	280	13	57	36
Shared Lane Traffic (%)					50%								
Lane Group Flow (vph)	0	378	123	0	139	449	0	242	239	280	0	70	36
Turn Type	Split	NA	Prot	Split	Split	NA		Prot	NA	Prot	Perm	NA	custom
Protected Phases	2	2	2	1	1	1		3	3 4	3 4		4	4
Permitted Phases											4		2
Detector Phase	2	2	2	1	1	1		3	3 4	3 4	4	4	4
Switch Phase													
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	8.0
Minimum Split (s)	19.0	19.0	19.0	31.0	31.0	31.0		16.0			19.0	19.0	19.0
Total Split (s)	31.0	31.0	31.0	32.0	32.0	32.0		28.0			19.0	19.0	19.0
Total Split (%)	28.2%	28.2%	28.2%	29.1%	29.1%	29.1%		25.5%			17.3%	17.3%	17.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	4.0	4.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0				-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0				5.0	5.0
Lead/Lag	Lead	Lead	Lead					Lag					
Lead-Lag Optimize?													
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max		Max			None	None	None
Act Effct Green (s)		26.0	26.0		30.4	30.4		23.0	38.6	38.6		10.6	36.6
Actuated g/C Ratio		0.24	0.24		0.28	0.28		0.21	0.35	0.35		0.10	0.33
v/c Ratio		0.87dl	0.37		0.36	0.61		0.65	0.39	0.43		0.28	0.08
Control Delay		46.6	46.6		22.4	23.7		49.3	28.9	5.1		71.4	5.2
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		46.6	46.6		22.4	23.7		49.3	28.9	5.1		71.4	5.2
LOS		D	D		C	C		D	C	A		E	A
Approach Delay		46.6				23.4			26.6			48.9	
Approach LOS		D				C			C			D	
Stops (vph)		289	91		66	300		213	170	25		52	10
Fuel Used(gal)		6	2		2	7		4	3	1		1	0
CO Emissions (g/hr)		446	144		138	487		275	189	62		87	13
NOx Emissions (g/hr)		87	28		27	95		54	37	12		17	3
VOC Emissions (g/hr)		103	33		32	113		64	44	14		20	3
Dilemma Vehicles (#)		0	0		0	0		0	0	0		0	0
Queue Length 50th (ft)		121	69		41	62		158	127	0		27	4
Queue Length 95th (ft)		165	122		80	199		244	190	54		44	m16
Internal Link Dist (ft)		429				915			140			418	
Turn Bay Length (ft)			200		250								125
Base Capacity (vph)		703	330		381	740		370	669	687		332	512
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		0.54	0.37		0.36	0.61		0.65	0.36	0.41		0.21	0.07

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 32.0 — Intersection LOS: C
Intersection Capacity Utilization 78.4% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: B Street & Congress Street

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	9	73	239	258	63	79	19	2	314	96	22	2	19	131	38
Future Volume (vph)	9	73	239	258	63	79	19	2	314	96	22	2	19	131	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.93			0.93			0.56	0.98				0.94	
Frt			0.989	0.850		0.983				0.972				0.970	
Flt Protected			0.988			0.981			0.950					0.995	
Satd. Flow (prot)	0	0	2850	1314	0	2859	0	0	2902	1489	0	0	0	2975	0
Flt Permitted			0.988			0.981			0.950					0.995	
Satd. Flow (perm)	0	0	2722	1314	0	2674	0	0	1638	1489	0	0	0	2931	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						11				10				24	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				334	
Travel Time (s)			22.6			7.3				7.2				7.6	
Confl. Peds. (#/hr)	56	26		90	90		26	90	56		57	26	57		56
Confl. Bikes (#/hr)				8			7				6				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	4%	2%	23%	0%	0%	5%	9%	9%	0%	0%	11%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	9	75	246	266	71	89	21	2	341	104	24	2	20	141	41
Shared Lane Traffic (%)				10%											
Lane Group Flow (vph)	0	0	357	239	0	181	0	0	343	128	0	0	0	204	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Split	Split	NA		Split	Split	NA	
Protected Phases		1	1	1	4	4		2	2	2		3	3	3	
Permitted Phases	1														
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0	30.0		22.0	22.0	22.0	
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%	27.3%		20.0%	20.0%	20.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
Lead/Lag								Lead	Lead	Lead		Lag	Lag	Lag	
Lead-Lag Optimize?															
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Act Effct Green (s)			33.9	33.9		12.1			23.0	23.0				16.0	
Actuated g/C Ratio			0.31	0.31		0.11			0.21	0.21				0.15	
v/c Ratio			0.41	0.59		0.56			0.57	0.40				0.45	
Control Delay			31.5	38.9		50.5			27.5	22.3				41.3	
Queue Delay			0.0	0.0		0.0			0.0	0.0				0.0	
Total Delay			31.5	38.9		50.5			27.5	22.3				41.3	
LOS			C	D		D			C	C				D	
Approach Delay			34.4			50.5				26.1				41.3	
Approach LOS			C			D				C				D	
Stops (vph)			250	188		141			282	111				151	
Fuel Used(gal)			6	5		3			4	1				3	
CO Emissions (g/hr)			439	327		198			287	101				205	
NOx Emissions (g/hr)			85	64		39			56	20				40	
VOC Emissions (g/hr)			102	76		46			67	23				47	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			100	141		60			119	75				61	
Queue Length 95th (ft)			149	254		96			158	127				99	
Internal Link Dist (ft)			915			239				237				254	
Turn Bay Length (ft)				150											
Base Capacity (vph)			879	405		347			606	319				453	
Starvation Cap Reductn			0	0		0			0	0				0	
Spillback Cap Reductn			0	0		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.41	0.59		0.52			0.57	0.40				0.45	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 34.7 — Intersection LOS: C
Intersection Capacity Utilization 66.7% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 19: D Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	42	0	0	32	0	0	434	0	0	454	0	
Future Volume (vph)	0	42	0	0	32	0	0	434	0	0	454	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt													
Flt Protected													
Satd. Flow (prot)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Flt Permitted													
Satd. Flow (perm)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)													
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									85				
Confl. Bikes (#/hr)									39				
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	7%	0%	0%	8%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	44	0	0	36	0	0	472	0	0	473	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	44	0	0	36	0	0	472	0	0	473	0	
Turn Type		NA			NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		33.0		33.0	33.0			66.0					11.0
Total Split (%)		30.0%		30.0%	30.0%			60.0%					10%
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Recall Mode		None		None	None			C-Max					Max
Act Effct Green (s)		11.7			11.7			81.1			92.9		
Actuated g/C Ratio		0.11			0.11			0.74			0.84		
v/c Ratio		0.46			0.38			0.14			0.18		
Control Delay		60.5			55.7			6.2			3.4		
Queue Delay		0.0			0.0			0.0			0.3		
Total Delay		60.5			55.7			6.2			3.7		
LOS		E			E			A			A		
Approach Delay		60.5			55.7			6.2			3.7		
Approach LOS		E			E			A			A		
Stops (vph)		39			30			164			167		
Fuel Used(gal)		1			1			2			2		
CO Emissions (g/hr)		60			42			171			165		
NOx Emissions (g/hr)		12			8			33			32		
VOC Emissions (g/hr)		14			10			40			38		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		30			24			31			43		
Queue Length 95th (ft)		64			55			83			92		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		232			232			3324			2626		
Starvation Cap Reductn		0			0			0			1535		
Spillback Cap Reductn		0			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.19			0.16			0.14			0.43		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 71 (65%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 9.1 Intersection LOS: A
Intersection Capacity Utilization 30.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 20: D Street & Transitway

Ø1 (R)	Ø2	Ø3
66 s	11 s	33 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations			↰	↑↑	↑↱		
Traffic Volume (vph)	0	0	202	434	325	129	
Future Volume (vph)	0	0	202	434	325	129	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.94		0.97		
Frt					0.958		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1584	3036	2869	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1496	3036	2869	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					60		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			62			62	
Confl. Bikes (#/hr)						4	
Peak Hour Factor	0.25	0.25	0.93	0.93	0.96	0.96	
Heavy Vehicles (%)	0%	0%	6%	7%	9%	8%	
Adj. Flow (vph)	0	0	217	467	339	134	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	217	467	473	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Recall Mode			Max		C-Max		None
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.47	0.16	0.29		
Control Delay			40.2	1.0	9.1		
Queue Delay			1.6	0.0	0.3		
Total Delay			41.8	1.0	9.4		
LOS			D	A	A		
Approach Delay				14.0	9.4		
Approach LOS				B	A		
Stops (vph)			146	19	198		
Fuel Used(gal)			3	1	3		
CO Emissions (g/hr)			205	84	208		
NOx Emissions (g/hr)			40	16	40		
VOC Emissions (g/hr)			47	19	48		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			112	0	41		
Queue Length 95th (ft)			200	38	91		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			460	2854	1653		
Starvation Cap Reductn			117	341	605		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.63	0.19	0.45		

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: 0.47
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 36.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 21: D Street & I-90 Ramp

Ø1 (R)	Ø2	Ø3
45 s	28 s	37 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	475	55	29	354	408	122	104	25	183	56	86
Future Volume (vph)	124	475	55	29	354	408	122	104	25	183	56	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.99				0.93	0.97	0.98		0.95	0.96	
Frt		0.984				0.850		0.971			0.940	
Flt Protected	0.950			0.950			0.950			0.950	0.984	
Satd. Flow (prot)	1555	2937	0	1577	1656	1584	1608	2752	0	1374	2625	0
Flt Permitted	0.340			0.118			0.950			0.950	0.984	
Satd. Flow (perm)	544	2937	0	196	1656	1471	1560	2752	0	1301	2578	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		14						23			89	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	33		31	31		33	25		37	37		25
Confl. Bikes (#/hr)			9			15			32			2
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	1%	12%	9%	3%	17%	4%	1%	27%	28%	4%	30%	4%
Parking (#/hr)			0						0			
Adj. Flow (vph)	128	490	57	30	369	425	128	109	26	189	58	89
Shared Lane Traffic (%)										39%		
Lane Group Flow (vph)	128	547	0	30	369	425	128	135	0	115	221	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	15.0			40.0	40.0	28.0	27.0	27.0		28.0	28.0	
Total Split (%)	13.6%			36.4%	36.4%	25.5%	24.5%	24.5%		25.5%	25.5%	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Act Effct Green (s)	41.9	48.9		33.9	33.9	56.0	21.0	21.0		21.1	21.1	
Actuated g/C Ratio	0.38	0.44		0.31	0.31	0.51	0.19	0.19		0.19	0.19	
v/c Ratio	0.46	0.42		0.50	0.72	0.55	0.42	0.25		0.44	0.38	
Control Delay	25.7	19.3		53.2	35.3	9.7	44.0	32.6		16.7	7.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	25.7	19.3		53.2	35.3	9.7	44.0	32.6		16.7	7.2	
LOS	C	B		D	D	A	D	C		B	A	
Approach Delay		20.5			22.7			38.1			10.4	
Approach LOS		C			C			D			B	
Stops (vph)	62	317		18	247	120	106	86		82	93	
Fuel Used(gal)	2	6		1	6	3	2	2		1	1	
CO Emissions (g/hr)	112	452		38	385	232	161	139		76	92	
NOx Emissions (g/hr)	22	88		7	75	45	31	27		15	18	
VOC Emissions (g/hr)	26	105		9	89	54	37	32		18	21	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	28	64		11	136	75	80	35		49	0	
Queue Length 95th (ft)	83	139		m21	206	25	140	64		47	14	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	280	1313		60	509	782	306	543		274	596	
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	0.46	0.42		0.50	0.72	0.54	0.42	0.25		0.42	0.37	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 30 (27%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 82.5% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: D Street & Summer Street

Ø1 (R)	Ø2	Ø3	Ø4
40 s	28 s	27 s	15 s

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	7	160	2	12	276
Future Volume (Veh/h)	1	7	160	2	12	276
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.67	0.67	0.90	0.90	0.92	0.92
Hourly flow rate (vph)	1	10	178	2	13	300
Pedestrians	183			115	137	
Lane Width (ft)	11.0			11.0	11.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	14			9	10	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			148		679	253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			148		679	253
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		95	53
cM capacity (veh/h)			1284		279	642

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	1	10	180	313
Volume Left	0	0	178	13
Volume Right	0	10	0	300
cSH	1700	1700	1284	609
Volume to Capacity	0.00	0.01	0.14	0.51
Queue Length 95th (ft)	0	0	12	74
Control Delay (s)	0.0	0.0	8.2	17.0
Lane LOS			A	C
Approach Delay (s)	0.0		8.2	17.0
Approach LOS				C

Intersection Summary			
Average Delay	13.5		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	179	97	128	40	6	33
Future Volume (Veh/h)	1	179	97	128	40	6	33
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.88	0.88	0.89	0.89
Hourly flow rate (vph)	0	206	111	145	45	7	37
Pedestrians						412	
Lane Width (ft)						11.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						31	
Right turn flare (veh)							
Median type			None	None			
Median storage veh)							
Upstream signal (ft)				1145			
pX, platoon unblocked	0.00						
vC, conflicting volume	0	602				1102	580
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	602				1102	580
tC, single (s)	0.0	4.1				6.4	6.4
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.5
p0 queue free %	0	69				94	89
cM capacity (veh/h)	0	662				111	329

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	317	190	44
Volume Left	206	0	7
Volume Right	0	45	37
cSH	662	1700	251
Volume to Capacity	0.31	0.11	0.18
Queue Length 95th (ft)	33	0	16
Control Delay (s)	9.9	0.0	22.4
Lane LOS	A		C
Approach Delay (s)	9.9	0.0	22.4
Approach LOS			C

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	90	133	44	14	35
Future Volume (Veh/h)	13	90	133	44	14	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.82	0.82
Hourly flow rate (vph)	15	102	151	50	17	43
Pedestrians					291	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					22	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			843			
pX, platoon unblocked						
vC, conflicting volume	492				599	467
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	492				599	467
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	98				95	91
cM capacity (veh/h)	841				340	462

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	117	201	60
Volume Left	15	0	17
Volume Right	0	50	43
cSH	841	1700	419
Volume to Capacity	0.02	0.12	0.14
Queue Length 95th (ft)	1	0	12
Control Delay (s)	1.4	0.0	15.0
Lane LOS	A		C
Approach Delay (s)	1.4	0.0	15.0
Approach LOS			C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	22	81	166	158	28	10
Future Volume (Veh/h)	1	22	81	166	158	28	10
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.97	0.97	0.79	0.79
Hourly flow rate (vph)	0	25	93	171	163	35	13
Pedestrians						192	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						16	
Right turn flare (veh)							
Median type			None	None			
Median storage veh)							
Upstream signal (ft)				640			
pX, platoon unblocked	0.00						
vC, conflicting volume	0	526				588	444
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	526				588	444
tC, single (s)	0.0	4.1				6.8	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.9	3.3
p0 queue free %	0	97				90	97
cM capacity (veh/h)	0	883				339	519

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	118	334	48
Volume Left	25	0	35
Volume Right	0	163	13
cSH	883	1700	374
Volume to Capacity	0.03	0.20	0.13
Queue Length 95th (ft)	2	0	11
Control Delay (s)	2.2	0.0	16.0
Lane LOS	A		C
Approach Delay (s)	2.2	0.0	16.0
Approach LOS			C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (veh/h)	1	1	107	13	318	37	1	5
Future Volume (Veh/h)	1	1	107	13	318	37	1	5
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.96	0.96	0.96	0.50	0.50
Hourly flow rate (vph)	0	1	122	0	331	39	2	10
Pedestrians			61		45		134	
Lane Width (ft)			12.0		12.0		12.0	
Walking Speed (ft/s)			4.0		4.0		4.0	
Percent Blockage			5		4		11	
Right turn flare (veh)								
Median type			None		None			
Median storage veh)								
Upstream signal (ft)					278			
pX, platoon unblocked	0.00			0.00				
vC, conflicting volume	0	504		0			654	546
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	504		0			654	546
tC, single (s)	0.0	4.1		0.0			6.4	6.2
tC, 2 stage (s)								
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	100		0			99	98
cM capacity (veh/h)	0	951		0			371	457

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	123	370	12
Volume Left	1	0	2
Volume Right	0	39	10
cSH	951	1700	440
Volume to Capacity	0.00	0.22	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.1	0.0	13.4
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	13.4
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	2	590	70	1	22	239	0	0
Future Volume (Veh/h)	2	590	70	1	22	239	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.92	0.92
Hourly flow rate (vph)	0	628	74	0	24	263	0	0
Pedestrians							143	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		591				372		
pX, platoon unblocked	0.00			0.00	0.88		0.88	0.88
vC, conflicting volume	0			0	845		988	494
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	540		702	139
tC, single (s)	0.0			0.0	4.4		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.3		3.5	3.3
p0 queue free %	0			0	97		100	100
cM capacity (veh/h)	0			0	829		320	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	419	283	112	175
Volume Left	0	0	24	0
Volume Right	0	74	0	0
cSH	1700	1700	829	1700
Volume to Capacity	0.25	0.17	0.03	0.10
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.0	0.0	2.3	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.9	
Approach LOS				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	366	0	11	340	137	2	0	2	95	0	37
Future Volume (Veh/h)	45	366	0	11	340	137	2	0	2	95	0	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	1.00	1.00	1.00	0.94	0.94	0.94
Hourly flow rate (vph)	46	377	0	11	347	140	2	0	2	101	0	39
Pedestrians											738	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											61	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.85			0.87			0.91	0.91	0.87	0.91	0.91	0.85
vC, conflicting volume	1225			377			947	1716	377	1648	1646	1155
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1176			216			584	1428	216	1353	1351	1093
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			99			98	100	100	0	100	55
cM capacity (veh/h)	189			1195			89	36	725	19	40	86

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	423	498	4	140
Volume Left	46	11	2	101
Volume Right	0	140	2	39
cSH	189	1195	159	24
Volume to Capacity	0.24	0.01	0.03	5.81
Queue Length 95th (ft)	23	1	2	Err
Control Delay (s)	11.6	0.3	28.2	Err
Lane LOS	B	A	D	F
Approach Delay (s)	11.6	0.3	28.2	Err
Approach LOS			D	F

Intersection Summary				
Average Delay		1319.3		
Intersection Capacity Utilization		60.5%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	38	425	3	466	97	25	22
Future Volume (Veh/h)	38	425	3	466	97	25	22
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.92	0.90	0.90
Hourly flow rate (vph)	39	438	0	507	105	28	24
Pedestrians						485	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						40	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)		1094		191			
pX, platoon unblocked	0.81		0.00			0.81	0.81
vC, conflicting volume	1097		0			1560	1044
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1000		0			1568	935
tC, single (s)	4.2		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.3		0.0			3.5	3.3
p0 queue free %	88		0			45	84
cM capacity (veh/h)	316		0			51	153

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	477	612	52
Volume Left	39	0	28
Volume Right	0	105	24
cSH	316	1700	74
Volume to Capacity	0.12	0.36	0.71
Queue Length 95th (ft)	10	0	82
Control Delay (s)	4.2	0.0	129.3
Lane LOS	A		F
Approach Delay (s)	4.2	0.0	129.3
Approach LOS			F

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	0	5	299	4	6	0	188	0	24	0	0	0	
Future Volume (vph)	0	5	299	4	6	0	188	0	24	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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		0.99			0.91					
Frt			0.850					0.850					
Flt Protected					0.980		0.950						
Satd. Flow (prot)	0	1900	1615	0	1862	0	1787	1463	0	0	1900	0	
Flt Permitted					0.867		0.950						
Satd. Flow (perm)	0	1900	1588	0	1637	0	1787	1463	0	0	1900	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			311					1007					
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		278			143			338			266		
Travel Time (s)		6.3			3.3			7.7			6.0		
Confl. Peds. (#/hr)	93		8	8		93			84	84			
Peak Hour Factor	0.96	0.96	0.96	0.50	0.50	0.50	0.87	0.87	0.87	0.25	0.25	0.25	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	0	5	311	8	12	0	216	0	28	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	5	311	0	20	0	216	28	0	0	0	0	
Turn Type		NA	pm+ov	Perm	NA		Prot	NA					
Protected Phases		4	1		4		1	1 2			2		3
Permitted Phases	4		4	4						2			
Detector Phase	4	4	1	4	4		1	1 2		2	2		
Switch Phase													
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0		8.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0			13.0	13.0		22.0
Total Split (s)	22.0	22.0	44.0	22.0	22.0		44.0			22.0	22.0		22.0
Total Split (%)	20.0%	20.0%	40.0%	20.0%	20.0%		40.0%			20.0%	20.0%		20%
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)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0		1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0		
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0		
Lead/Lag	Lag	Lag	Lead	Lag	Lag		Lead			Lag	Lag		Lead
Lead-Lag Optimize?													
Recall Mode	None	None	C-Max	None	None		C-Max			None	None		None
Act Effct Green (s)		8.0	96.2		8.0		91.4	99.2					
Actuated g/C Ratio		0.07	0.87		0.07		0.83	0.90					
v/c Ratio		0.04	0.21		0.17		0.15	0.02					
Control Delay		50.2	0.5		51.4		1.0	0.0					
Queue Delay		0.0	0.0		0.0		0.2	0.0					
Total Delay		50.2	0.5		51.4		1.2	0.0					
LOS		D	A		D		A	A					
Approach Delay		1.3			51.4			1.1					
Approach LOS		A			D			A					
Stops (vph)		7	7		11		8	0					
Fuel Used(gal)		0	1		0		1	0					
CO Emissions (g/hr)		7	50		12		40	4					
NOx Emissions (g/hr)		1	10		2		8	1					
VOC Emissions (g/hr)		2	12		3		9	1					
Dilemma Vehicles (#)		0	0		0		0	0					
Queue Length 50th (ft)		4	0		14		6	0					
Queue Length 95th (ft)		16	12		21		12	m0					
Internal Link Dist (ft)		198			63			258			186		
Turn Bay Length (ft)													
Base Capacity (vph)		293	1450		252		1485	1440					
Starvation Cap Reductn		0	0		0		705	0					
Spillback Cap Reductn		0	0		0		0	0					
Storage Cap Reductn		0	0		0		0	0					
Reduced v/c Ratio		0.02	0.21		0.08		0.28	0.02					

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.21
Intersection Signal Delay: 2.9 Intersection LOS: A
Intersection Capacity Utilization 34.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

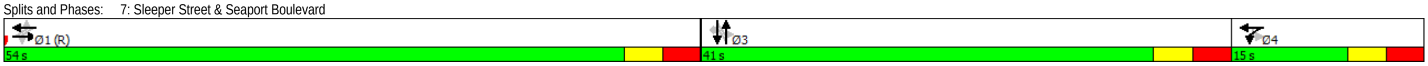
Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	51	681	94	2	39	610	44	146	1	59	22	44	264
Future Volume (vph)	51	681	94	2	39	610	44	146	1	59	22	44	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	0		125		125		0	0		0	0		100
Storage Lanes	0		0		1		0	0		0	0		0
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	0.95	0.95	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		0.94				0.97			0.81				0.81
Frt		0.983				0.990			0.961				0.850
Flt Protected		0.997			0.950				0.966			0.984	
Satd. Flow (prot)	0	2836	0	0	1624	3056	0	0	1265	0	0	1627	1405
Flt Permitted		0.553			0.226				0.746			0.869	
Satd. Flow (perm)	0	1573	0	0	386	3056	0	0	862	0	0	1436	1136
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		17				12			20				142
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		1029				308			346			339	
Travel Time (s)		23.4				7.0			7.9			7.7	
Confl. Peds. (#/hr)	118		171	87	171		118	55		87	87		55
Confl. Bikes (#/hr)			30				22			4			3
Peak Hour Factor	0.97	0.97	0.97	0.91	0.91	0.91	0.91	0.83	0.83	0.83	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Parking (#/hr)							0		0	0			
Adj. Flow (vph)	53	702	97	2	43	670	48	176	1	71	23	46	275
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	852	0	0	45	718	0	0	248	0	0	69	275
Turn Type	Perm	NA		custom	D.P+P	NA		Perm	NA		Perm	NA	Perm
Protected Phases		1			4	1 4			3			3	
Permitted Phases	1			4	1			3			3		3
Detector Phase	1	1		4	4	1 4		3	3		3	3	3
Switch Phase													
Minimum Initial (s)	8.0	8.0		4.0	4.0			8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	27.0	27.0		15.0	15.0			18.0	18.0		18.0	18.0	18.0
Total Split (s)	54.0	54.0		15.0	15.0			41.0	41.0		41.0	41.0	41.0
Total Split (%)	49.1%	49.1%		13.6%	13.6%			37.3%	37.3%		37.3%	37.3%	37.3%
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
Total Lost Time (s)		4.0			4.0				4.0			4.0	4.0
Lead/Lag													
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max		None	None			Max	Max		Max	Max	Max
Act Effct Green (s)		50.0			61.0	65.0			37.0			37.0	37.0
Actuated g/C Ratio		0.45			0.55	0.59			0.34			0.34	0.34
v/c Ratio		1.18			0.13	0.40			0.82			0.14	0.58
Control Delay		102.5			14.5	14.7			57.2			24.2	17.2
Queue Delay		0.0			0.0	0.0			0.0			0.0	0.0
Total Delay		102.5			14.5	14.7			57.2			24.2	17.2
LOS		F			B	B			E			C	B
Approach Delay		102.5				14.7			57.2			18.6	
Approach LOS		F				B			E			B	
Stops (vph)		425			18	263			165			43	109
Fuel Used(gal)		26			1	8			5			1	2
CO Emissions (g/hr)		1833			37	581			327			52	155
NOx Emissions (g/hr)		357			7	113			64			10	30
VOC Emissions (g/hr)		425			9	135			76			12	36
Dilemma Vehicles (#)		0			0	0			0			0	0
Queue Length 50th (ft)		~242			10	91			157			33	76
Queue Length 95th (ft)		m#228			41	196			m#244			62	142
Internal Link Dist (ft)		949				228			266			259	
Turn Bay Length (ft)					125								100
Base Capacity (vph)		724			337	1810			303			483	476
Starvation Cap Reductn		0			0	0			0			0	0
Spillback Cap Reductn		0			0	0			0			0	0
Storage Cap Reductn		0			0	0			0			0	0
Reduced v/c Ratio		1.18			0.13	0.40			0.82			0.14	0.58

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 99 (90%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 54.0 Intersection LOS: D
Intersection Capacity Utilization 78.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sleeper Street & Seaport Boulevard



Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø2
Lane Configurations									
Traffic Volume (vph)	2	484	224	22	135	552	93	67	
Future Volume (vph)	2	484	224	22	135	552	93	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	12	11	12	12	
Storage Length (ft)	0		0		100		0	100	
Storage Lanes	0		0		1		2	1	
Taper Length (ft)	25				25		25		
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95	
Ped Bike Factor		0.86			0.89		0.72		
Frt		0.953					0.937		
Flt Protected					0.950		0.972		
Satd. Flow (prot)	0	2529	0	0	1624	3049	2599	0	
Flt Permitted		0.841			0.276		0.972		
Satd. Flow (perm)	0	2127	0	0	419	3049	2161	0	
Right Turn on Red			Yes					Yes	
Satd. Flow (RTOR)		72					72		
Link Speed (mph)		30				30	30		
Link Distance (ft)		655				254	912		
Travel Time (s)		14.9				5.8	20.7		
Confl. Peds. (#/hr)	79		262	84	262		79	84	
Confl. Bikes (#/hr)			22						
Peak Hour Factor	0.96	0.96	0.96	0.91	0.91	0.91	0.93	0.93	
Heavy Vehicles (%)	0%	2%	2%	0%	0%	3%	1%	0%	
Adj. Flow (vph)	2	504	233	24	148	607	100	72	
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	739	0	0	172	607	172	0	
Turn Type	Perm	NA		custom	D.P+P	NA	Prot		
Protected Phases		1			4	1 4	3		2
Permitted Phases	1			4	1				
Detector Phase	1	1		4	4	1 4	3		
Switch Phase									
Minimum Initial (s)	10.0	10.0		8.0	8.0		8.0		8.0
Minimum Split (s)	18.0	18.0		15.0	15.0		15.0		29.0
Total Split (s)	39.0	39.0		22.0	22.0		20.0		29.0
Total Split (%)	35.5%	35.5%		20.0%	20.0%		18.2%		26%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0		4.0
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0		0.0
Lost Time Adjust (s)		-2.0			-1.0		-1.0		
Total Lost Time (s)		4.0			5.0		5.0		
Lead/Lag	Lead	Lead		Lag	Lag		Lead		Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max		Max	Max		Max		None
Act Effct Green (s)		52.4			68.4	74.4	15.0		
Actuated g/C Ratio		0.48			0.62	0.68	0.14		
v/c Ratio		0.70			0.39	0.29	0.41		
Control Delay		13.3			14.0	5.1	40.4		
Queue Delay		0.0			0.0	0.0	0.0		
Total Delay		13.3			14.0	5.1	40.4		
LOS		B			B	A	D		
Approach Delay		13.3				7.1	40.4		
Approach LOS		B				A	D		
Stops (vph)		394			65	144	94		
Fuel Used(gal)		9			1	4	3		
CO Emissions (g/hr)		658			101	251	208		
NOx Emissions (g/hr)		128			20	49	40		
VOC Emissions (g/hr)		153			23	58	48		
Dilemma Vehicles (#)		0			0	0	0		
Queue Length 50th (ft)		52			7	12	36		
Queue Length 95th (ft)		m140			86	66	74		
Internal Link Dist (ft)		575				174	832		
Turn Bay Length (ft)					100				
Base Capacity (vph)		1050			446	2061	416		
Starvation Cap Reductn		0			0	0	0		
Spillback Cap Reductn		0			0	0	0		
Storage Cap Reductn		0			0	0	0		
Reduced v/c Ratio		0.70			0.39	0.29	0.41		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	15	37	521	0	0	534	123	60	52	104	203	0	100
Future Volume (vph)	15	37	521	0	0	534	123	60	52	104	203	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	1		1	1		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.93				0.96		0.95		0.94	0.95	0.94	
Frt						0.972				0.850		0.898	
Flt Protected		0.950						0.950			0.950	0.984	
Satd. Flow (prot)	0	1624	2925	0	0	2874	0	1570	1710	1391	1513	1351	0
Flt Permitted		0.303						0.950			0.950	0.984	
Satd. Flow (perm)	0	483	2925	0	0	2874	0	1497	1710	1307	1444	1331	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						27				119		119	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			263			376			812			338	
Travel Time (s)			6.0			8.5			18.5			7.7	
Confl. Peds. (#/hr)	35	132		180	180		132	35		30	30		35
Confl. Bikes (#/hr)							33						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.98	0.98	0.98	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%	0%	0%	0%	1%	2%	0%	1%
Parking (#/hr)			0	0									
Adj. Flow (vph)	16	41	573	0	0	545	126	63	55	109	216	0	106
Shared Lane Traffic (%)											23%		
Lane Group Flow (vph)	0	57	573	0	0	671	0	63	55	109	166	156	0
Turn Type	D.Pm	D.P+P	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases		7	1 7			1		6	6		5	5	
Permitted Phases	1	1								6			
Detector Phase	1	7	1 7			1		6	6	6	5	5	
Switch Phase													
Minimum Initial (s)	10.0	8.0				10.0		10.0	10.0	10.0	8.0	8.0	
Minimum Split (s)	26.0	13.0				26.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	40.0	15.0				40.0		27.0	27.0	27.0	28.0	28.0	
Total Split (%)	36.4%	13.6%				36.4%		24.5%	24.5%	24.5%	25.5%	25.5%	
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0				-2.0		-2.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)		5.0				3.0		3.0	5.0	3.0	5.0	5.0	
Lead/Lag		Lag						Lead	Lead	Lead			
Lead-Lag Optimize?													
Recall Mode	C-Max	None				C-Max		None	None	None	None	None	
Act Effct Green (s)		63.0	70.0			50.7		12.7	10.7	12.7	16.4	16.4	
Actuated g/C Ratio		0.57	0.64			0.46		0.12	0.10	0.12	0.15	0.15	
v/c Ratio		0.13	0.31			0.50		0.35	0.33	0.43	0.74	0.52	
Control Delay		23.2	22.4			33.6		53.2	56.0	18.6	65.1	20.5	
Queue Delay		0.0	0.0			0.5		0.0	0.0	0.0	3.5	0.9	
Total Delay		23.2	22.4			34.1		53.2	56.0	18.6	68.7	21.4	
LOS		C	C			C		D	E	B	E	C	
Approach Delay			22.5			34.1			37.3			45.7	
Approach LOS			C			C			D			D	
Stops (vph)		38	366			433		46	40	60	147	43	
Fuel Used(gal)		1	6			9		1	1	1	3	1	
CO Emissions (g/hr)		46	454			617		90	80	97	230	86	
NOx Emissions (g/hr)		9	88			120		17	16	19	45	17	
VOC Emissions (g/hr)		11	105			143		21	19	22	53	20	
Dilemma Vehicles (#)		0	0			0		0	0	0	0	0	
Queue Length 50th (ft)		30	157			177		31	29	4	121	24	
Queue Length 95th (ft)		m49	207			218		66	55	29	191	97	
Internal Link Dist (ft)			183			296			732			258	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		425	1847			1339		342	342	378	316	376	
Starvation Cap Reductn		0	0			296		0	0	0	0	0	
Spillback Cap Reductn		0	1			0		0	0	7	82	75	
Storage Cap Reductn		0	0			0		0	0	0	0	0	
Reduced v/c Ratio		0.13	0.31			0.64		0.18	0.16	0.29	0.71	0.52	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

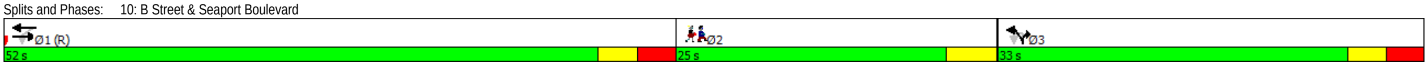
Splits and Phases: 9: East Service Road & Seaport Boulevard

Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR	Ø2
Lane Configurations								
Traffic Volume (vph)	658	170	78	442	2	215	118	
Future Volume (vph)	658	170	78	442	2	215	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	13	12	11	12	
Storage Length (ft)		0	0			125	125	
Storage Lanes		0	0			1	0	
Taper Length (ft)			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.97	1.00	
Ped Bike Factor	0.96			0.99		0.47		
Frt	0.969						0.850	
Flt Protected				0.993		0.950		
Satd. Flow (prot)	2948	0	0	3059	0	3046	1439	
Flt Permitted				0.641		0.950		
Satd. Flow (perm)	2948	0	0	1960	0	1437	1439	
Right Turn on Red		No					No	
Satd. Flow (RTOR)								
Link Speed (mph)	30			30		30		
Link Distance (ft)	392			533		498		
Travel Time (s)	8.9			12.1		11.3		
Confl. Peds. (#/hr)		275	275		275	40	63	
Confl. Bikes (#/hr)		12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97	0.97	
Heavy Vehicles (%)	3%	0%	1%	4%	0%	0%	1%	
Parking (#/hr)				0				
Adj. Flow (vph)	685	177	81	460	2	222	122	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	862	0	0	541	0	224	122	
Turn Type	NA		Perm	NA	Perm	Prot	Prot	
Protected Phases	1			1		3	3	2
Permitted Phases			1		3			
Detector Phase	1		1	1	3	3	3	
Switch Phase								
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0	8.0	8.0
Minimum Split (s)	18.0		18.0	18.0	15.0	15.0	15.0	25.0
Total Split (s)	52.0		52.0	52.0	33.0	33.0	33.0	25.0
Total Split (%)	47.3%		47.3%	47.3%	30.0%	30.0%	30.0%	23%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	3.0		3.0	3.0	3.0	3.0	3.0	0.0
Lost Time Adjust (s)	-2.0			-2.0		0.0	0.0	
Total Lost Time (s)	4.0			4.0		6.0	6.0	
Lead/Lag	Lead		Lead	Lead				Lag
Lead-Lag Optimize?								
Recall Mode	C-Max		C-Max	C-Max	Max	Max	Max	Ped
Act Effct Green (s)	48.0			48.0		27.0	27.0	
Actuated g/C Ratio	0.44			0.44		0.25	0.25	
v/c Ratio	0.67			0.63		0.64	0.35	
Control Delay	37.9			28.3		55.3	45.8	
Queue Delay	3.7			0.0		0.0	0.0	
Total Delay	41.5			28.3		55.3	45.8	
LOS	D			C		E	D	
Approach Delay	41.5			28.3		51.9		
Approach LOS	D			C		D		
Stops (vph)	730			395		212	106	
Fuel Used(gal)	13			8		4	2	
CO Emissions (g/hr)	905			531		311	150	
NOx Emissions (g/hr)	176			103		61	29	
VOC Emissions (g/hr)	210			123		72	35	
Dilemma Vehicles (#)	0			0		0	0	
Queue Length 50th (ft)	280			153		85	79	
Queue Length 95th (ft)	360			215		127	134	
Internal Link Dist (ft)	312			453		418		
Turn Bay Length (ft)						125	125	
Base Capacity (vph)	1286			855		352	353	
Starvation Cap Reductn	326			0		0	0	
Spillback Cap Reductn	0			0		0	0	
Storage Cap Reductn	0			0		0	0	
Reduced v/c Ratio	0.90			0.63		0.64	0.35	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 32 (29%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: B Street & Seaport Boulevard

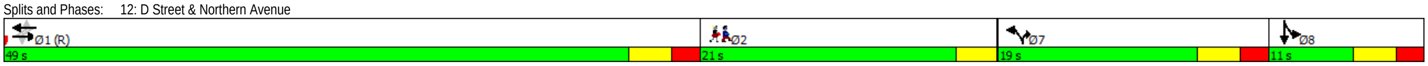


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	22	307	270	40	398	22	142	0	21	14	25	29	
Future Volume (vph)	22	307	270	40	398	22	142	0	21	14	25	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.94			0.99		0.96				0.91		
Frt		0.932			0.993				0.850		0.943		
Flt Protected		0.998			0.996		0.950				0.990		
Satd. Flow (prot)	0	3084	0	0	3434	0	1787	0	1615	0	1680	0	
Flt Permitted		0.928			0.859		0.950				0.990		
Satd. Flow (perm)	0	2864	0	0	2949	0	1708	0	1615	0	1609	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		265			7				109		28		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		376			325			372			366		
Travel Time (s)		8.5			7.4			8.5			8.3		
Confl. Peds. (#/hr)	52		181	181		52	23		41	41		23	
Confl. Bikes (#/hr)			16			31							
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.95	0.95	0.95	0.94	0.94	0.94	
Heavy Vehicles (%)	0%	4%	0%	0%	4%	0%	1%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	23	323	284	41	410	23	149	0	22	15	27	31	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	630	0	0	474	0	149	0	22	0	73	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	49.0	49.0		49.0	49.0		19.0		19.0	11.0	11.0		21.0
Total Split (%)	49.0%	49.0%		49.0%	49.0%		19.0%		19.0%	11.0%	11.0%		21%
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	Lead		Lead		Lead	Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Act Effct Green (s)		66.7			66.7		12.6		12.6		7.8		
Actuated g/C Ratio		0.67			0.67		0.13		0.13		0.08		
v/c Ratio		0.32			0.24		0.66		0.07		0.46		
Control Delay		5.3			8.2		55.2		0.5		38.7		
Queue Delay		0.0			0.0		0.0		0.0		0.0		
Total Delay		5.3			8.2		55.2		0.5		38.7		
LOS		A			A		E		A		D		
Approach Delay		5.3			8.2			48.2			38.7		
Approach LOS		A			A			D			D		
Stops (vph)		146			180		131		0		43		
Fuel Used(gal)		3			3		3		0		1		
CO Emissions (g/hr)		224			205		191		4		68		
NOx Emissions (g/hr)		44			40		37		1		13		
VOC Emissions (g/hr)		52			47		44		1		16		
Dilemma Vehicles (#)		0			0		0		0		0		
Queue Length 50th (ft)		44			58		92		0		28		
Queue Length 95th (ft)		92			106		148		0		70		
Internal Link Dist (ft)		296			245			292			286		
Turn Bay Length (ft)													
Base Capacity (vph)		1999			1970		266		332		157		
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		0.32			0.24		0.56		0.07		0.46		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 47 (47%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 12: D Street & Northern Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	1	396	132	124	306	10	128	8	151	15	5	7	
Future Volume (vph)	1	396	132	124	306	10	128	8	151	15	5	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12	
Storage Length (ft)	100		100	0		0	0		100	0		0	
Storage Lanes	1		1	1		0	0		1	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	0.95	0.95	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	0.80	0.93	0.99			0.52			0.76		
Frt			0.850		0.995				0.850		0.966		
Flt Protected				0.950				0.955			0.973		
Satd. Flow (prot)	0	3110	1252	1570	1621	0	0	1851	1454	0	1548	0	
Flt Permitted		0.814		0.458				0.955			0.973		
Satd. Flow (perm)	0	2531	1005	707	1621	0	0	959	1454	0	1384	0	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					2				179		9		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		191			478			213			449		
Travel Time (s)		4.3			10.9			4.8			10.2		
Confl. Peds. (#/hr)	130		99	99		130	137		56	56		137	
Confl. Bikes (#/hr)			15			17						2	
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	0.97	0.97	0.97	0.75	0.75	0.75	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	
Parking (#/hr)			0										
Adj. Flow (vph)	1	408	136	127	312	10	132	8	156	20	7	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	409	136	127	322	0	0	140	156	0	36	0	
Turn Type	Perm	NA	Perm	D.P+P	NA		Split	NA	Over	Split	NA		
Protected Phases		1		5	1 5		3	3	5	4	4		2
Permitted Phases	1		1	1									
Detector Phase	1	1	1	5	1 5		3	3	5	4	4		
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	6.0			8.0	8.0	6.0	6.0	6.0		8.0
Minimum Split (s)	19.0	19.0	19.0	14.0			14.0	14.0	14.0	12.0	12.0		24.0
Total Split (s)	40.0	40.0	40.0	19.0			15.0	15.0	19.0	12.0	12.0		24.0
Total Split (%)	36.4%	36.4%	36.4%	17.3%			13.6%	13.6%	17.3%	10.9%	10.9%		22%
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0		4.0
All-Red Time (s)	4.0	4.0	4.0	4.0			2.0	2.0	4.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0	0.0	0.0				-1.0	0.0		-1.0		
Total Lost Time (s)		7.0	7.0	7.0				4.0	7.0		4.0		
Lead/Lag	Lead	Lead	Lead				Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	None			Max	Max	None	Max	Max		None
Act Effct Green (s)		33.0	33.0	45.0	52.0			11.0	12.0		8.0		
Actuated g/C Ratio		0.30	0.30	0.41	0.47			0.10	0.11		0.07		
v/c Ratio		0.54	0.45	0.33	0.42			0.76	0.49		0.30		
Control Delay		34.9	36.8	17.0	17.4			73.9	10.3		45.9		
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0		
Total Delay		34.9	36.8	17.0	17.4			73.9	10.3		45.9		
LOS		C	D	B	B			E	B		D		
Approach Delay		35.4			17.3			40.3			45.9		
Approach LOS		D			B			D			D		
Stops (vph)		269	85	54	138			122	15		21		
Fuel Used(gal)		5	2	1	3			3	1		0		
CO Emissions (g/hr)		343	116	83	214			206	45		32		
NOx Emissions (g/hr)		67	23	16	42			40	9		6		
VOC Emissions (g/hr)		79	27	19	50			48	11		7		
Dilemma Vehicles (#)		0	0	0	0			0	0		0		
Queue Length 50th (ft)		100	63	39	104			98	0		18		
Queue Length 95th (ft)		150	117	62	139			#197	46		42		
Internal Link Dist (ft)		111			398			133			369		
Turn Bay Length (ft)			100						100				
Base Capacity (vph)		759	301	383	767			185	318		120		
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		0.54	0.45	0.33	0.42			0.76	0.49		0.30		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 91 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 30.7 — Intersection LOS: C
Intersection Capacity Utilization 59.0% — ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: A Street/Thomson St & Congress Street

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	32	321	270	18	140	279	46	41	18	38	66	259	60
Future Volume (vph)	32	321	270	18	140	279	46	41	18	38	66	259	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0		150		0	0		0	0		125
Storage Lanes	0		1		1		0	1		0	0		1
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98	0.72		0.86	0.95		0.92	0.96			0.99	
Frt			0.850			0.979			0.899				0.850
Flt Protected		0.995			0.950			0.950				0.990	
Satd. Flow (prot)	0	1686	1454	0	1610	2857	0	1805	1346	0	0	1598	1405
Flt Permitted		0.943			0.458			0.950				0.990	
Satd. Flow (perm)	0	1568	1052	0	667	2857	0	1654	1346	0	0	1582	1405
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			278			18			39				89
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		478				521			204			912	
Travel Time (s)		10.9				11.8			4.6			20.7	
Confl. Peds. (#/hr)	121		83	38	83		121	82		38	38		82
Confl. Bikes (#/hr)			10				8						
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.93	0.97	0.97	0.97	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	2%	17%	0%	0%	3%	0%
Parking (#/hr)						0	0						
Adj. Flow (vph)	33	331	278	19	151	300	49	42	19	39	70	276	64
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	364	278	0	170	349	0	42	58	0	0	346	64
Turn Type	Perm	NA	Perm	Perm	Perm	NA		Split	NA		Split	NA	Prot
Protected Phases		1				1		2	2		3	3	3
Permitted Phases	1		1	1	1								
Detector Phase	1	1	1	1	1	1		2	2		3	3	3
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0		30.0	30.0		33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0		30.0	30.0		37.0	37.0	37.0
Total Split (%)	39.1%	39.1%	39.1%	39.1%	39.1%	39.1%		27.3%	27.3%		33.6%	33.6%	33.6%
Yellow Time (s)	3.0	3.0	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		9.0	9.0	9.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			11.0	11.0
Lead/Lag								Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	None
Act Effct Green (s)		56.8	56.8		56.8	56.8		9.6	9.6			25.4	25.4
Actuated g/C Ratio		0.52	0.52		0.52	0.52		0.09	0.09			0.23	0.23
v/c Ratio		0.45	0.41		0.49	0.24		0.27	0.38			0.94	0.16
Control Delay		6.8	2.3		12.5	4.7		51.2	29.2			59.0	2.4
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		6.8	2.3		12.5	4.7		51.2	29.2			59.0	2.4
LOS		A	A		B	A		D	C			E	A
Approach Delay		4.9				7.3			38.4			50.1	
Approach LOS		A				A			D			D	
Stops (vph)		74	19		69	110		38	24			264	8
Fuel Used(gal)		2	1		1	2		1	1			8	0
CO Emissions (g/hr)		155	86		100	157		49	39			536	35
NOx Emissions (g/hr)		30	17		19	30		10	8			104	7
VOC Emissions (g/hr)		36	20		23	36		11	9			124	8
Dilemma Vehicles (#)		0	0		0	0		0	0			0	0
Queue Length 50th (ft)		54	7		30	20		28	13			230	0
Queue Length 95th (ft)		70	20		57	36		63	53			#399	m2
Internal Link Dist (ft)		398				441			124			832	
Turn Bay Length (ft)					150								125
Base Capacity (vph)		809	677		344	1484		410	336			377	400
Starvation Cap Reductn		1	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		0.45	0.41		0.49	0.24		0.10	0.17			0.92	0.16

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 97 (88%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 18.7 — Intersection LOS: B
Intersection Capacity Utilization 86.1% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Boston Wharf Road (WSR) & Congress Street

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	47	446	372	19	56	88	27	37	95	46
Future Volume (vph)	47	446	372	19	56	88	27	37	95	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor	0.93		0.99			0.99			0.95	
Frt			0.993				0.850		0.961	
Flt Protected	0.950					0.981			0.964	
Satd. Flow (prot)	1624	3249	3277	0	0	3168	1454	0	3014	0
Flt Permitted	0.497					0.981			0.964	
Satd. Flow (perm)	787	3249	3277	0	0	3133	1454	0	2919	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			5				99			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	100			100	20		17	20		17
Confl. Bikes (#/hr)				3						
Peak Hour Factor	0.96	0.96	0.91	0.91	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	49	465	409	21	65	102	31	39	100	48
Shared Lane Traffic (%)										
Lane Group Flow (vph)	49	465	430	0	0	167	31	0	187	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Perm	Prot	
Protected Phases		1	1		2	2	2		3	
Permitted Phases	1							3		
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	32.0	32.0	32.0		30.0	30.0	30.0	33.0	33.0	
Total Split (s)	47.0	47.0	47.0		30.0	30.0	30.0	33.0	33.0	
Total Split (%)	42.7%	42.7%	42.7%		27.3%	27.3%	27.3%	30.0%	30.0%	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0		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	
Total Lost Time (s)	5.0	5.0	5.0			4.0	4.0		4.0	
Lead/Lag					Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)	71.1	71.1	71.1			12.4	12.4		13.5	
Actuated g/C Ratio	0.65	0.65	0.65			0.11	0.11		0.12	
v/c Ratio	0.10	0.22	0.20			0.47	0.12		0.52	
Control Delay	5.0	4.7	11.8			49.7	1.0		50.1	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.0	4.7	11.8			49.7	1.0		50.1	
LOS	A	A	B			D	A		D	
Approach Delay		4.7	11.8			42.1			50.1	
Approach LOS		A	B			D			D	
Stops (vph)	11	93	238			130	0		162	
Fuel Used(gal)	0	3	4			2	0		3	
CO Emissions (g/hr)	21	192	266			166	3		209	
NOx Emissions (g/hr)	4	37	52			32	1		41	
VOC Emissions (g/hr)	5	45	62			38	1		48	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	7	35	92			58	0		64	
Queue Length 95th (ft)	m17	m54	140			87	0		97	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	508	2100	2119			748	419		769	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.10	0.22	0.20			0.22	0.07		0.24	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 65.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	236	158	426	145	116	182	181	271	23	163	64
Future Volume (vph)	125	236	158	426	145	116	182	181	271	23	163	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	14	12	12	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)	25			25			25			25		
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		0.98		0.96	0.95		0.95				0.98	0.92
Frt			0.850		0.963				0.850			0.850
Flt Protected		0.983		0.950	0.978		0.950				0.994	
Satd. Flow (prot)	0	3142	1454	1464	2777	0	1841	1824	1439	0	3095	1405
Flt Permitted		0.983		0.950	0.978		0.950				0.885	
Satd. Flow (perm)	0	3080	1454	1409	2730	0	1744	1824	1439	0	2700	1293
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					36				279			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		509			995			220			498	
Travel Time (s)		11.6			22.6			5.0			11.3	
Confl. Peds. (#/hr)	71		21	21		71	23		70	70		23
Confl. Bikes (#/hr)			5			8						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	1%	2%	0%	1%	6%	0%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	129	243	163	439	149	120	188	187	279	24	170	67
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	372	163	219	489	0	188	187	279	0	194	67
Turn Type	Split	NA	Prot	Split	NA		Prot	NA	Prot	Perm	NA	custom
Protected Phases	2	2	2	1	1		3	3 4	3 4		4	4
Permitted Phases										4		2
Detector Phase	2	2	2	1	1		3	3 4	3 4	4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	8.0
Minimum Split (s)	19.0	19.0	19.0	31.0	31.0		16.0			19.0	19.0	19.0
Total Split (s)	30.0	30.0	30.0	35.0	35.0		25.0			20.0	20.0	20.0
Total Split (%)	27.3%	27.3%	27.3%	31.8%	31.8%		22.7%			18.2%	18.2%	18.2%
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)	4.0	4.0	4.0	4.0	4.0		4.0			4.0	4.0	4.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0		-2.0				-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0				5.0	5.0
Lead/Lag	Lead	Lead	Lead				Lag					
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max		Max			None	None	None
Act Effct Green (s)		25.0	25.0	31.6	31.6		20.0	38.4	38.4		13.4	38.4
Actuated g/C Ratio		0.23	0.23	0.29	0.29		0.18	0.35	0.35		0.12	0.35
v/c Ratio		0.52	0.49	0.52	0.59		0.56	0.29	0.41		0.59	0.13
Control Delay		27.0	29.4	28.5	25.9		48.4	27.1	4.8		26.6	8.5
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		27.0	29.4	28.5	25.9		48.4	27.1	4.8		26.6	8.5
LOS		C	C	C	C		D	C	A		C	A
Approach Delay		27.7			26.7			23.7			21.9	
Approach LOS		C			C			C			C	
Stops (vph)		292	128	161	336		163	128	25		177	32
Fuel Used(gal)		5	2	4	8		3	2	1		3	1
CO Emissions (g/hr)		351	159	263	562		210	141	61		189	37
NOx Emissions (g/hr)		68	31	51	109		41	27	12		37	7
VOC Emissions (g/hr)		81	37	61	130		49	33	14		44	9
Dilemma Vehicles (#)		0	0	0	0		0	0	0		0	0
Queue Length 50th (ft)		106	87	106	112		122	94	0		74	21
Queue Length 95th (ft)		153	157	m79	m71		197	150	55		m102	m32
Internal Link Dist (ft)		429			915			140			418	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		714	330	421	824		334	663	700		368	554
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	0.49	0.52	0.59		0.56	0.28	0.40		0.53	0.12

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 93 (85%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 25.5 Intersection LOS: C
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: B Street & Congress Street

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	22	101	158	189	135	172	75	6	267	119	45	9	25	312	52
Future Volume (vph)	22	101	158	189	135	172	75	6	267	119	45	9	25	312	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.92			0.93				0.97				0.97	
Frt			0.974	0.850		0.971				0.959				0.980	
Flt Protected			0.982			0.983			0.950					0.996	
Satd. Flow (prot)	0	0	2815	1327	0	3072	0	0	2988	1550	0	0	0	3290	0
Flt Permitted			0.982			0.983			0.200					0.996	
Satd. Flow (perm)	0	0	2672	1327	0	2959	0	0	629	1550	0	0	0	3244	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						22				15				13	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				372	
Travel Time (s)			22.6			7.3				7.2				8.5	
Confl. Peds. (#/hr)	37	50		57	57		50	57	37		57	50	57		37
Confl. Bikes (#/hr)				7			5				4				8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	4%	3%	0%	2%	0%	0%	2%	3%	0%	0%	0%	1%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	23	106	166	199	157	200	87	7	297	132	50	9	26	318	53
Shared Lane Traffic (%)				31%											
Lane Group Flow (vph)	0	0	357	137	0	444	0	0	304	182	0	0	0	406	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm	Split	NA	
Protected Phases		1	1	1	4	4			2	2			3	3	
Permitted Phases	1							2				3			
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0	28.0	28.0	
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%	25.5%	25.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
Lead/Lag								Lead	Lead	Lead		Lag	Lag	Lag	
Lead-Lag Optimize?															
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Act Effct Green (s)			32.0	32.0		11.0			20.0	20.0				22.0	
Actuated g/C Ratio			0.29	0.29		0.10			0.18	0.18				0.20	
v/c Ratio			0.44	0.35		1.36			2.67	0.62				0.61	
Control Delay			21.5	22.5		216.5			792.9	34.9				43.2	
Queue Delay			0.0	0.0		0.0			0.0	0.0				0.0	
Total Delay			21.5	22.5		216.5			792.9	35.0				43.2	
LOS			C	C		F			F	C				D	
Approach Delay			21.8			216.5				509.1				43.2	
Approach LOS			C			F				F				D	
Stops (vph)			150	57		279			178	175				344	
Fuel Used(gal)			5	2		19			46	3				7	
CO Emissions (g/hr)			345	134		1351			3208	177				458	
NOx Emissions (g/hr)			67	26		263			624	35				89	
VOC Emissions (g/hr)			80	31		313			743	41				106	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			61	46		~211			~180	93				134	
Queue Length 95th (ft)			94	86		#296			#272	174				186	
Internal Link Dist (ft)			915			239				237				292	
Turn Bay Length (ft)				150											
Base Capacity (vph)			818	386		327			114	294				668	
Starvation Cap Reductn			0	0		0			0	1				0	
Spillback Cap Reductn			0	0		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.44	0.35		1.36			2.67	0.62				0.61	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.67
Intersection Signal Delay: 203.2 — Intersection LOS: F
Intersection Capacity Utilization 74.0% — 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: 19: D Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	29	0	4	26	1	0	436	0	0	642	0	
Future Volume (vph)	0	29	0	4	26	1	0	436	0	0	642	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt					0.997								
Flt Protected					0.994								
Satd. Flow (prot)	0	912	0	0	979	0	0	4776	0	0	3291	0	
Flt Permitted					0.956								
Satd. Flow (perm)	0	912	0	0	942	0	0	4776	0	0	3291	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					1								
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									67				
Confl. Bikes (#/hr)									4				
Peak Hour Factor	0.91	0.91	0.91	0.78	0.78	0.78	0.95	0.95	0.95	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	1%	0%	0%	2%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	32	0	5	33	1	0	459	0	0	655	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	32	0	0	39	0	0	459	0	0	655	0	
Turn Type		NA		Perm	NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		25.0		25.0	25.0			74.0					11.0
Total Split (%)		22.7%		22.7%	22.7%			67.3%					10%
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Recall Mode		None		None	None			C-Max					Max
Act Effct Green (s)		10.9			10.9			81.9			93.7		
Actuated g/C Ratio		0.10			0.10			0.74			0.85		
v/c Ratio		0.36			0.41			0.13			0.23		
Control Delay		56.4			58.3			5.7			3.4		
Queue Delay		0.0			0.0			0.0			0.3		
Total Delay		56.4			58.3			5.7			3.7		
LOS		E			E			A			A		
Approach Delay		56.4			58.3			5.7			3.7		
Approach LOS		E			E			A			A		
Stops (vph)		28			28			142			173		
Fuel Used(gal)		1			1			2			3		
CO Emissions (g/hr)		40			40			160			209		
NOx Emissions (g/hr)		8			8			31			41		
VOC Emissions (g/hr)		9			9			37			48		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		22			26			47			57		
Queue Length 95th (ft)		52			50			27			m87		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		165			172			3554			2802		
Starvation Cap Reductn		0			0			0			1452		
Spillback Cap Reductn		0			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.19			0.23			0.13			0.49		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 7.7 — Intersection LOS: A
Intersection Capacity Utilization 33.9% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: D Street & Transitway

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	360	436	326	320	
Future Volume (vph)	0	0	360	436	326	320	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.97		0.95		
Frt					0.926		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1679	3217	2896	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1623	3217	2896	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					253		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			49			49	
Confl. Bikes (#/hr)						15	
Peak Hour Factor	0.25	0.25	0.96	0.96	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	1%	
Adj. Flow (vph)	0	0	375	454	336	330	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	375	454	666	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Recall Mode			Max		C-Max		None
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.77	0.15	0.38		
Control Delay			43.8	2.2	9.3		
Queue Delay			6.4	0.0	0.6		
Total Delay			50.1	2.2	9.9		
LOS			D	A	A		
Approach Delay				23.9	9.9		
Approach LOS				C	A		
Stops (vph)			327	48	153		
Fuel Used(gal)			6	1	4		
CO Emissions (g/hr)			409	103	248		
NOx Emissions (g/hr)			80	20	48		
VOC Emissions (g/hr)			95	24	57		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			228	0	25		
Queue Length 95th (ft)			#387	89	149		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			488	3024	1752		
Starvation Cap Reductn			73	430	651		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.90	0.18	0.60		

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: 0.77
Intersection Signal Delay: 17.6 — Intersection LOS: B
Intersection Capacity Utilization 53.9% — ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: D Street & I-90 Ramp

Ø1 (R)	Ø2	Ø3
45 s	28 s	37 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	518	93	18	292	382	53	222	22	159	104	63
Future Volume (vph)	192	518	93	18	292	382	53	222	22	159	104	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.97	0.98				0.92	0.94	0.99		0.95	0.96	
Frt		0.977				0.850		0.987			0.955	
Flt Protected	0.950			0.950			0.950			0.950	0.990	
Satd. Flow (prot)	1555	3040	0	1464	1730	1599	1593	3341	0	1401	2770	0
Flt Permitted	0.366			0.135			0.950			0.950	0.990	
Satd. Flow (perm)	581	3040	0	208	1730	1473	1496	3341	0	1336	2744	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		23						8			51	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	37		54	54		37	51		40	40		51
Confl. Bikes (#/hr)			12			16			2			9
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.84	0.84	0.84	0.89	0.89	0.89
Heavy Vehicles (%)	1%	7%	1%	11%	12%	3%	2%	7%	18%	2%	12%	0%
Parking (#/hr)			0						0			
Adj. Flow (vph)	202	545	98	20	321	420	63	264	26	179	117	71
Shared Lane Traffic (%)										26%		
Lane Group Flow (vph)	202	643	0	20	321	420	63	290	0	132	235	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	19.0			35.0	35.0	29.0	27.0	27.0		29.0	29.0	
Total Split (%)	17.3%			31.8%	31.8%	26.4%	24.5%	24.5%		26.4%	26.4%	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Act Effct Green (s)	41.6	48.6		29.6	29.6	52.0	21.0	21.0		21.4	21.4	
Actuated g/C Ratio	0.38	0.44		0.27	0.27	0.47	0.19	0.19		0.19	0.19	
v/c Ratio	0.62	0.47		0.36	0.69	0.58	0.21	0.45		0.49	0.41	
Control Delay	18.9	8.6		54.4	42.5	15.0	39.7	40.8		44.6	30.4	
Queue Delay	0.0	0.0		0.0	0.0	0.3	0.0	0.4		0.0	0.0	
Total Delay	18.9	8.6		54.4	42.5	15.3	39.7	41.2		44.6	30.4	
LOS	B	A		D	D	B	D	D		D	C	
Approach Delay		11.0			27.8			40.9			35.5	
Approach LOS		B			C			D			D	
Stops (vph)	103	249		13	185	199	43	205		105	188	
Fuel Used(gal)	2	5		0	5	4	1	4		2	3	
CO Emissions (g/hr)	158	382		25	341	279	66	309		134	197	
NOx Emissions (g/hr)	31	74		5	66	54	13	60		26	38	
VOC Emissions (g/hr)	37	89		6	79	65	15	72		31	46	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	37	60		9	143	111	38	93		94	67	
Queue Length 95th (ft)	59	73		m25	#227	217	72	126		176	122	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	326	1355		55	465	744	304	644		292	619	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	65	0	85		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.47		0.36	0.69	0.62	0.21	0.52		0.45	0.38	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 109 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 24.9 — Intersection LOS: C
Intersection Capacity Utilization 83.1% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: D Street & Summer Street

Ø1 (R)	Ø2	Ø3	Ø4
35 s	29 s	27 s	19 s

Movement	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	3	11	5	318	8	1	7	88
Future Volume (Veh/h)	3	11	5	318	8	1	7	88
Sign Control	Free				Free		Stop	
Grade	0%				0%		0%	
Peak Hour Factor	0.88	0.88	0.92	0.93	0.93	0.98	0.98	0.98
Hourly flow rate (vph)	3	13	0	342	9	0	7	90
Pedestrians	213						83	
Lane Width (ft)	11.0						11.0	
Walking Speed (ft/s)	4.0						4.0	
Percent Blockage	16						6	
Right turn flare (veh)								
Median type	None				None			
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked			0.00			0.00		
vC, conflicting volume			0	99		0	992	86
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			0	99		0	992	86
tC, single (s)			0.0	4.1		0.0	6.4	6.2
tC, 2 stage (s)								
tF (s)			0.0	2.2		0.0	3.5	3.3
p0 queue free %			0	76		0	96	90
cM capacity (veh/h)			0	1411		0	163	914

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	3	13	351	97
Volume Left	0	0	342	7
Volume Right	0	13	0	90
cSH	1700	1700	1411	686
Volume to Capacity	0.00	0.01	0.24	0.14
Queue Length 95th (ft)	0	0	24	12
Control Delay (s)	0.0	0.0	8.2	11.1
Lane LOS			A	B
Approach Delay (s)	0.0		8.2	11.1
Approach LOS				B

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	33	63	1	193	22	18	138
Future Volume (Veh/h)	33	63	1	193	22	18	138
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.89	0.89	0.89	0.97	0.97
Hourly flow rate (vph)	35	68	0	217	25	19	142
Pedestrians						407	
Lane Width (ft)						11.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						31	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)				1160			
pX, platoon unblocked			0.00				
vC, conflicting volume	649		0			774	636
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	649		0			774	636
tC, single (s)	4.1		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.2		0.0			3.5	3.3
p0 queue free %	95		0			92	57
cM capacity (veh/h)	652		0			241	332

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	103	242	161
Volume Left	35	0	19
Volume Right	0	25	142
cSH	652	1700	317
Volume to Capacity	0.05	0.14	0.51
Queue Length 95th (ft)	4	0	68
Control Delay (s)	4.1	0.0	27.5
Lane LOS	A		D
Approach Delay (s)	4.1	0.0	27.5
Approach LOS			D

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	14	67	134	21	111	81
Future Volume (Veh/h)	1	14	67	134	21	111	81
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	15	73	149	23	123	90
Pedestrians						363	
Lane Width (ft)						11.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						28	
Right turn flare (veh)							
Median type			None	None			
Median storage veh)							
Upstream signal (ft)				858			
pX, platoon unblocked	0.00						
vC, conflicting volume	0	535				626	524
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	535				626	524
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				61	77
cM capacity (veh/h)	0	754				318	396

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	88	172	213
Volume Left	15	0	123
Volume Right	0	23	90
cSH	754	1700	347
Volume to Capacity	0.02	0.10	0.61
Queue Length 95th (ft)	2	0	97
Control Delay (s)	1.9	0.0	30.5
Lane LOS	A		D
Approach Delay (s)	1.9	0.0	30.5
Approach LOS			D

Intersection Summary				
Average Delay	14.1			
Intersection Capacity Utilization	37.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	3	11	164	139	23	90	13
Future Volume (Veh/h)	3	11	164	139	23	90	13
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.89	0.89
Hourly flow rate (vph)	0	12	176	158	26	101	15
Pedestrians				15		285	
Lane Width (ft)				12.0		12.0	
Walking Speed (ft/s)				4.0		4.0	
Percent Blockage				1		24	
Right turn flare (veh)							
Median type			None	None			
Median storage veh)							
Upstream signal (ft)				655			
pX, platoon unblocked	0.00						
vC, conflicting volume	0	469				671	456
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	469				671	456
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	99				68	97
cM capacity (veh/h)	0	841				315	464

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	188	184	116
Volume Left	12	0	101
Volume Right	0	26	15
cSH	841	1700	329
Volume to Capacity	0.01	0.11	0.35
Queue Length 95th (ft)	1	0	39
Control Delay (s)	0.7	0.0	21.8
Lane LOS	A		C
Approach Delay (s)	0.7	0.0	21.8
Approach LOS			C

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (veh/h)	1	10	243	13	152	29	48	9
Future Volume (Veh/h)	1	10	243	13	152	29	48	9
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.87	0.87	0.87	0.95	0.95
Hourly flow rate (vph)	0	10	248	0	175	33	51	9
Pedestrians			70		45		140	
Lane Width (ft)			12.0		12.0		12.0	
Walking Speed (ft/s)			4.0		4.0		4.0	
Percent Blockage			6		4		12	
Right turn flare (veh)								
Median type			None		None			
Median storage veh)								
Upstream signal (ft)					278			
pX, platoon unblocked	0.00			0.00				
vC, conflicting volume	0	348		0			644	402
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	348		0			644	402
tC, single (s)	0.0	4.1		0.0			6.4	6.2
tC, 2 stage (s)								
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	99		0			86	98
cM capacity (veh/h)	0	1080		0			371	543

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	258	208	60
Volume Left	10	0	51
Volume Right	0	33	9
cSH	1080	1700	389
Volume to Capacity	0.01	0.12	0.15
Queue Length 95th (ft)	1	0	13
Control Delay (s)	0.4	0.0	15.9
Lane LOS	A		C
Approach Delay (s)	0.4	0.0	15.9
Approach LOS			C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations		↑↱				↰↑		
Traffic Volume (veh/h)	5	597	174	2	52	515	0	0
Future Volume (Veh/h)	5	597	174	2	52	515	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.25	0.25
Hourly flow rate (vph)	0	628	183	0	54	531	0	0
Pedestrians							191	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		600				376		
pX, platoon unblocked	0.00			0.00	0.83		0.85	0.83
vC, conflicting volume	0			0	1002		1284	596
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	589		795	100
tC, single (s)	0.0			0.0	4.1		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.2		3.5	3.3
p0 queue free %	0			0	93		100	100
cM capacity (veh/h)	0			0	826		260	781

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	419	392	231	354
Volume Left	0	0	54	0
Volume Right	0	183	0	0
cSH	1700	1700	826	1700
Volume to Capacity	0.25	0.23	0.07	0.21
Queue Length 95th (ft)	0	0	5	0
Control Delay (s)	0.0	0.0	2.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		1.1	
Approach LOS				

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		46.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	392	0	6	303	137	4	0	5	79	0	33
Future Volume (Veh/h)	54	392	0	6	303	137	4	0	5	79	0	33
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.75	0.75	0.75	0.90	0.90	0.90
Hourly flow rate (vph)	57	413	0	6	312	141	5	0	7	88	0	37
Pedestrians											547	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											46	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.89			0.85			0.90	0.90	0.85	0.90	0.90	0.89
vC, conflicting volume	1000			413			958	1539	413	1476	1468	930
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	941			214			634	1280	214	1210	1202	863
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			99			97	100	99	0	100	79
cM capacity (veh/h)	359			1156			159	68	702	44	76	174

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	470	459	12	125
Volume Left	57	6	5	88
Volume Right	0	141	7	37
cSH	359	1156	290	57
Volume to Capacity	0.16	0.01	0.04	2.20
Queue Length 95th (ft)	14	0	3	308
Control Delay (s)	5.2	0.2	18.0	705.7
Lane LOS	A	A	C	F
Approach Delay (s)	5.2	0.2	18.0	705.7
Approach LOS			C	F

Intersection Summary			
Average Delay	85.3		
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	463	401	40	66	45
Future Volume (Veh/h)	13	463	401	40	66	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.97	0.97	0.96	0.96
Hourly flow rate (vph)	13	472	413	41	69	47
Pedestrians					393	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					33	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1094	191			
pX, platoon unblocked	0.88				0.89	0.88
vC, conflicting volume	847				1324	826
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	754				1221	731
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				41	81
cM capacity (veh/h)	509				117	246

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	485	454	116
Volume Left	13	0	69
Volume Right	0	41	47
cSH	509	1700	149
Volume to Capacity	0.03	0.27	0.78
Queue Length 95th (ft)	2	0	121
Control Delay (s)	0.7	0.0	84.2
Lane LOS	A		F
Approach Delay (s)	0.7	0.0	84.2
Approach LOS			F

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	107	29	5	0	339	132	11	0	20	4
Future Volume (vph)	7	4	107	29	5	0	339	132	11	0	20	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.93	0.97		0.98			0.99				
Frt			0.850					0.988			0.977	
Flt Protected		0.968			0.959		0.950					
Satd. Flow (prot)	0	1839	1417	0	1776	0	1719	1860	0	0	1856	0
Flt Permitted		0.816			0.746		0.950					
Satd. Flow (perm)	0	1439	1373	0	1359	0	1719	1860	0	0	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116					12			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		278			172			335			275	
Travel Time (s)		6.3			3.9			7.6			6.3	
Confl. Peds. (#/hr)	35		10	10		35			31	31		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	14%	3%	0%	0%	5%	0%	0%	0%	0%	0%
Adj. Flow (vph)	8	4	116	32	5	0	357	139	12	0	53	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	116	0	37	0	357	151	0	0	64	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA			NA	
Protected Phases		5	1		5		1	1 4			4	
Permitted Phases	5		5	5						4		
Detector Phase	5	5	1	5	5		1	1 4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0		22.0			22.0	22.0	
Total Split (s)	22.0	22.0	63.0	22.0	22.0		63.0			25.0	25.0	
Total Split (%)	20.0%	20.0%	57.3%	20.0%	20.0%		57.3%			22.7%	22.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0	
Lead/Lag	Lag	Lag		Lag	Lag					Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	None	None		C-Max			None	None	
Act Effct Green (s)		8.7	88.1		8.7		82.7	98.5			8.9	
Actuated g/C Ratio		0.08	0.80		0.08		0.75	0.90			0.08	
v/c Ratio		0.11	0.10		0.35		0.28	0.09			0.41	
Control Delay		48.6	0.6		56.9		4.7	1.4			50.1	
Queue Delay		0.0	0.0		0.0		0.5	0.0			0.0	
Total Delay		48.6	0.6		56.9		5.1	1.4			50.1	
LOS		D	A		E		A	A			D	
Approach Delay		5.1			56.9			4.0			50.1	
Approach LOS		A			E			A			D	
Stops (vph)		12	4		32		73	15			20	
Fuel Used(gal)		0	0		1		2	0			0	
CO Emissions (g/hr)		14	19		43		113	35			28	
NOx Emissions (g/hr)		3	4		8		22	7			6	
VOC Emissions (g/hr)		3	4		10		26	8			7	
Dilemma Vehicles (#)		0	0		0		0	0			0	
Queue Length 50th (ft)		8	0		25		67	12			39	
Queue Length 95th (ft)		27	9		59		101	24			30	
Internal Link Dist (ft)		198			92			255			195	
Turn Bay Length (ft)												
Base Capacity (vph)		222	1156		210		1291	1773			344	
Starvation Cap Reductn		0	0		0		538	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.05	0.10		0.18		0.47	0.09			0.19	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 10.9 | Intersection LOS: B
Intersection Capacity Utilization 46.2% | ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	963	106	17	698	33	79	68	33	33	41	77
Future Volume (vph)	163	963	106	17	698	33	79	68	33	33	41	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	80		0	0		0	0		0	0		100
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.98			0.93			0.94	0.92
Frt		0.985			0.993			0.975				0.850
Flt Protected	0.950				0.999			0.979			0.978	
Satd. Flow (prot)	1533	2812	0	0	2934	0	0	1306	0	0	1400	1255
Flt Permitted	0.268				0.698			0.834			0.822	
Satd. Flow (perm)	432	2812	0	0	2050	0	0	1083	0	0	1103	1153
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			5			11				83
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1029			308			511			339	
Travel Time (s)		23.4			7.0			11.6			7.7	
Confl. Peds. (#/hr)	130		69	69		130	46		157	157		46
Confl. Bikes (#/hr)			29			8			5			2
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.92	0.92	0.92	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	0%	0%	6%	38%	7%	2%	0%	35%	0%	12%
Parking (#/hr)						0		0	0			
Adj. Flow (vph)	170	1003	110	18	720	34	86	74	36	35	44	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1113	0	0	772	0	0	196	0	0	79	83
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	6	1 6			1			5			5	
Permitted Phases	1			1			5			5		5
Detector Phase	6	1 6		1	1		5	5		5	5	5
Switch Phase												
Minimum Initial (s)	4.0			10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	9.0			23.0	23.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	20.0			50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	18.2%			45.5%	45.5%		36.4%	36.4%		36.4%	36.4%	36.4%
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0		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)	3.0				3.0			3.0			3.0	3.0
Lead/Lag	Lag						Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None			C-Max	C-Max		None	None		None	None	None
Act Effct Green (s)	75.7	78.7			53.4			25.3			25.3	25.3
Actuated g/C Ratio	0.69	0.72			0.49			0.23			0.23	0.23
v/c Ratio	0.33	0.55			0.77			0.76			0.31	0.25
Control Delay	5.9	4.4			20.0			53.6			46.9	18.4
Queue Delay	0.0	0.1			0.0			0.0			0.0	0.0
Total Delay	5.9	4.5			20.0			53.6			46.9	18.4
LOS	A	A			B			D			D	B
Approach Delay		4.6			20.0			53.6			32.3	
Approach LOS		A			B			D			C	
Stops (vph)	40	180			319			184			60	49
Fuel Used(gal)	2	11			7			4			1	1
CO Emissions (g/hr)	121	735			462			291			85	53
NOx Emissions (g/hr)	23	143			90			57			17	10
VOC Emissions (g/hr)	28	170			107			68			20	12
Dilemma Vehicles (#)	0	0			0			0			0	0
Queue Length 50th (ft)	18	65			46			103			52	13
Queue Length 95th (ft)	m24	m78			#304			m135			89	45
Internal Link Dist (ft)		949			228			431			259	
Turn Bay Length (ft)	80											100
Base Capacity (vph)	521	2004			998			371			371	442
Starvation Cap Reductn	0	0			1			0			0	0
Spillback Cap Reductn	0	158			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.33	0.60			0.77			0.53			0.21	0.19

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.4 — Intersection LOS: B
Intersection Capacity Utilization 86.3% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sleeper Street & Seaport Boulevard

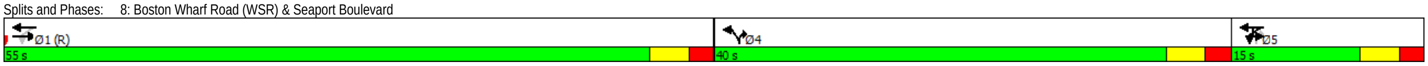
Ø1 (R)	Ø5	Ø6
50 s	40 s	20 s

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	720	205	15	90	718	139	49
Future Volume (vph)	720	205	15	90	718	139	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12
Storage Length (ft)		0		100		0	100
Storage Lanes		0		1		1	1
Taper Length (ft)				25		25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.99						
Frt	0.967						0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	2807	0	0	1520	2935	1608	1454
Flt Permitted				0.236		0.950	
Satd. Flow (perm)	2807	0	0	378	2935	1608	1454
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)	45						51
Link Speed (mph)	30				30	30	
Link Distance (ft)	139				255	912	
Travel Time (s)	3.2				5.8	20.7	
Confl. Bikes (#/hr)		20					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	8%	5%	0%	8%	7%	1%	0%
Adj. Flow (vph)	783	223	16	98	780	145	51
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1006	0	0	114	780	145	51
Turn Type	NA		Prot	D.P+P	NA	Prot	custom
Protected Phases	1		5	5	1 5	4	4
Permitted Phases				1			5
Detector Phase	1		5	5	1 5	4	4
Switch Phase							
Minimum Initial (s)	10.0		8.0	8.0		8.0	8.0
Minimum Split (s)	24.0		15.0	15.0		30.0	30.0
Total Split (s)	55.0		15.0	15.0		40.0	40.0
Total Split (%)	50.0%		13.6%	13.6%		36.4%	36.4%
Yellow Time (s)	3.0		3.0	3.0		3.0	3.0
All-Red Time (s)	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0			-1.0		-1.0	0.0
Total Lost Time (s)	3.0			4.0		4.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		None	None		None	None
Act Effct Green (s)	72.9			82.6	87.6	15.4	29.1
Actuated g/C Ratio	0.66			0.75	0.80	0.14	0.26
v/c Ratio	0.54			0.29	0.33	0.64	0.12
Control Delay	4.3			4.9	3.3	51.2	15.6
Queue Delay	0.0			0.0	0.3	0.0	0.0
Total Delay	4.3			4.9	3.6	51.2	15.6
LOS	A			A	A	D	B
Approach Delay	4.3				3.8	41.9	
Approach LOS	A				A	D	
Stops (vph)	282			23	157	139	39
Fuel Used(gal)	3			0	3	3	1
CO Emissions (g/hr)	235			31	194	224	50
NOx Emissions (g/hr)	46			6	38	44	10
VOC Emissions (g/hr)	55			7	45	52	12
Dilemma Vehicles (#)	0			0	0	0	0
Queue Length 50th (ft)	24			14	64	110	6
Queue Length 95th (ft)	98			33	87	176	m27
Internal Link Dist (ft)	59				175	832	
Turn Bay Length (ft)				100			100
Base Capacity (vph)	1875			399	2329	526	498
Starvation Cap Reductn	27			0	851	0	0
Spillback Cap Reductn	0			0	12	0	0
Storage Cap Reductn	0			0	0	0	0
Reduced v/c Ratio	0.54			0.29	0.53	0.28	0.10

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 7.6 Intersection LOS: A
Intersection Capacity Utilization 54.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	10	70	705	0	0	581	95	151	316	76	78	0	80
Future Volume (vph)	10	70	705	0	0	581	95	151	316	76	78	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	0		1	2		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor						0.96			0.98		0.91	0.46	
Frt						0.979				0.850		0.850	
Flt Protected		0.950							0.984		0.950		
Satd. Flow (prot)	0	1373	2737	0	0	2711	0	0	3154	1405	2764	0	0
Flt Permitted		0.264							0.984		0.950		
Satd. Flow (perm)	0	381	2737	0	0	2711	0	0	3087	1405	2512	0	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						19				119		169	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			262			376			812			335	
Travel Time (s)			6.0			8.5			18.5			7.6	
Confl. Peds. (#/hr)	50	127					127	50		74	74		50
Confl. Bikes (#/hr)							26						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	21%	9%	0%	0%	9%	7%	0%	2%	0%	14%	0%	13%
Parking (#/hr)			0	0									
Adj. Flow (vph)	11	76	766	0	0	618	101	164	343	83	85	0	87
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	87	766	0	0	719	0	0	507	83	85	87	0
Turn Type	D.P+P	D.P+P	NA			NA		Split	NA	Prot	Prot		
Protected Phases	6	6	1 6			1		4	4	4	5		
Permitted Phases	1	1											
Detector Phase	6	6	1 6			1		4	4	4	5		
Switch Phase													
Minimum Initial (s)	4.0	4.0				10.0		8.0	8.0	8.0	8.0		
Minimum Split (s)	9.0	9.0				20.0		27.0	27.0	27.0	13.0		
Total Split (s)	10.0	10.0				45.0		35.0	35.0	35.0	20.0		
Total Split (%)	9.1%	9.1%				40.9%		31.8%	31.8%	31.8%	18.2%		
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		0.0				-2.0			0.0	-2.0	0.0		
Total Lost Time (s)		5.0				3.0			5.0	3.0	5.0		
Lead/Lag								Lead	Lead	Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None				C-Max		None	None	None	None		
Act Effct Green (s)		61.3	68.3			48.4			22.7	24.7	8.7	0.0	
Actuated g/C Ratio		0.56	0.62			0.44			0.21	0.22	0.08	0.00	
v/c Ratio		0.25	0.45			0.60			0.78	0.20	0.39	0.51	
Control Delay		15.2	10.9			15.4			45.8	2.3	55.6	0.0	
Queue Delay		0.0	0.5			0.8			0.0	0.0	0.0	0.0	
Total Delay		15.2	11.4			16.1			45.8	2.3	55.6	0.0	
LOS		B	B			B			D	A	E	A	
Approach Delay			11.8			16.1			39.7			27.5	
Approach LOS			B			B			D			C	
Stops (vph)		29	191			454			433	10	75	46	
Fuel Used(gal)		1	4			7			10	1	2	0	
CO Emissions (g/hr)		40	284			462			677	40	105	32	
NOx Emissions (g/hr)		8	55			90			132	8	20	6	
VOC Emissions (g/hr)		9	66			107			157	9	24	8	
Dilemma Vehicles (#)		0	0			0			0	0	0	0	
Queue Length 50th (ft)		20	78			73			187	3	31	0	
Queue Length 95th (ft)		45	127			121			233	m4	57	0	
Internal Link Dist (ft)			182			296			732			255	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		346	1698			1203			860	493	376	169	
Starvation Cap Reductn		0	489			212			0	0	0	0	
Spillback Cap Reductn		0	137			0			0	5	0	0	
Storage Cap Reductn		0	0			0			0	0	0	0	
Reduced v/c Ratio		0.25	0.63			0.73			0.59	0.17	0.23	0.51	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 21.3 — Intersection LOS: C
Intersection Capacity Utilization Err% — ICU Level of Service H
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: East Service Road & Seaport Boulevard

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	779	90	49	315	358	133
Future Volume (vph)	779	90	49	315	358	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	13	11	12
Storage Length (ft)		0	0		125	125
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor	1.00					
Frt	0.984					0.850
Flt Protected				0.993	0.950	
Satd. Flow (prot)	2890	0	0	2485	2901	1358
Flt Permitted				0.758	0.950	
Satd. Flow (perm)	2890	0	0	1897	2901	1358
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	392			591	498	
Travel Time (s)	8.9			13.4	11.3	
Confl. Bikes (#/hr)		23				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	5%	24%	28%	5%	7%
Parking (#/hr)				0		
Adj. Flow (vph)	847	98	53	342	389	145
Shared Lane Traffic (%)						
Lane Group Flow (vph)	945	0	0	395	389	145
Turn Type	NA		Perm	NA	Prot	Prot
Protected Phases	1			1	4	4
Permitted Phases			1			
Detector Phase	1		1	1	4	4
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0
Minimum Split (s)	28.0		28.0	28.0	28.0	28.0
Total Split (s)	65.0		65.0	65.0	45.0	45.0
Total Split (%)	59.1%		59.1%	59.1%	40.9%	40.9%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0			-2.0	0.0	0.0
Total Lost Time (s)	3.0			3.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Act Effct Green (s)	82.6			82.6	19.4	19.4
Actuated g/C Ratio	0.75			0.75	0.18	0.18
v/c Ratio	0.44			0.28	0.76	0.60
Control Delay	12.8			5.4	36.0	35.3
Queue Delay	1.1			0.0	0.0	0.0
Total Delay	13.9			5.4	36.1	35.3
LOS	B			A	D	D
Approach Delay	13.9			5.4	35.9	
Approach LOS	B			A	D	
Stops (vph)	608			109	320	111
Fuel Used(gal)	8			3	6	2
CO Emissions (g/hr)	578			187	404	146
NOx Emissions (g/hr)	113			36	79	28
VOC Emissions (g/hr)	134			43	94	34
Dilemma Vehicles (#)	0			0	0	0
Queue Length 50th (ft)	244			38	121	80
Queue Length 95th (ft)	380			71	164	m130
Internal Link Dist (ft)	312			511	418	
Turn Bay Length (ft)					125	125
Base Capacity (vph)	2169			1424	1054	493
Starvation Cap Reductn	912			0	0	0
Spillback Cap Reductn	0			0	33	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.75			0.28	0.38	0.29

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 18.3 Intersection LOS: B
Intersection Capacity Utilization 60.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

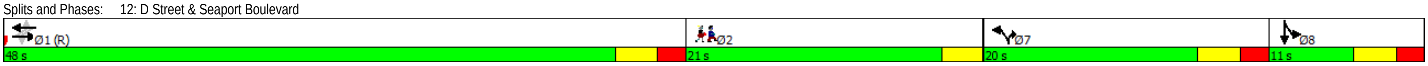
Splits and Phases: 10: B Street & Seaport Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	23	549	261	48	162	28	211	0	43	36	16	16	
Future Volume (vph)	23	549	261	48	162	28	211	0	43	36	16	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.96			0.99		0.94	0.57			0.88		
Frt		0.953			0.983			0.850	0.850		0.969		
Flt Protected		0.999			0.990		0.950				0.974		
Satd. Flow (prot)	0	2835	0	0	2504	0	1626	0	1615	0	1325	0	
Flt Permitted		0.941			0.724		0.950				0.974		
Satd. Flow (perm)	0	2669	0	0	1821	0	1532	0	1615	0	1216	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		93			18			164	109		12		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		372			296			334			515		
Travel Time (s)		8.5			6.7			7.6			11.7		
Confl. Peds. (#/hr)	29		173	173		29	32		31	31		32	
Confl. Bikes (#/hr)			18			13							
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	26%	17%	13%	0%	49%	50%	11%	0%	0%	24%	67%	7%	
Adj. Flow (vph)	25	590	281	52	176	30	222	0	45	39	17	17	
Shared Lane Traffic (%)									10%				
Lane Group Flow (vph)	0	896	0	0	258	0	222	5	40	0	73	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	48.0	48.0		48.0	48.0		20.0		20.0	11.0	11.0		21.0
Total Split (%)	48.0%	48.0%		48.0%	48.0%		20.0%		20.0%	11.0%	11.0%		21%
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	Lead		Lead		Lead	Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Act Effct Green (s)		55.2			55.2		19.6	0.0	19.6		10.2		
Actuated g/C Ratio		0.55			0.55		0.20	0.00	0.20		0.10		
v/c Ratio		0.59			0.25		0.70	0.03	0.10		0.50		
Control Delay		16.3			13.0		49.0	0.0	0.5		47.3		
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0		
Total Delay		16.3			13.0		49.0	0.0	0.5		47.3		
LOS		B			B		D	A	A		D		
Approach Delay		16.3			13.0			40.8			47.3		
Approach LOS		B			B			D			D		
Stops (vph)		500			116		192	0	0		52		
Fuel Used(gal)		8			2		4	0	0		1		
CO Emissions (g/hr)		556			127		260	1	7		84		
NOx Emissions (g/hr)		108			25		51	0	1		16		
VOC Emissions (g/hr)		129			29		60	0	2		19		
Dilemma Vehicles (#)		0			0		0	0	0		0		
Queue Length 50th (ft)		172			40		132	0	0		37		
Queue Length 95th (ft)		277			76		203	0	0		80		
Internal Link Dist (ft)		292			216			254			435		
Turn Bay Length (ft)													
Base Capacity (vph)		1515			1013		322	164	407		145		
Starvation Cap Reductn		0			0		0	0	0		0		
Spillback Cap Reductn		0			0		0	0	0		0		
Storage Cap Reductn		0			0		0	0	0		0		
Reduced v/c Ratio		0.59			0.25		0.69	0.03	0.10		0.50		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: D Street & Seaport Boulevard

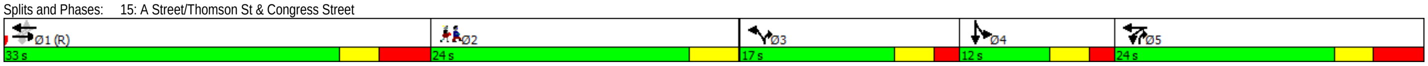


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	4	354	140	340	454	7	153	16	162	18	38	16	
Future Volume (vph)	4	354	140	340	454	7	153	16	162	18	38	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12	
Storage Length (ft)	100		100	0		0	0		100	0		0	
Storage Lanes	0		1	1		0	0		1	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	0.95	0.95	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		1.00								
Frt			0.850		0.998				0.850		0.971		
Flt Protected		0.999		0.950				0.957			0.987		
Satd. Flow (prot)	0	2990	1364	1570	1617	0	0	1775	1425	0	1708	0	
Flt Permitted		0.750		0.485				0.957			0.987		
Satd. Flow (perm)	0	2245	1307	802	1617	0	0	1775	1425	0	1708	0	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					1				167		10		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		191			478			213			710		
Travel Time (s)		4.3			10.9			4.8			16.1		
Confl. Bikes (#/hr)			14			8			2				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	5%	3%	0%	2%	0%	4%	9%	2%	0%	0%	40%	
Adj. Flow (vph)	4	365	144	370	493	8	158	16	167	20	41	17	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	369	144	370	501	0	0	174	167	0	78	0	
Turn Type	Perm	NA	Perm	D.P+P	NA		Prot	NA	custom	Split	NA		
Protected Phases		1		5	1 5		3		3 5	4	4		2
Permitted Phases	1		1	1									
Detector Phase	1	1	1	5	1 5		3		3 5	4	4		
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	6.0			8.0			6.0	6.0		8.0
Minimum Split (s)	19.0	19.0	19.0	14.0			14.0			12.0	12.0		24.0
Total Split (s)	33.0	33.0	33.0	24.0			17.0			12.0	12.0		24.0
Total Split (%)	30.0%	30.0%	30.0%	21.8%			15.5%			10.9%	10.9%		22%
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0			3.0	3.0		4.0
All-Red Time (s)	4.0	4.0	4.0	4.0			2.0			2.0	2.0		0.0
Lost Time Adjust (s)		0.0	0.0	0.0							-1.0		
Total Lost Time (s)		7.0	7.0	7.0							4.0		
Lead/Lag	Lead	Lead	Lead				Lead			Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	None			Max			Max	Max		None
Act Effct Green (s)		30.8	30.8	47.8	54.8			14.0	31.0		8.0		
Actuated g/C Ratio		0.28	0.28	0.43	0.50			0.13	0.28		0.07		
v/c Ratio		0.59	0.39	0.79	0.62			0.77	0.32		0.59		
Control Delay		38.3	37.4	48.8	39.5			69.8	4.8		68.2		
Queue Delay		0.0	0.0	0.0	3.5			0.0	0.0		0.0		
Total Delay		38.3	37.4	48.8	42.9			69.8	4.8		68.2		
LOS		D	D	D	D			E	A		E		
Approach Delay		38.1			45.4			38.0			68.2		
Approach LOS		D			D			D			E		
Stops (vph)		273	100	367	397			154	18		60		
Fuel Used(gal)		5	2	7	8			4	1		2		
CO Emissions (g/hr)		338	128	467	533			247	37		128		
NOx Emissions (g/hr)		66	25	91	104			48	7		25		
VOC Emissions (g/hr)		78	30	108	123			57	9		30		
Dilemma Vehicles (#)		0	0	0	0			0	0		0		
Queue Length 50th (ft)		111	77	265	357			121	0		47		
Queue Length 95th (ft)		156	123	#422	484			#228	39		m#104		
Internal Link Dist (ft)		111			398			133			630		
Turn Bay Length (ft)			100						100				
Base Capacity (vph)		628	365	467	806			225	521		133		
Starvation Cap Reductn		0	0	0	211			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		0.59	0.39	0.79	0.84			0.77	0.32		0.59		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 70.0% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: A Street/Thomson St & Congress Street



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	60	283	165	18	132	657	129	101	124	58	40	63	38
Future Volume (vph)	60	283	165	18	132	657	129	101	124	58	40	63	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0		150		0	0		0	0		125
Storage Lanes	0		1		1		0	1		0	0		1
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	1.00	1.00	1.00	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	0.77		0.88	0.95		0.91	0.98			0.98	
Frt			0.850			0.975			0.952				0.850
Flt Protected		0.991			0.950			0.950				0.981	
Satd. Flow (prot)	0	1602	1454	0	1624	2697	0	1841	1462	0	0	1511	1405
Flt Permitted		0.724			0.456			0.950				0.981	
Satd. Flow (perm)	0	1160	1114	0	684	2697	0	1674	1462	0	0	1488	1405
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			179			24			20				89
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		478				521			204			912	
Travel Time (s)		10.9				11.8			4.6			20.7	
Confl. Peds. (#/hr)	103		69	36	69		103	64		36	36		64
Confl. Bikes (#/hr)			9				8			2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	0%	0%	0%	5%	8%	0%	7%	2%	11%	5%	0%
Parking (#/hr)						0	0						
Adj. Flow (vph)	65	308	179	20	143	714	140	107	132	62	43	68	41
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	373	179	0	163	854	0	107	194	0	0	111	41
Turn Type	Perm	NA	Perm	Perm	Perm	NA		Split	NA		Split	NA	Prot
Protected Phases		1				1		2	2		3	3	3
Permitted Phases	1		1	1	1								
Detector Phase	1	1	1	1	1	1		2	2		3	3	3
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0		30.0	30.0		33.0	33.0	33.0
Total Split (s)	47.0	47.0	47.0	47.0	47.0	47.0		30.0	30.0		33.0	33.0	33.0
Total Split (%)	42.7%	42.7%	42.7%	42.7%	42.7%	42.7%		27.3%	27.3%		30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	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		9.0	9.0	9.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			11.0	11.0
Lead/Lag								Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	None
Act Effct Green (s)		57.1	57.1		57.1	57.1		18.3	18.3			13.6	13.6
Actuated g/C Ratio		0.52	0.52		0.52	0.52		0.17	0.17			0.12	0.12
v/c Ratio		0.62	0.27		0.46	0.61		0.35	0.75			0.59	0.16
Control Delay		22.0	3.3		20.7	17.4		42.2	55.9			40.5	2.5
Queue Delay		0.0	0.0		0.0	0.0		0.2	0.0			0.0	0.0
Total Delay		22.0	3.3		20.7	17.5		42.4	55.9			40.5	2.5
LOS		C	A		C	B		D	E			D	A
Approach Delay		15.9				18.0			51.1			30.2	
Approach LOS		B				B			D			C	
Stops (vph)		264	48		74	406		85	152			78	5
Fuel Used(gal)		4	1		2	8		1	3			2	0
CO Emissions (g/hr)		299	69		115	575		105	224			140	22
NOx Emissions (g/hr)		58	13		22	112		20	44			27	4
VOC Emissions (g/hr)		69	16		27	133		24	52			32	5
Dilemma Vehicles (#)		0	0		0	0		0	0			0	0
Queue Length 50th (ft)		261	1		54	156		67	118			54	1
Queue Length 95th (ft)		#387	127		m114	238		112	186			101	m5
Internal Link Dist (ft)		398				441			124			832	
Turn Bay Length (ft)					150								125
Base Capacity (vph)		601	664		354	1410		418	347			302	352
Starvation Cap Reductn		0	0		0	0		0	0			0	0
Spillback Cap Reductn		0	0		0	23		69	0			0	12
Storage Cap Reductn		0	0		0	0		0	0			0	0
Reduced v/c Ratio		0.62	0.27		0.46	0.62		0.31	0.56			0.37	0.12

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 100.2% ICU Level of Service G
Analysis Period (min) 15
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: 16: Boston Wharf Road (WSR) & Congress Street

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	61	304	533	74	176	285	89	208	260	178
Future Volume (vph)	61	304	533	74	176	285	89	208	260	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor	0.97		0.98			0.98			0.92	
Frt			0.982				0.850		0.959	
Flt Protected	0.950					0.981			0.965	
Satd. Flow (prot)	1624	3094	3091	0	0	3168	1398	0	2987	0
Flt Permitted	0.281					0.981			0.965	
Satd. Flow (perm)	464	3094	3091	0	0	3090	1398	0	2790	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			13				99			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	82			82	43		12	43		12
Confl. Bikes (#/hr)				12						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	5%	3%	0%	1%	4%	0%	1%	4%
Adj. Flow (vph)	66	330	579	80	191	310	97	226	283	193
Shared Lane Traffic (%)										
Lane Group Flow (vph)	66	330	659	0	0	501	97	0	702	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Perm	Prot	
Protected Phases		1	1		2	2	2		3	
Permitted Phases	1							3		
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	32.0	32.0	32.0		30.0	30.0	30.0	33.0	33.0	
Total Split (s)	34.0	34.0	34.0		30.0	30.0	30.0	46.0	46.0	
Total Split (%)	30.9%	30.9%	30.9%		27.3%	27.3%	27.3%	41.8%	41.8%	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0		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	
Total Lost Time (s)	5.0	5.0	5.0			4.0	4.0		4.0	
Lead/Lag					Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)	39.5	39.5	39.5			23.0	23.0		34.5	
Actuated g/C Ratio	0.36	0.36	0.36			0.21	0.21		0.31	
v/c Ratio	0.40	0.30	0.59			0.76	0.26		0.80	
Control Delay	28.4	18.4	23.6			48.6	8.5		41.9	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	28.4	18.4	23.6			48.6	8.5		41.9	
LOS	C	B	C			D	A		D	
Approach Delay		20.1	23.6			42.1			41.9	
Approach LOS		C	C			D			D	
Stops (vph)	38	143	344			421	14		570	
Fuel Used(gal)	1	3	7			8	0		10	
CO Emissions (g/hr)	57	221	504			526	25		676	
NOx Emissions (g/hr)	11	43	98			102	5		131	
VOC Emissions (g/hr)	13	51	117			122	6		157	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	17	38	127			174	0		232	
Queue Length 95th (ft)	m63	101	m186			229	41		274	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	166	1112	1119			748	406		1065	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.40	0.30	0.59			0.67	0.24		0.66	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 58 (53%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 33.1 — Intersection LOS: C
Intersection Capacity Utilization 78.5% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	325	120	128	1	300	263	89	306	299	344	11	66	29
Future Volume (vph)	325	120	128	1	300	263	89	306	299	344	11	66	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	14	12	12	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)	25				25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.91	0.91	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.93			0.94	0.95						0.99	0.98
Frt			0.850			0.973				0.850			0.850
Flt Protected		0.965			0.950	0.985		0.950				0.993	
Satd. Flow (prot)	0	2959	1398	0	1382	2629	0	1770	1754	1346	0	3119	1232
Flt Permitted		0.965			0.950	0.985		0.950				0.860	
Satd. Flow (perm)	0	2755	1398	0	1303	2584	0	1770	1754	1346	0	2667	1210
Right Turn on Red			No				Yes			Yes			Yes
Satd. Flow (RTOR)						21				355			109
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		509				995			220			498	
Travel Time (s)		11.6				22.6			5.0			11.3	
Confl. Peds. (#/hr)	126		37		37		126				45		2
Confl. Bikes (#/hr)							1						1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	3%	14%	4%	0%	7%	9%	14%	4%	4%	8%	0%	0%	14%
Adj. Flow (vph)	346	128	136	1	319	280	95	315	308	355	12	72	32
Shared Lane Traffic (%)					50%								
Lane Group Flow (vph)	0	474	136	0	160	535	0	315	308	355	0	84	32
Turn Type	Split	NA	Prot	Split	Split	NA		Prot	NA	Prot	Perm	NA	custom
Protected Phases	2	2	2	1	1	1		3	3 4	3 4		4	4
Permitted Phases											4		2
Detector Phase	2	2	2	1	1	1		3	3 4	3 4	4	4	4
Switch Phase													
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	8.0
Minimum Split (s)	19.0	19.0	19.0	31.0	31.0	31.0		16.0			19.0	19.0	19.0
Total Split (s)	31.0	31.0	31.0	32.0	32.0	32.0		28.0			19.0	19.0	19.0
Total Split (%)	28.2%	28.2%	28.2%	29.1%	29.1%	29.1%		25.5%			17.3%	17.3%	17.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	4.0	4.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0				-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0				5.0	5.0
Lead/Lag	Lead	Lead	Lead					Lag					
Lead-Lag Optimize?													
Recall Mode	Max	Max	Max	C-Max	C-Max	C-Max		Max			None	None	None
Act Effct Green (s)		26.0	26.0		29.8	29.8		23.0	39.2	39.2		11.2	37.2
Actuated g/C Ratio		0.24	0.24		0.27	0.27		0.21	0.36	0.36		0.10	0.34
v/c Ratio		0.93dl	0.41		0.43	0.74		0.85	0.49	0.50		0.31	0.07
Control Delay		50.3	47.1		23.4	27.8		64.0	30.6	5.2		65.8	2.4
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		50.3	47.1		23.4	27.8		64.0	30.6	5.2		65.8	2.4
LOS		D	D		C	C		E	C	A		E	A
Approach Delay		49.6				26.8			32.1			48.4	
Approach LOS		D				C			C			D	
Stops (vph)		384	100		83	401		276	227	30		76	4
Fuel Used(gal)		8	2		2	9		6	4	1		2	0
CO Emissions (g/hr)		591	160		163	627		422	254	78		122	10
NOx Emissions (g/hr)		115	31		32	122		82	49	15		24	2
VOC Emissions (g/hr)		137	37		38	145		98	59	18		28	2
Dilemma Vehicles (#)		0	0		0	0		0	0	0		0	0
Queue Length 50th (ft)		148	73		47	74		216	171	0		33	0
Queue Length 95th (ft)		217	m137		m108	#284		#367	242	60		61	m11
Internal Link Dist (ft)		429				915			140			418	
Turn Bay Length (ft)			200		250								125
Base Capacity (vph)		699	330		374	727		370	669	733		339	512
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		0.68	0.41		0.43	0.74		0.85	0.46	0.48		0.25	0.06

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 84.7% 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.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: B Street & Congress Street

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	10	105	268	373	68	94	20	2	374	163	24	2	20	226	42
Future Volume (vph)	10	105	268	373	68	94	20	2	374	163	24	2	20	226	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.93			0.94			0.62	0.98				0.96	
Frt			0.986	0.850		0.983				0.981				0.978	
Flt Protected			0.987			0.982			0.950					0.996	
Satd. Flow (prot)	0	0	2834	1314	0	2850	0	0	2902	1514	0	0	0	3013	0
Flt Permitted			0.987			0.982			0.950					0.996	
Satd. Flow (perm)	0	0	2690	1314	0	2692	0	0	1814	1514	0	0	0	2985	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						10				6				14	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				334	
Travel Time (s)			22.6			7.3				7.2				7.6	
Confl. Peds. (#/hr)	56	26		90	90		26	90	56		57	26	57		56
Confl. Bikes (#/hr)				8			7				6				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	4%	2%	23%	0%	0%	5%	9%	9%	0%	0%	11%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	10	108	276	385	74	102	22	2	407	177	26	2	22	243	45
Shared Lane Traffic (%)				10%											
Lane Group Flow (vph)	0	0	433	346	0	198	0	0	409	203	0	0	0	312	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Split	Split	NA		Split	Split	NA	
Protected Phases		1	1	1	4	4		2	2	2		3	3	3	
Permitted Phases	1														
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0	30.0		22.0	22.0	22.0	
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%	27.3%		20.0%	20.0%	20.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
Lead/Lag								Lead	Lead	Lead		Lag	Lag	Lag	
Lead-Lag Optimize?															
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Act Effct Green (s)			33.8	33.8		12.2			23.0	23.0				16.0	
Actuated g/C Ratio			0.31	0.31		0.11			0.21	0.21				0.15	
v/c Ratio			0.50	0.86		0.61			0.67	0.63				0.69	
Control Delay			30.1	53.2		52.6			32.3	33.6				51.6	
Queue Delay			0.0	0.0		0.0			0.1	0.5				0.0	
Total Delay			30.1	53.2		52.6			32.5	34.1				51.6	
LOS			C	D		D			C	C				D	
Approach Delay			40.4			52.6				33.0				51.6	
Approach LOS			D			D				C				D	
Stops (vph)			291	281		162			347	205				259	
Fuel Used(gal)			7	8		3			5	3				5	
CO Emissions (g/hr)			520	545		230			372	201				366	
NOx Emissions (g/hr)			101	106		45			72	39				71	
VOC Emissions (g/hr)			121	126		53			86	47				85	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			113	237		66			147	137				106	
Queue Length 95th (ft)			166	#441		106			189	203				155	
Internal Link Dist (ft)			915			239				237				254	
Turn Bay Length (ft)				150											
Base Capacity (vph)			870	404		345			606	321				450	
Starvation Cap Reductn			0	0		0			10	14				0	
Spillback Cap Reductn			0	0		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.50	0.86		0.57			0.69	0.66				0.69	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 74.2% 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: 19: D Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	45	0	0	34	0	0	563	0	0	669	0	
Future Volume (vph)	0	45	0	0	34	0	0	563	0	0	669	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt													
Flt Protected													
Satd. Flow (prot)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Flt Permitted													
Satd. Flow (perm)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)													
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									85				
Confl. Bikes (#/hr)									39				
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	7%	0%	0%	8%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	47	0	0	37	0	0	612	0	0	697	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	47	0	0	37	0	0	612	0	0	697	0	
Turn Type		NA			NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		33.0		33.0	33.0			66.0					11.0
Total Split (%)		30.0%		30.0%	30.0%			60.0%					10%
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Recall Mode		None		None	None			C-Max					Max
Act Effct Green (s)		12.0			12.0			80.8			92.6		
Actuated g/C Ratio		0.11			0.11			0.73			0.84		
v/c Ratio		0.47			0.37			0.18			0.27		
Control Delay		61.0			55.2			7.2			3.0		
Queue Delay		0.0			0.0			0.2			0.6		
Total Delay		61.0			55.2			7.4			3.7		
LOS		E			E			A			A		
Approach Delay		61.0			55.2			7.4			3.7		
Approach LOS		E			E			A			A		
Stops (vph)		42			32			236			211		
Fuel Used(gal)		1			1			3			3		
CO Emissions (g/hr)		64			44			239			226		
NOx Emissions (g/hr)		13			9			46			44		
VOC Emissions (g/hr)		15			10			55			52		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		32			25			50			50		
Queue Length 95th (ft)		69			57			130			m133		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		232			232			3313			2618		
Starvation Cap Reductn		0			0			1800			1460		
Spillback Cap Reductn		0			0			3			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.20			0.16			0.40			0.60		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 71 (65%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 34.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: D Street & Transitway

Ø1 (R)	Ø2	Ø3
66 s	11 s	33 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	242	563	465	204	
Future Volume (vph)	0	0	242	563	465	204	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.96		0.97		
Frt					0.954		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1584	3036	2850	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1520	3036	2850	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					71		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			62			62	
Confl. Bikes (#/hr)						4	
Peak Hour Factor	0.25	0.25	0.93	0.93	0.96	0.96	
Heavy Vehicles (%)	0%	0%	6%	7%	9%	8%	
Adj. Flow (vph)	0	0	260	605	484	213	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	260	605	697	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Recall Mode			Max		C-Max		None
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.57	0.21	0.42		
Control Delay			40.0	1.2	13.7		
Queue Delay			3.6	0.0	0.3		
Total Delay			43.6	1.2	14.0		
LOS			D	A	B		
Approach Delay				14.0	14.0		
Approach LOS				B	B		
Stops (vph)			182	32	472		
Fuel Used(gal)			4	2	6		
CO Emissions (g/hr)			247	113	420		
NOx Emissions (g/hr)			48	22	82		
VOC Emissions (g/hr)			57	26	97		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			140	0	78		
Queue Length 95th (ft)			m227	60	135		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			460	2854	1647		
Starvation Cap Reductn			123	341	402		
Spillback Cap Reductn			0	0	0		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.77	0.24	0.56		

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: 0.57
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 46.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: D Street & I-90 Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	564	71	34	406	470	147	164	45	233	88	144
Future Volume (vph)	170	564	71	34	406	470	147	164	45	233	88	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.99				0.93	0.97	0.98		0.95	0.96	
Frt		0.983				0.850		0.968			0.930	
Flt Protected	0.950			0.950			0.950			0.950	0.988	
Satd. Flow (prot)	1555	2933	0	1577	1656	1584	1608	2737	0	1374	2583	0
Flt Permitted	0.263			0.119			0.950			0.950	0.988	
Satd. Flow (perm)	423	2933	0	198	1656	1471	1566	2737	0	1309	2553	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		16						28			148	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	33		31	31		33	25		37	37		25
Confl. Bikes (#/hr)			9			15			32			2
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	1%	12%	9%	3%	17%	4%	1%	27%	28%	4%	30%	4%
Parking (#/hr)			0						0			
Adj. Flow (vph)	175	581	73	35	423	490	155	173	47	240	91	148
Shared Lane Traffic (%)										32%		
Lane Group Flow (vph)	175	654	0	35	423	490	155	220	0	163	316	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	15.0			40.0	40.0	28.0	27.0	27.0		28.0	28.0	
Total Split (%)	13.6%			36.4%	36.4%	25.5%	24.5%	24.5%		25.5%	25.5%	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Act Effct Green (s)	41.6	48.6		33.6	33.6	56.0	21.0	21.0		21.4	21.4	
Actuated g/C Ratio	0.38	0.44		0.31	0.31	0.51	0.19	0.19		0.19	0.19	
v/c Ratio	0.73	0.50		0.58	0.84	0.64	0.51	0.40		0.61	0.51	
Control Delay	47.6	20.6		62.5	43.3	11.5	46.5	36.4		22.3	6.4	
Queue Delay	2.6	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.2	20.6		62.5	43.3	11.5	46.5	36.5		22.3	6.4	
LOS	D	C		E	D	B	D	D		C	A	
Approach Delay		26.8			27.6			40.6			11.8	
Approach LOS		C			C			D			B	
Stops (vph)	125	307		24	310	172	129	156		106	102	
Fuel Used(gal)	3	7		1	7	4	3	3		2	2	
CO Emissions (g/hr)	222	524		50	498	292	200	244		117	117	
NOx Emissions (g/hr)	43	102		10	97	57	39	47		23	23	
VOC Emissions (g/hr)	52	121		12	115	68	46	56		27	27	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	67	112		13	197	86	99	62		58	9	
Queue Length 95th (ft)	#130	174		m#50	#434	28	167	101		97	11	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	241	1304		60	505	779	306	545		274	635	
Starvation Cap Reductn	0	0		0	0	0	0	0		1	0	
Spillback Cap Reductn	19	0		0	0	0	0	14		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.50		0.58	0.84	0.63	0.51	0.41		0.60	0.50	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 30 (27%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 26.3 Intersection LOS: C
Intersection Capacity Utilization 88.4% 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.
m Volume for 95th percentile queue is metered by upstream signal.

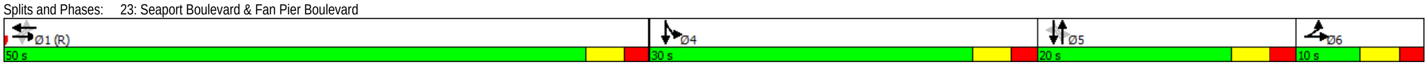
Splits and Phases: 22: D Street & Summer Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↑↱			✥			✥	
Traffic Volume (vph)	104	917	11	7	690	48	0	5	0	77	14	61
Future Volume (vph)	104	917	11	7	690	48	0	5	0	77	14	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.990						0.946	
Flt Protected	0.950										0.975	
Satd. Flow (prot)	1805	3603	0	0	3574	0	0	1900	0	0	1752	0
Flt Permitted	0.253				0.768						0.837	
Satd. Flow (perm)	481	3603	0	0	2745	0	0	1900	0	0	1504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8						34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		294			222			175			328	
Travel Time (s)		6.7			5.0			4.0			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	997	12	8	750	52	0	5	0	84	15	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1009	0	0	810	0	0	5	0	0	165	0
Turn Type	D.P+P	NA		Perm	NA			NA		D.P+P	NA	
Protected Phases	6	1 6			1			5		4	4 5	
Permitted Phases	1			1			5			5		
Detector Phase	6	1 6		1	1		5	5		4	4 5	
Switch Phase												
Minimum Initial (s)	4.0			8.0	8.0		8.0	8.0		8.0		
Minimum Split (s)	9.0			22.0	22.0		20.0	20.0		27.0		
Total Split (s)	10.0			50.0	50.0		20.0	20.0		30.0		
Total Split (%)	9.1%			45.5%	45.5%		18.2%	18.2%		27.3%		
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0			2.0	2.0		2.0	2.0		2.0		
Lost Time Adjust (s)	0.0				0.0			0.0				
Total Lost Time (s)	5.0				5.0			5.0				
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None			C-Max	C-Max		None	None		None		
Act Effct Green (s)	70.0	75.0			50.3			8.0			20.0	
Actuated g/C Ratio	0.64	0.68			0.46			0.07			0.18	
v/c Ratio	0.21	0.41			0.64			0.04			0.50	
Control Delay	4.2	3.8			23.1			46.6			33.8	
Queue Delay	0.0	0.4			0.7			0.0			0.0	
Total Delay	4.2	4.2			23.8			46.6			33.8	
LOS	A	A			C			D			C	
Approach Delay		4.2			23.8			46.6			33.8	
Approach LOS		A			C			D			C	
Stops (vph)	16	132			397			7			102	
Fuel Used(gal)	0	4			7			0			2	
CO Emissions (g/hr)	29	250			488			8			140	
NOx Emissions (g/hr)	6	49			95			2			27	
VOC Emissions (g/hr)	7	58			113			2			32	
Dilemma Vehicles (#)	0	0			0			0			0	
Queue Length 50th (ft)	11	54			156			3			78	
Queue Length 95th (ft)	21	68			228			m5			132	
Internal Link Dist (ft)		214			142			95			248	
Turn Bay Length (ft)	125											
Base Capacity (vph)	543	2458			1259			259			517	
Starvation Cap Reductn	0	853			172			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.21	0.63			0.75			0.02			0.32	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.2 Intersection LOS: B
Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Seaport Boulevard & Fan Pier Boulevard



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	133	2	13	237
Future Volume (Veh/h)	1	8	133	2	13	237
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.67	0.67	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	12	145	2	14	258
Pedestrians	183			115	137	
Lane Width (ft)	11.0			11.0	11.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	14			9	10	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			150		619	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			150		619	259
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		95	59
cM capacity (veh/h)			1281		311	637

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	147	272
Volume Left	0	145	14
Volume Right	12	0	258
cSH	1700	1281	604
Volume to Capacity	0.01	0.11	0.45
Queue Length 95th (ft)	0	10	58
Control Delay (s)	0.0	8.1	15.7
Lane LOS		A	C
Approach Delay (s)	0.0	8.1	15.7
Approach LOS			C

Intersection Summary			
Average Delay	12.7		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	95	98	43	6	33
Future Volume (Veh/h)	142	95	98	43	6	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	103	107	47	7	36
Pedestrians					412	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					31	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			1145			
pX, platoon unblocked						
vC, conflicting volume	566				954	542
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566				954	542
tC, single (s)	4.1				6.4	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.5
p0 queue free %	77				95	90
cM capacity (veh/h)	683				154	346

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	257	154	43
Volume Left	154	0	7
Volume Right	0	47	36
cSH	683	1700	287
Volume to Capacity	0.23	0.09	0.15
Queue Length 95th (ft)	22	0	13
Control Delay (s)	8.2	0.0	19.7
Lane LOS	A		C
Approach Delay (s)	8.2	0.0	19.7
Approach LOS			C

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	101	0	5	139	0	0	103	0	0	103	0
Future Volume (Veh/h)	0	101	0	5	139	0	0	103	0	0	103	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	110	0	5	151	0	0	112	0	0	112	0
Pedestrians											291	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											24	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					843							
pX, platoon unblocked												
vC, conflicting volume	442			110			327	562	110	618	562	442
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442			110			327	562	110	618	562	442
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	100			100			100	66	100	100	66	100
cM capacity (veh/h)	855			1493			382	331	949	177	331	465

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	156	112	112
Volume Left	0	5	0	0
Volume Right	0	0	0	0
cSH	855	1493	331	331
Volume to Capacity	0.00	0.00	0.34	0.34
Queue Length 95th (ft)	0	0	36	36
Control Delay (s)	0.0	0.3	21.3	21.3
Lane LOS		A	C	C
Approach Delay (s)	0.0	0.3	21.3	21.3
Approach LOS			C	C

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	76	0	0	132	169	0	135	0	30	0	11
Future Volume (Veh/h)	24	76	0	0	132	169	0	135	0	30	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	83	0	0	136	174	0	147	0	33	0	12
Pedestrians											192	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											16	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					640							
pX, platoon unblocked												
vC, conflicting volume	502			83			370	637	83	624	550	415
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502			83			370	637	83	624	550	415
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.5	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.9	4.0	3.3
p0 queue free %	97			100			100	55	100	80	100	98
cM capacity (veh/h)	901			1527			495	324	982	165	363	539

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	310	147	45
Volume Left	26	0	0	33
Volume Right	0	174	0	12
cSH	901	1700	324	202
Volume to Capacity	0.03	0.18	0.45	0.22
Queue Length 95th (ft)	2	0	56	21
Control Delay (s)	2.4	0.0	25.0	27.8
Lane LOS	A		C	D
Approach Delay (s)	2.4	0.0	25.0	27.8
Approach LOS			C	D

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	104	0	0	295	40	0	0	0	1	0	5
Future Volume (Veh/h)	1	104	0	0	295	40	0	0	0	1	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.92	0.50	0.92	0.50
Hourly flow rate (vph)	1	113	0	0	307	42	0	0	0	2	0	10
Pedestrians		61			45						134	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		5			4						11	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					278							
pX, platoon unblocked												
vC, conflicting volume	483			113			514	598	158	622	577	523
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	483			113			514	598	158	622	577	523
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	100	98
cM capacity (veh/h)	968			1489			403	371	859	314	382	470

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	114	349	0	12
Volume Left	1	0	0	2
Volume Right	0	42	0	10
cSH	968	1489	1700	434
Volume to Capacity	0.00	0.00	0.00	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.1	0.0	0.0	13.5
Lane LOS	A		A	B
Approach Delay (s)	0.1	0.0	0.0	13.5
Approach LOS			A	B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	2	832	78	1	24	362	0	0
Future Volume (Veh/h)	2	832	78	1	24	362	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	885	83	0	26	393	0	0
Pedestrians							143	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		591				372		
pX, platoon unblocked	0.00			0.00	0.92		0.92	0.92
vC, conflicting volume	0			0	1111		1318	627
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	954		1179	430
tC, single (s)	0.0			0.0	4.4		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.3		3.5	3.3
p0 queue free %	0			0	96		100	100
cM capacity (veh/h)	0			0	597		165	534

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	590	378	157	262
Volume Left	0	0	26	0
Volume Right	0	83	0	0
cSH	1700	1700	597	1700
Volume to Capacity	0.35	0.22	0.04	0.15
Queue Length 95th (ft)	0	0	3	0
Control Delay (s)	0.0	0.0	2.3	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.9	
Approach LOS				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	405	0	12	375	153	2	0	2	102	0	45
Future Volume (Veh/h)	63	405	0	12	375	153	2	0	2	102	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	1.00	1.00	1.00	0.94	0.94	0.94
Hourly flow rate (vph)	65	418	0	12	383	156	2	0	2	109	0	48
Pedestrians											738	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											61	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.82			0.84			0.90	0.90	0.84	0.90	0.90	0.82
vC, conflicting volume	1277			418			1081	1849	418	1773	1771	1199
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1227			209			627	1483	209	1399	1396	1131
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	63			99			96	100	100	0	100	39
cM capacity (veh/h)	174			1151			52	27	701	15	30	78

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	483	551	4	157
Volume Left	65	12	2	109
Volume Right	0	156	2	48
cSH	174	1151	97	20
Volume to Capacity	0.37	0.01	0.04	7.73
Queue Length 95th (ft)	40	1	3	Err
Control Delay (s)	21.1	0.3	43.7	Err
Lane LOS	C	A	E	F
Approach Delay (s)	21.1	0.3	43.7	Err
Approach LOS			E	F

Intersection Summary				
Average Delay	1322.5			
Intersection Capacity Utilization	73.7%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	41	469	3	516	104	27	24
Future Volume (Veh/h)	41	469	3	516	104	27	24
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	484	0	561	113	29	26
Pedestrians						485	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						40	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)		1094		191			
pX, platoon unblocked	0.77		0.00			0.82	0.77
vC, conflicting volume	1159		0			1670	1102
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1060		0			1476	987
tC, single (s)	4.2		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.3		0.0			3.5	3.3
p0 queue free %	85		0			49	81
cM capacity (veh/h)	288		0			57	137

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	526	674	55
Volume Left	42	0	29
Volume Right	0	113	26
cSH	288	1700	79
Volume to Capacity	0.15	0.40	0.70
Queue Length 95th (ft)	13	0	82
Control Delay (s)	5.2	0.0	120.1
Lane LOS	A		F
Approach Delay (s)	5.2	0.0	120.1
Approach LOS			F

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	5	249	4	6	0	167	34	26	0	143	25
Future Volume (vph)	1	5	249	4	6	0	167	34	26	0	143	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.95	0.97		0.99			0.88				
Frt			0.850					0.935			0.980	
Flt Protected		0.992			0.982		0.950					
Satd. Flow (prot)	0	1885	1615	0	1866	0	1787	1557	0	0	1862	0
Flt Permitted		0.939			0.877		0.950					
Satd. Flow (perm)	0	1696	1571	0	1657	0	1787	1557	0	0	1862	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259					28			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		278			143			338			266	
Travel Time (s)		6.3			3.3			7.7			6.0	
Confl. Peds. (#/hr)	93		8	8		93			84	84		
Peak Hour Factor	0.96	0.96	0.96	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%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	5	259	4	7	0	182	37	28	0	155	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	259	0	11	0	182	65	0	0	182	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA			NA	
Protected Phases		5	1		5		1	1 4			4	
Permitted Phases	5		5	5						4		
Detector Phase	5	5	1	5	5		1	1 4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	22.0	22.0	23.0	22.0	22.0		23.0			23.0	23.0	
Total Split (s)	22.0	22.0	63.0	22.0	22.0		63.0			25.0	25.0	
Total Split (%)	20.0%	20.0%	57.3%	20.0%	20.0%		57.3%			22.7%	22.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0	
Lead/Lag	Lag	Lag		Lag	Lag					Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	None	None		C-Max			None	None	
Act Effct Green (s)		8.0	83.4		8.0		80.2	102.8			14.6	
Actuated g/C Ratio		0.07	0.76		0.07		0.73	0.93			0.13	
v/c Ratio		0.05	0.20		0.09		0.14	0.04			0.72	
Control Delay		50.3	0.9		49.6		5.7	1.4			59.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		50.3	0.9		49.6		5.7	1.4			59.4	
LOS		D	A		D		A	A			E	
Approach Delay		2.0			49.6			4.5			59.4	
Approach LOS		A			D			A			E	
Stops (vph)		7	8		11		61	7			150	
Fuel Used(gal)		0	1		0		1	0			3	
CO Emissions (g/hr)		8	44		12		68	15			223	
NOx Emissions (g/hr)		2	9		2		13	3			43	
VOC Emissions (g/hr)		2	10		3		16	3			52	
Dilemma Vehicles (#)		0	0		0		0	0			0	
Queue Length 50th (ft)		4	0		7		21	0			120	
Queue Length 95th (ft)		18	18		26		m87	m12			186	
Internal Link Dist (ft)		198			63			258			186	
Turn Bay Length (ft)												
Base Capacity (vph)		262	1286		256		1302	1465			344	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.02	0.20		0.04		0.14	0.04			0.53	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 18.4 — Intersection LOS: B
Intersection Capacity Utilization 51.6% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Ø1 (R)	Ø4	Ø5
63 s	25 s	22 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	820	101	0	1034	47	157	18	73	144	58	233
Future Volume (vph)	61	820	101	0	1034	47	157	18	73	144	58	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	0		125	125		0	0		0	0		100
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.98			0.93			0.96	0.92
Frt		0.984			0.993			0.960				0.850
Flt Protected	0.950							0.969			0.966	
Satd. Flow (prot)	1593	2845	0	0	3089	0	0	1333	0	0	1597	1405
Flt Permitted	0.087							0.549			0.661	
Satd. Flow (perm)	146	2845	0	0	3089	0	0	733	0	0	1045	1286
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			5			23				69
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1029			308			346			339	
Travel Time (s)		23.4			7.0			7.9			7.7	
Confl. Peds. (#/hr)	118		171	171		118	55		87	87		55
Confl. Bikes (#/hr)			30			22			4			3
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Parking (#/hr)						0		0	0			
Adj. Flow (vph)	63	845	104	0	1124	51	171	20	79	150	60	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	949	0	0	1175	0	0	270	0	0	210	243
Turn Type	D.P+P	NA			NA		D.P+P	NA		Perm	NA	pm+ov
Protected Phases	6	1 6			1		5	4 5			4	6
Permitted Phases	1			1			4			4		4
Detector Phase	6	1 6		1	1		5	4 5		4	4	6
Switch Phase												
Minimum Initial (s)	4.0			10.0	10.0		4.0			8.0	8.0	4.0
Minimum Split (s)	9.0			23.0	23.0		9.0			30.0	30.0	9.0
Total Split (s)	10.0			50.0	50.0		10.0			40.0	40.0	10.0
Total Split (%)	9.1%			45.5%	45.5%		9.1%			36.4%	36.4%	9.1%
Yellow Time (s)	3.0			3.0	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	-2.0				-2.0						-2.0	-2.0
Total Lost Time (s)	3.0				3.0						3.0	3.0
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	None			C-Max	C-Max		Min			None	None	None
Act Effct Green (s)	57.4	60.4			47.0			40.6			33.6	44.0
Actuated g/C Ratio	0.52	0.55			0.43			0.37			0.31	0.40
v/c Ratio	0.30	0.60			0.89			0.84			0.66	0.43
Control Delay	20.2	11.1			21.4			56.6			43.0	11.5
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	20.2	11.1			21.4			56.6			43.0	11.5
LOS	C	B			C			E			D	B
Approach Delay		11.7			21.4			56.6			26.1	
Approach LOS		B			C			E			C	
Stops (vph)	34	276			330			201			161	93
Fuel Used(gal)	1	11			9			6			3	2
CO Emissions (g/hr)	65	768			637			392			223	117
NOx Emissions (g/hr)	13	150			124			76			43	23
VOC Emissions (g/hr)	15	178			148			91			52	27
Dilemma Vehicles (#)	0	0			0			0			0	0
Queue Length 50th (ft)	14	112			100			150			113	47
Queue Length 95th (ft)	m16	m113			#142			m#238			196	99
Internal Link Dist (ft)		949			228			266			259	
Turn Bay Length (ft)												100
Base Capacity (vph)	212	1569			1322			335			351	567
Starvation Cap Reductn	0	0			1			0			0	0
Spillback Cap Reductn	0	20			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.30	0.61			0.89			0.81			0.60	0.43

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 87.0% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sleeper Street & Seaport Boulevard

Ø1 (R)	Ø4	Ø5	Ø6
50 s	40 s	10 s	10 s

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	771	249	24	248	913	111	72
Future Volume (vph)	771	249	24	248	913	111	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12
Storage Length (ft)		0		100		0	100
Storage Lanes		0		1		1	0
Taper Length (ft)				25		25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.85					0.90	0.88
Frt	0.963						0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	2526	0	0	1624	3049	1608	1454
Flt Permitted				0.180		0.950	
Satd. Flow (perm)	2526	0	0	308	3049	1441	1278
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)	59						31
Link Speed (mph)	30				30	30	
Link Distance (ft)	139				274	912	
Travel Time (s)	3.2				6.2	20.7	
Confl. Peds. (#/hr)		262	84	262		79	84
Confl. Bikes (#/hr)		22					
Peak Hour Factor	0.96	0.96	0.92	0.92	0.92	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	3%	1%	0%
Adj. Flow (vph)	803	259	26	270	992	119	77
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1062	0	0	296	992	119	77
Turn Type	NA		D.P+P	D.P+P	NA	Prot	custom
Protected Phases	1		5	5	1 5	4	4
Permitted Phases			1	1			5
Detector Phase	1		5	5	1 5	4	4
Switch Phase							
Minimum Initial (s)	10.0		4.0	4.0		8.0	8.0
Minimum Split (s)	24.0		9.0	9.0		30.0	30.0
Total Split (s)	60.0		10.0	10.0		40.0	40.0
Total Split (%)	54.5%		9.1%	9.1%		36.4%	36.4%
Yellow Time (s)	3.0		3.0	3.0		3.0	3.0
All-Red Time (s)	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0			-1.0		-1.0	0.0
Total Lost Time (s)	3.0			4.0		4.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max		None	None		None	None
Act Effct Green (s)	59.8			84.2	89.2	13.8	37.2
Actuated g/C Ratio	0.54			0.77	0.81	0.13	0.34
v/c Ratio	0.76			0.55	0.40	0.59	0.16
Control Delay	9.9			26.0	3.3	57.9	26.3
Queue Delay	0.5			0.7	0.2	0.0	0.0
Total Delay	10.5			26.6	3.5	57.9	26.3
LOS	B			C	A	E	C
Approach Delay	10.5				8.8	45.5	
Approach LOS	B				A	D	
Stops (vph)	571			244	170	106	43
Fuel Used(gal)	6			3	3	3	1
CO Emissions (g/hr)	442			235	244	188	79
NOx Emissions (g/hr)	86			46	48	36	15
VOC Emissions (g/hr)	102			55	57	43	18
Dilemma Vehicles (#)	0			0	0	0	0
Queue Length 50th (ft)	139			112	71	86	34
Queue Length 95th (ft)	144			202	90	m145	m74
Internal Link Dist (ft)	59				194	832	
Turn Bay Length (ft)				100			100
Base Capacity (vph)	1401			539	2472	526	564
Starvation Cap Reductn	89			65	678	0	0
Spillback Cap Reductn	0			0	278	12	0
Storage Cap Reductn	0			0	0	0	0
Reduced v/c Ratio	0.81			0.62	0.55	0.23	0.14

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 12.3 — Intersection LOS: B
Intersection Capacity Utilization 82.3% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard

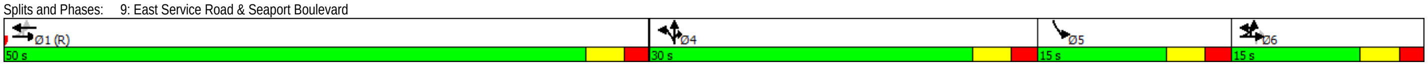
Ø1 (R)	Ø4	Ø5
60 s	40 s	10 s

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	16	49	802	0	0	814	94	160	83	214	184	0	193
Future Volume (vph)	16	49	802	0	0	814	94	160	83	214	184	0	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	0		1	2		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor						0.97			0.97	0.94	0.95	0.53	
Frt						0.984				0.850		0.850	
Flt Protected		0.950							0.968		0.950		
Satd. Flow (prot)	0	1624	2925	0	0	2940	0	0	3145	1391	3090	0	0
Flt Permitted		0.188							0.968		0.950		
Satd. Flow (perm)	0	321	2925	0	0	2940	0	0	3063	1313	2927	0	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						14				69		169	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			243			376			812			338	
Travel Time (s)			5.5			8.5			18.5			7.7	
Confl. Peds. (#/hr)	35	132		180	180		132	35		30	30		35
Confl. Bikes (#/hr)							33						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%	0%	0%	0%	1%	2%	0%	1%
Parking (#/hr)			0	0									
Adj. Flow (vph)	17	53	872	0	0	831	96	168	87	225	196	0	205
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	70	872	0	0	927	0	0	255	225	196	205	0
Turn Type	D.P+P	D.P+P	NA			NA		Split	NA	custom	Prot		
Protected Phases	6	6	1 6			1		4	4	4	5		
Permitted Phases	1	1								6			
Detector Phase	6	6	1 6			1		4	4	4	5		
Switch Phase													
Minimum Initial (s)	8.0	8.0				10.0		10.0	10.0	10.0	8.0		
Minimum Split (s)	13.0	13.0				20.0		27.0	27.0	27.0	13.0		
Total Split (s)	15.0	15.0				50.0		30.0	30.0	30.0	15.0		
Total Split (%)	13.6%	13.6%				45.5%		27.3%	27.3%	27.3%	13.6%		
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		0.0				-2.0			0.0	-2.0	0.0		
Total Lost Time (s)		5.0				3.0			5.0	3.0	5.0		
Lead/Lag								Lead	Lead	Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None				C-Max		None	None	None	None		
Act Effct Green (s)		64.8	71.8			50.8			13.7	33.8	11.5	0.0	
Actuated g/C Ratio		0.59	0.65			0.46			0.12	0.31	0.10	0.00	
v/c Ratio		0.19	0.46			0.68			0.65	0.49	0.61	1.21	
Control Delay		11.8	9.8			31.3			71.0	14.0	58.0	0.0	
Queue Delay		0.0	0.5			1.3			0.0	0.0	0.0	0.0	
Total Delay		11.8	10.3			32.6			71.0	14.0	58.0	0.0	
LOS		B	B			C			E	B	E	A	
Approach Delay			10.5			32.6			44.3			28.3	
Approach LOS			B			C			D			C	
Stops (vph)		21	228			1204			233	111	176	117	
Fuel Used(gal)		0	4			15			6	3	4	1	
CO Emissions (g/hr)		27	306			1056			442	180	254	81	
NOx Emissions (g/hr)		5	60			205			86	35	49	16	
VOC Emissions (g/hr)		6	71			245			102	42	59	19	
Dilemma Vehicles (#)		0	0			0			0	0	0	0	
Queue Length 50th (ft)		15	84			313			98	42	72	0	
Queue Length 95th (ft)		44	175			263			133	97	108	0	
Internal Link Dist (ft)			163			296			732			258	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		378	1909			1364			714	597	333	169	
Starvation Cap Reductn		0	582			232			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	0.66			0.82			0.36	0.38	0.59	1.21	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 26.4 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 9: East Service Road & Seaport Boulevard



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	976	237	84	637	273	127
Future Volume (vph)	976	237	84	637	273	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	13	11	12
Storage Length (ft)		0	0		125	125
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor	0.94				0.90	
Frt	0.971					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	2884	0	0	3059	3046	1439
Flt Permitted				0.671	0.950	
Satd. Flow (perm)	2884	0	0	2065	2755	1439
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	392			533	498	
Travel Time (s)	8.9			12.1	11.3	
Confl. Peds. (#/hr)		275	275		40	63
Confl. Bikes (#/hr)		12				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Heavy Vehicles (%)	3%	0%	1%	4%	0%	1%
Parking (#/hr)				0		
Adj. Flow (vph)	1017	247	88	664	281	131
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1264	0	0	752	281	131
Turn Type	NA		Perm	NA	Prot	Prot
Protected Phases	1			1	4	4
Permitted Phases			1			
Detector Phase	1		1	1	4	4
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0
Minimum Split (s)	28.0		28.0	28.0	28.0	28.0
Total Split (s)	60.0		60.0	60.0	50.0	50.0
Total Split (%)	54.5%		54.5%	54.5%	45.5%	45.5%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0			-2.0	0.0	0.0
Total Lost Time (s)	3.0			3.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Act Effct Green (s)	86.7			86.7	15.3	15.3
Actuated g/C Ratio	0.79			0.79	0.14	0.14
v/c Ratio	0.56			0.46	0.66	0.66
Control Delay	3.0			5.4	38.0	44.7
Queue Delay	0.1			0.1	0.0	0.0
Total Delay	3.1			5.6	38.0	44.7
LOS	A			A	D	D
Approach Delay	3.1			5.6	40.1	
Approach LOS	A			A	D	
Stops (vph)	307			229	227	108
Fuel Used(gal)	6			5	4	2
CO Emissions (g/hr)	430			380	309	157
NOx Emissions (g/hr)	84			74	60	31
VOC Emissions (g/hr)	100			88	72	36
Dilemma Vehicles (#)	0			0	0	0
Queue Length 50th (ft)	16			72	76	68
Queue Length 95th (ft)	101			138	110	m115
Internal Link Dist (ft)	312			453	418	
Turn Bay Length (ft)					125	125
Base Capacity (vph)	2273			1627	1246	588
Starvation Cap Reductn	107			0	0	0
Spillback Cap Reductn	0			210	29	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.58			0.53	0.23	0.22

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.1 Intersection LOS: B
Intersection Capacity Utilization 91.0% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

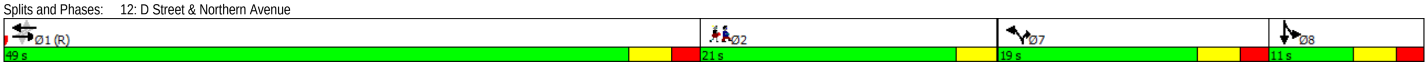
Splits and Phases: 10: B Street & Seaport Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	24	394	483	71	544	24	199	0	28	15	27	31	
Future Volume (vph)	24	394	483	71	544	24	199	0	28	15	27	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.92			0.99		0.96				0.91		
Frt		0.920			0.994				0.850		0.943		
Flt Protected		0.999			0.994		0.950				0.990		
Satd. Flow (prot)	0	3017	0	0	3436	0	1787	0	1615	0	1680	0	
Flt Permitted		0.926			0.742		0.950				0.990		
Satd. Flow (perm)	0	2795	0	0	2557	0	1708	0	1615	0	1610	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		371			5				109		28		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		376			325			372			366		
Travel Time (s)		8.5			7.4			8.5			8.3		
Confl. Peds. (#/hr)	52		181	181		52	23		41	41		23	
Confl. Bikes (#/hr)			16			31							
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.95	0.95	0.95	0.94	0.94	0.94	
Heavy Vehicles (%)	0%	4%	0%	0%	4%	0%	1%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	25	415	508	73	561	25	209	0	29	16	29	33	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	948	0	0	659	0	209	0	29	0	78	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	49.0	49.0		49.0	49.0		19.0		19.0	11.0	11.0		21.0
Total Split (%)	49.0%	49.0%		49.0%	49.0%		19.0%		19.0%	11.0%	11.0%		21%
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	Lead		Lead		Lead	Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Act Effct Green (s)		62.3			62.3		16.8		16.8		8.1		
Actuated g/C Ratio		0.62			0.62		0.17		0.17		0.08		
v/c Ratio		0.50			0.41		0.70		0.08		0.48		
Control Delay		8.1			12.2		51.2		0.4		39.5		
Queue Delay		0.0			0.0		0.0		0.0		0.0		
Total Delay		8.1			12.2		51.2		0.4		39.5		
LOS		A			B		D		A		D		
Approach Delay		8.1			12.2			45.0			39.5		
Approach LOS		A			B			D			D		
Stops (vph)		310			323		183		0		46		
Fuel Used(gal)		6			5		4		0		1		
CO Emissions (g/hr)		408			349		256		6		73		
NOx Emissions (g/hr)		79			68		50		1		14		
VOC Emissions (g/hr)		95			81		59		1		17		
Dilemma Vehicles (#)		0			0		0		0		0		
Queue Length 50th (ft)		96			109		126		0		31		
Queue Length 95th (ft)		181			184		194		0		75		
Internal Link Dist (ft)		296			245			292			286		
Turn Bay Length (ft)													
Base Capacity (vph)		1880			1593		310		370		162		
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		0.50			0.41		0.67		0.08		0.48		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 47 (47%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: D Street & Northern Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	1	437	142	195	395	10	143	30	273	16	41	8	
Future Volume (vph)	1	437	142	195	395	10	143	30	273	16	41	8	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12	
Storage Length (ft)	100		100	0		0	0		100	0		0	
Storage Lanes	1		1	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	0.95	0.95	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	0.80	0.94	1.00			0.60			0.88		
Frt			0.850		0.996				0.850		0.983		
Flt Protected				0.950				0.960			0.988		
Satd. Flow (prot)	0	3110	1252	1570	1624	0	0	1860	1454	0	1739	0	
Flt Permitted		0.814		0.421				0.960			0.988		
Satd. Flow (perm)	0	2531	1005	653	1624	0	0	1113	1454	0	1664	0	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					2				281		5		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		191			478			213			457		
Travel Time (s)		4.3			10.9			4.8			10.4		
Confl. Peds. (#/hr)	130		99	99		130	137		56	56		137	
Confl. Bikes (#/hr)			15			17						2	
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	
Parking (#/hr)			0										
Adj. Flow (vph)	1	451	146	199	403	10	147	31	281	17	45	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	452	146	199	413	0	0	178	281	0	71	0	
Turn Type	Perm	NA	Perm	D.P+P	NA		Prot	NA	custom	Split	NA		
Protected Phases		1		5	1 5		3		3 5	4	4		2
Permitted Phases	1		1	1									
Detector Phase	1	1	1	5	1 5		3		3 5	4	4		
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	6.0			8.0			6.0	6.0		8.0
Minimum Split (s)	19.0	19.0	19.0	14.0			14.0			12.0	12.0		24.0
Total Split (s)	40.0	40.0	40.0	19.0			15.0			12.0	12.0		24.0
Total Split (%)	36.4%	36.4%	36.4%	17.3%			13.6%			10.9%	10.9%		22%
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0			3.0	3.0		4.0
All-Red Time (s)	4.0	4.0	4.0	4.0			2.0			2.0	2.0		0.0
Lost Time Adjust (s)		0.0	0.0	0.0							-1.0		
Total Lost Time (s)		7.0	7.0	7.0							4.0		
Lead/Lag	Lead	Lead	Lead				Lead			Lag	Lag		Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	None			Max			Max	Max		None
Act Effct Green (s)		33.0	33.0	45.0	52.0			12.0	24.0		8.0		
Actuated g/C Ratio		0.30	0.30	0.41	0.47			0.11	0.22		0.07		
v/c Ratio		0.60	0.49	0.54	0.54			0.88	0.52		0.54		
Control Delay		36.1	37.7	23.5	21.8			87.8	6.7		83.6		
Queue Delay		0.0	0.0	0.0	0.4			0.0	0.0		0.0		
Total Delay		36.1	37.7	23.5	22.2			87.8	6.7		83.6		
LOS		D	D	C	C			F	A		F		
Approach Delay		36.5			22.6			38.2			83.6		
Approach LOS		D			C			D			F		
Stops (vph)		308	94	111	222			151	29		60		
Fuel Used(gal)		6	2	2	5			4	1		2		
CO Emissions (g/hr)		389	127	159	317			295	69		132		
NOx Emissions (g/hr)		76	25	31	62			57	13		26		
VOC Emissions (g/hr)		90	29	37	73			68	16		31		
Dilemma Vehicles (#)		0	0	0	0			0	0		0		
Queue Length 50th (ft)		110	67	77	165			126	0		48		
Queue Length 95th (ft)		164	124	127	236			#254	54		m#96		
Internal Link Dist (ft)		111			398			133			377		
Turn Bay Length (ft)			100						100				
Base Capacity (vph)		759	301	367	768			202	536		131		
Starvation Cap Reductn		0	0	0	92			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		0.60	0.49	0.54	0.61			0.88	0.52		0.54		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 91 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.0 — Intersection LOS: C
Intersection Capacity Utilization 69.6% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: A Street/Thomson St & Congress Street

Ø1 (R)	Ø2	Ø3	Ø4	Ø5
40 s	24 s	15 s	12 s	19 s

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	45	418	343	19	150	330	49	46	20	41	71	284	160
Future Volume (vph)	45	418	343	19	150	330	49	46	20	41	71	284	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0		150		0	0		0	0		125
Storage Lanes	0		1		1		0	1		0	0		1
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	1.00	1.00	1.00	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	0.72			0.97		0.92	0.96			0.99	
Frt			0.850			0.981			0.900				0.850
Flt Protected		0.995			0.950			0.950				0.990	
Satd. Flow (prot)	0	1686	1454	0	1610	2936	0	1805	1347	0	0	1598	1405
Flt Permitted		0.925			0.358			0.950				0.990	
Satd. Flow (perm)	0	1551	1052	0	607	2936	0	1661	1347	0	0	1582	1405
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			354			16			42				116
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		478				521			204			912	
Travel Time (s)		10.9				11.8			4.6			20.7	
Confl. Peds. (#/hr)	121		83	38	83		121	82		38	38		82
Confl. Bikes (#/hr)			10				8						
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.93	0.97	0.97	0.97	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	2%	17%	0%	0%	3%	0%
Parking (#/hr)						0	0						
Adj. Flow (vph)	46	431	354	20	161	355	53	47	21	42	76	302	170
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	477	354	0	181	408	0	47	63	0	0	378	170
Turn Type	Perm	NA	Perm	Perm	Perm	NA		Split	NA		Split	NA	Prot
Protected Phases		1				1		2	2		3	3	3
Permitted Phases	1		1	1	1								
Detector Phase	1	1	1	1	1	1		2	2		3	3	3
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0		30.0	30.0		33.0	33.0	33.0
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0		30.0	30.0		37.0	37.0	37.0
Total Split (%)	39.1%	39.1%	39.1%	39.1%	39.1%	39.1%		27.3%	27.3%		33.6%	33.6%	33.6%
Yellow Time (s)	3.0	3.0	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		9.0	9.0	9.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			11.0	11.0
Lead/Lag								Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?													
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	None
Act Effct Green (s)		56.1	56.1		56.1	56.1		9.7	9.7			26.0	26.0
Actuated g/C Ratio		0.51	0.51		0.51	0.51		0.09	0.09			0.24	0.24
v/c Ratio		0.60	0.50		0.59	0.27		0.30	0.40			1.00	0.40
Control Delay		11.0	3.2		19.6	8.4		51.7	29.1			74.1	12.5
Queue Delay		0.0	0.3		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		11.0	3.5		19.6	8.4		51.7	29.1			74.1	12.5
LOS		B	A		B	A		D	C			E	B
Approach Delay		7.8				11.8			38.8			55.0	
Approach LOS		A				B			D			D	
Stops (vph)		142	37		85	135		44	26			290	116
Fuel Used(gal)		4	2		2	3		1	1			9	2
CO Emissions (g/hr)		248	119		127	205		56	42			663	153
NOx Emissions (g/hr)		48	23		25	40		11	8			129	30
VOC Emissions (g/hr)		57	28		30	47		13	10			154	35
Dilemma Vehicles (#)		0	0		0	0		0	0			0	0
Queue Length 50th (ft)		92	14		43	35		32	14			~264	22
Queue Length 95th (ft)		152	25		84	70		68	56			m#462	m81
Internal Link Dist (ft)		398				441			124			832	
Turn Bay Length (ft)					150								125
Base Capacity (vph)		791	709		309	1505		410	338			377	420
Starvation Cap Reductn		1	71		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		0.60	0.55		0.59	0.27		0.11	0.19			1.00	0.40

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 97 (88%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 23.0 Intersection LOS: C
Intersection Capacity Utilization 97.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Boston Wharf Road (WSR) & Congress Street

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	61	541	418	28	67	111	55	45	128	68
Future Volume (vph)	61	541	418	28	67	111	55	45	128	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor	0.93		0.99			0.99			0.95	
Frt			0.991				0.850		0.957	
Flt Protected	0.950					0.982			0.965	
Satd. Flow (prot)	1624	3249	3263	0	0	3171	1454	0	3000	0
Flt Permitted	0.462					0.982			0.965	
Satd. Flow (perm)	738	3249	3263	0	0	3137	1454	0	2909	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			7				99			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	100			100	20		17	20		17
Confl. Bikes (#/hr)				3						
Peak Hour Factor	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	64	564	454	30	73	121	60	47	135	72
Shared Lane Traffic (%)										
Lane Group Flow (vph)	64	564	484	0	0	194	60	0	254	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Perm	Prot	
Protected Phases		1	1		2	2	2		3	
Permitted Phases	1							3		
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	32.0	32.0	32.0		30.0	30.0	30.0	33.0	33.0	
Total Split (s)	47.0	47.0	47.0		30.0	30.0	30.0	33.0	33.0	
Total Split (%)	42.7%	42.7%	42.7%		27.3%	27.3%	27.3%	30.0%	30.0%	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0		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	
Total Lost Time (s)	5.0	5.0	5.0			4.0	4.0		4.0	
Lead/Lag					Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)	67.8	67.8	67.8			13.2	13.2		16.0	
Actuated g/C Ratio	0.62	0.62	0.62			0.12	0.12		0.15	
v/c Ratio	0.14	0.28	0.24			0.51	0.23		0.60	
Control Delay	5.3	4.9	12.6			49.8	4.5		49.7	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.3	4.9	12.6			49.8	4.5		49.7	
LOS	A	A	B			D	A		D	
Approach Delay		4.9	12.6			39.1			49.7	
Approach LOS		A	B			D			D	
Stops (vph)	10	105	223			162	3		219	
Fuel Used(gal)	0	3	4			3	0		4	
CO Emissions (g/hr)	26	232	289			206	10		281	
NOx Emissions (g/hr)	5	45	56			40	2		55	
VOC Emissions (g/hr)	6	54	67			48	2		65	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	8	40	96			68	0		87	
Queue Length 95th (ft)	m16	m57	127			103	13		124	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	454	2002	2013			749	419		766	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.14	0.28	0.24			0.26	0.14		0.33	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 19.6 | Intersection LOS: B
Intersection Capacity Utilization 66.2% | ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	323	208	485	172	126	204	234	331	25	230	69
Future Volume (vph)	134	323	208	485	172	126	204	234	331	25	230	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	14	12	12	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)	25			25			25			25		
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		0.98		0.97	0.96		0.95				0.99	0.92
Frt			0.850		0.965				0.850			0.850
Flt Protected		0.986		0.950	0.978		0.950				0.995	
Satd. Flow (prot)	0	3150	1454	1464	2785	0	1841	1824	1439	0	3097	1405
Flt Permitted		0.986		0.950	0.978		0.950				0.890	
Satd. Flow (perm)	0	3102	1454	1416	2744	0	1753	1824	1439	0	2730	1293
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					33				341			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		509			995			220			498	
Travel Time (s)		11.6			22.6			5.0			11.3	
Confl. Peds. (#/hr)	71		21	21		71	23		70	70		23
Confl. Bikes (#/hr)			5			8						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	1%	2%	0%	1%	6%	0%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	138	333	214	500	177	130	210	241	341	26	240	72
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	471	214	250	557	0	210	241	341	0	266	72
Turn Type	Split	NA	Prot	Split	NA		Prot	NA	Prot	Perm	NA	custom
Protected Phases	2	2	2	1	1		3	3 4	3 4		4	4
Permitted Phases										4		2
Detector Phase	2	2	2	1	1		3	3 4	3 4	4	4	4
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	8.0
Minimum Split (s)	19.0	19.0	19.0	31.0	31.0		16.0			19.0	19.0	19.0
Total Split (s)	30.0	30.0	30.0	35.0	35.0		25.0			20.0	20.0	20.0
Total Split (%)	27.3%	27.3%	27.3%	31.8%	31.8%		22.7%			18.2%	18.2%	18.2%
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)	4.0	4.0	4.0	4.0	4.0		4.0			4.0	4.0	4.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0		-2.0				-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0				5.0	5.0
Lead/Lag	Lead	Lead	Lead				Lag					
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max	C-Max	C-Max		Max			None	None	None
Act Effct Green (s)		25.0	25.0	30.5	30.5		20.0	39.5	39.5		14.5	39.5
Actuated g/C Ratio		0.23	0.23	0.28	0.28		0.18	0.36	0.36		0.13	0.36
v/c Ratio		0.66	0.65	0.62	0.70		0.63	0.37	0.46		0.74	0.13
Control Delay		30.1	35.0	29.5	27.6		50.9	27.9	4.9		69.4	4.2
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		30.1	35.0	29.5	27.6		50.9	27.9	4.9		69.4	4.2
LOS		C	D	C	C		D	C	A		E	A
Approach Delay		31.7			28.2			24.1			55.5	
Approach LOS		C			C			C			E	
Stops (vph)		394	182	197	435		187	168	29		253	19
Fuel Used(gal)		7	3	4	10		3	3	1		6	0
CO Emissions (g/hr)		475	232	309	673		245	186	74		419	30
NOx Emissions (g/hr)		92	45	60	131		48	36	14		81	6
VOC Emissions (g/hr)		110	54	72	156		57	43	17		97	7
Dilemma Vehicles (#)		0	0	0	0		0	0	0		0	0
Queue Length 50th (ft)		146	125	135	156		138	123	0		106	3
Queue Length 95th (ft)		202	212	m81	m73		218	191	60		#153	m23
Internal Link Dist (ft)		429			915			140			418	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		715	330	406	796		334	663	740		372	554
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		0.66	0.65	0.62	0.70		0.63	0.36	0.46		0.72	0.13

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 93 (85%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 70.9% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: B Street & Congress Street

Ø1 (R)	Ø2	Ø3	Ø4
35 s	30 s	25 s	20 s

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	24	113	185	289	145	191	80	6	325	175	48	10	27	554	61
Future Volume (vph)	24	113	185	289	145	191	80	6	325	175	48	10	27	554	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.92			0.94				0.97				0.98	
Frt			0.967	0.850		0.971				0.968				0.986	
Flt Protected			0.984			0.983			0.950					0.997	
Satd. Flow (prot)	0	0	2775	1327	0	3073	0	0	2988	1574	0	0	0	3330	0
Flt Permitted			0.984			0.983			0.200					0.997	
Satd. Flow (perm)	0	0	2647	1327	0	2973	0	0	629	1574	0	0	0	3302	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						21				11				9	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				372	
Travel Time (s)			22.6			7.3				7.2				8.5	
Confl. Peds. (#/hr)	37	50		57	57		50	57	37		57	50	57		37
Confl. Bikes (#/hr)				7			5				4				8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	4%	3%	0%	2%	0%	0%	2%	3%	0%	0%	0%	1%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	25	119	195	304	158	208	87	7	353	190	52	10	28	565	62
Shared Lane Traffic (%)				31%											
Lane Group Flow (vph)	0	0	433	210	0	453	0	0	360	242	0	0	0	665	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm	Split	NA	
Protected Phases		1	1	1	4	4			2	2			3	3	
Permitted Phases	1							2				3			
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0	28.0	28.0	
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%	25.5%	25.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
Lead/Lag								Lead	Lead	Lead		Lag	Lag	Lag	
Lead-Lag Optimize?															
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Act Effct Green (s)			32.0	32.0		11.0			20.0	20.0				22.0	
Actuated g/C Ratio			0.29	0.29		0.10			0.18	0.18				0.20	
v/c Ratio			0.54	0.54		1.39			3.16	0.82				0.99	
Control Delay			21.0	23.9		229.3			1010.0	55.3				75.8	
Queue Delay			0.0	0.0		0.0			0.0	0.0				0.0	
Total Delay			21.0	23.9		229.3			1010.0	55.3				75.8	
LOS			C	C		F			F	E				E	
Approach Delay			22.0			229.3				626.2				75.8	
Approach LOS			C			F				F				E	
Stops (vph)			176	90		303			230	262				576	
Fuel Used(gal)			6	3		22			70	5				15	
CO Emissions (g/hr)			414	211		1550			4904	315				1058	
NOx Emissions (g/hr)			81	41		302			954	61				206	
VOC Emissions (g/hr)			96	49		359			1136	73				245	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			70	69		~218			~224	139				245	
Queue Length 95th (ft)			105	m116		#325			#323	#282				#371	
Internal Link Dist (ft)			915			239				237				292	
Turn Bay Length (ft)				150											
Base Capacity (vph)			807	386		326			114	295				673	
Starvation Cap Reductn			0	0		0			0	0				0	
Spillback Cap Reductn			0	0		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.54	0.54		1.39			3.16	0.82				0.99	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.16
Intersection Signal Delay: 230.8 — Intersection LOS: F
Intersection Capacity Utilization 87.7% — ICU Level of Service E
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: D Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	31	0	4	28	1	0	555	0	0	993	0	
Future Volume (vph)	0	31	0	4	28	1	0	555	0	0	993	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt					0.996								
Flt Protected					0.994								
Satd. Flow (prot)	0	912	0	0	972	0	0	4776	0	0	3291	0	
Flt Permitted					0.961								
Satd. Flow (perm)	0	912	0	0	940	0	0	4776	0	0	3291	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					1								
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									67				
Confl. Bikes (#/hr)									4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	1%	0%	0%	2%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	34	0	4	30	1	0	584	0	0	1013	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	34	0	0	35	0	0	584	0	0	1013	0	
Turn Type		NA		Perm	NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		25.0		25.0	25.0			74.0					11.0
Total Split (%)		22.7%		22.7%	22.7%			67.3%					10%
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Recall Mode		None		None	None			C-Max					Max
Act Effct Green (s)		10.7			10.7			82.1			93.9		
Actuated g/C Ratio		0.10			0.10			0.75			0.85		
v/c Ratio		0.38			0.38			0.16			0.36		
Control Delay		58.4			56.6			5.5			2.4		
Queue Delay		0.0			0.0			0.2			0.7		
Total Delay		58.4			56.6			5.6			3.1		
LOS		E			E			A			A		
Approach Delay		58.4			56.6			5.6			3.1		
Approach LOS		E			E			A			A		
Stops (vph)		30			30			182			200		
Fuel Used(gal)		1			1			3			4		
CO Emissions (g/hr)		44			42			202			283		
NOx Emissions (g/hr)		8			8			39			55		
VOC Emissions (g/hr)		10			10			47			66		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		23			23			58			60		
Queue Length 95th (ft)		54			55			38			m81		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		165			171			3562			2808		
Starvation Cap Reductn		0			0			1923			1335		
Spillback Cap Reductn		0			0			66			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.21			0.20			0.36			0.69		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 44.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: D Street & Transitway

Ø1 (R)	Ø2	Ø3
74 s	11 s	25 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	439	555	534	464	
Future Volume (vph)	0	0	439	555	534	464	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.98		0.95		
Frt					0.930		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1679	3217	2916	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1645	3217	2916	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					223		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			49			49	
Confl. Bikes (#/hr)						15	
Peak Hour Factor	0.25	0.25	0.96	0.96	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	1%	
Adj. Flow (vph)	0	0	457	578	551	478	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	457	578	1029	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Recall Mode			Max		C-Max		None
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.94	0.19	0.59		
Control Delay			60.1	1.9	11.7		
Queue Delay			28.2	0.0	1.1		
Total Delay			88.3	1.9	12.8		
LOS			F	A	B		
Approach Delay				40.0	12.8		
Approach LOS				D	B		
Stops (vph)			399	53	271		
Fuel Used(gal)			9	2	6		
CO Emissions (g/hr)			600	125	431		
NOx Emissions (g/hr)			117	24	84		
VOC Emissions (g/hr)			139	29	100		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			342	0	80		
Queue Length 95th (ft)			m#473	m87	193		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			488	3024	1750		
Starvation Cap Reductn			55	420	442		
Spillback Cap Reductn			0	0	3		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			1.06	0.22	0.79		

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: 0.94
Intersection Signal Delay: 26.4 Intersection LOS: C
Intersection Capacity Utilization 70.1% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: D Street & I-90 Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	590	120	29	349	447	77	278	28	215	188	130
Future Volume (vph)	270	590	120	29	349	447	77	278	28	215	188	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.98				0.92	0.95	0.99		0.96	0.96	
Frt		0.975				0.850		0.986			0.948	
Flt Protected	0.950			0.950			0.950			0.950	0.993	
Satd. Flow (prot)	1555	3032	0	1464	1730	1599	1593	3337	0	1401	2746	0
Flt Permitted	0.269			0.137			0.950			0.950	0.993	
Satd. Flow (perm)	430	3032	0	211	1730	1473	1516	3337	0	1340	2728	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		27						8			71	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	37		54	54		37	51		40	40		51
Confl. Bikes (#/hr)			12			16			2			9
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	7%	1%	11%	12%	3%	2%	7%	18%	2%	12%	0%
Parking (#/hr)			0						0			
Adj. Flow (vph)	284	621	126	32	379	486	84	302	30	234	204	141
Shared Lane Traffic (%)										26%		
Lane Group Flow (vph)	284	747	0	32	379	486	84	332	0	173	406	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	19.0			35.0	35.0	29.0	27.0	27.0		29.0	29.0	
Total Split (%)	17.3%			31.8%	31.8%	26.4%	24.5%	24.5%		26.4%	26.4%	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Act Effct Green (s)	41.2	48.2		29.2	29.2	52.0	21.0	21.0		21.8	21.8	
Actuated g/C Ratio	0.37	0.44		0.27	0.27	0.47	0.19	0.19		0.20	0.20	
v/c Ratio	1.00	0.56		0.58	0.83	0.67	0.28	0.52		0.62	0.68	
Control Delay	74.6	11.6		75.8	51.4	17.8	40.9	42.2		42.5	31.5	
Queue Delay	2.9	0.0		0.0	0.0	4.9	0.0	0.5		0.4	0.2	
Total Delay	77.5	11.6		75.8	51.4	22.8	40.9	42.8		42.9	31.6	
LOS	E	B		E	D	C	D	D		D	C	
Approach Delay		29.8			36.8			42.4			35.0	
Approach LOS		C			D			D			D	
Stops (vph)	158	398		18	230	248	65	261		146	351	
Fuel Used(gal)	6	7		1	7	5	1	6		3	5	
CO Emissions (g/hr)	441	517		47	455	351	98	394		178	364	
NOx Emissions (g/hr)	86	101		9	88	68	19	77		35	71	
VOC Emissions (g/hr)	102	120		11	105	81	23	91		41	84	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	73	77		15	179	139	51	108		129	129	
Queue Length 95th (ft)	#286	140		m#67	#396	227	98	156		219	196	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	283	1343		55	459	738	304	643		292	630	
Starvation Cap Reductn	0	0		0	0	0	0	0		12	16	
Spillback Cap Reductn	3	0		0	0	185	0	88		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.56		0.58	0.83	0.88	0.28	0.60		0.62	0.66	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 109 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 34.8 Intersection LOS: C
Intersection Capacity Utilization 91.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

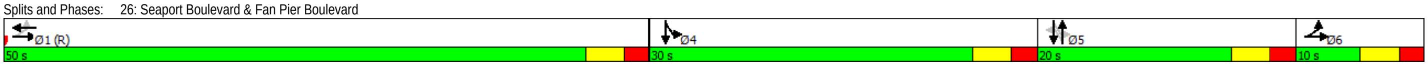
Splits and Phases: 22: D Street & Summer Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	997	1	0	883	88	9	13	0	81	45	189
Future Volume (vph)	39	997	1	0	883	88	9	13	0	81	45	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
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
Frt					0.986						0.919	
Flt Protected	0.950							0.980			0.987	
Satd. Flow (prot)	1805	3610	0	0	3559	0	0	1862	0	0	1723	0
Flt Permitted	0.136							0.727			0.910	
Satd. Flow (perm)	258	3610	0	0	3559	0	0	1381	0	0	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12						77	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		290			225			430			328	
Travel Time (s)		6.6			5.1			9.8			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	1084	1	0	960	96	10	14	0	88	49	205
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	1085	0	0	1056	0	0	24	0	0	342	0
Turn Type	D.P+P	NA			NA		Perm	NA		D.P+P	NA	
Protected Phases	6	1 6			1			5		4	4 5	
Permitted Phases	1						5			5		
Detector Phase	6	1 6			1		5	5		4	4 5	
Switch Phase												
Minimum Initial (s)	4.0				8.0		8.0	8.0		8.0		
Minimum Split (s)	9.0				22.0		20.0	20.0		27.0		
Total Split (s)	10.0				50.0		20.0	20.0		30.0		
Total Split (%)	9.1%				45.5%		18.2%	18.2%		27.3%		
Yellow Time (s)	3.0				3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0				2.0		2.0	2.0		2.0		
Lost Time Adjust (s)	0.0				0.0			0.0				
Total Lost Time (s)	5.0				5.0			5.0				
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None				C-Max		None	None		None		
Act Effct Green (s)	62.6	67.6			46.6			8.1			27.4	
Actuated g/C Ratio	0.57	0.61			0.42			0.07			0.25	
v/c Ratio	0.11	0.49			0.70			0.24			0.72	
Control Delay	9.3	9.3			25.1			29.7			33.9	
Queue Delay	0.0	0.3			1.3			0.0			0.0	
Total Delay	9.3	9.6			26.4			29.7			33.9	
LOS	A	A			C			C			C	
Approach Delay		9.6			26.4			29.7			33.9	
Approach LOS		A			C			C			C	
Stops (vph)	11	272			535			25			211	
Fuel Used(gal)	0	6			10			0			4	
CO Emissions (g/hr)	16	395			673			30			290	
NOx Emissions (g/hr)	3	77			131			6			56	
VOC Emissions (g/hr)	4	92			156			7			67	
Dilemma Vehicles (#)	0	0			0			0			0	
Queue Length 50th (ft)	10	134			221			11			160	
Queue Length 95th (ft)	m19	134			302			m23			231	
Internal Link Dist (ft)		210			145			350			248	
Turn Bay Length (ft)	125											
Base Capacity (vph)	371	2219			1515			188			624	
Starvation Cap Reductn	0	503			254			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.11	0.63			0.84			0.13			0.55	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 20.0 Intersection LOS: C
Intersection Capacity Utilization 61.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Seaport Boulevard & Fan Pier Boulevard



Movement	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	3	12	5	394	9	1	8	80
Future Volume (Veh/h)	3	12	5	394	9	1	8	80
Sign Control	Free				Free		Stop	
Grade	0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.98	0.98	0.98
Hourly flow rate (vph)	3	13	0	424	10	0	8	82
Pedestrians	213						83	
Lane Width (ft)	11.0						11.0	
Walking Speed (ft/s)	4.0						4.0	
Percent Blockage	16						6	
Right turn flare (veh)								
Median type	None				None			
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked			0.00			0.00		
vC, conflicting volume			0	99		0	1164	92
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			0	99		0	1164	92
tC, single (s)			0.0	4.1		0.0	6.4	6.2
tC, 2 stage (s)								
tF (s)			0.0	2.2		0.0	3.5	3.3
p0 queue free %			0	70		0	93	91
cM capacity (veh/h)			0	1411		0	119	906

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	16	434	90
Volume Left	0	424	8
Volume Right	13	0	82
cSH	1700	1411	571
Volume to Capacity	0.01	0.30	0.16
Queue Length 95th (ft)	0	32	14
Control Delay (s)	0.0	8.5	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	8.5	12.5
Approach LOS			B

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	35	54	1	260	24	18	148
Future Volume (Veh/h)	35	54	1	260	24	18	148
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.92	0.97	0.97
Hourly flow rate (vph)	38	58	0	283	26	19	153
Pedestrians						407	
Lane Width (ft)						11.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						31	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)				1160			
pX, platoon unblocked			0.00				
vC, conflicting volume	716		0			837	703
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	716		0			837	703
tC, single (s)	4.1		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.2		0.0			3.5	3.3
p0 queue free %	94		0			91	50
cM capacity (veh/h)	616		0			219	304

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	96	309	172
Volume Left	38	0	19
Volume Right	0	26	153
cSH	616	1700	292
Volume to Capacity	0.06	0.18	0.59
Queue Length 95th (ft)	5	0	87
Control Delay (s)	4.9	0.0	33.7
Lane LOS	A		D
Approach Delay (s)	4.9	0.0	33.7
Approach LOS			D

Intersection Summary			
Average Delay	10.9		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	1	0	73	0	10	159	0	0	27	0	40	171	125
Future Volume (Veh/h)	1	0	73	0	10	159	0	0	27	0	40	171	125
Sign Control			Free			Free			Stop			Stop	
Grade			0%			0%			0%			0%	
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	0.90
Hourly flow rate (vph)	0	0	79	0	11	173	0	0	29	0	43	186	139
Pedestrians												363	
Lane Width (ft)												12.0	
Walking Speed (ft/s)												4.0	
Percent Blockage												30	
Right turn flare (veh)													
Median type			None			None							
Median storage veh)													
Upstream signal (ft)						858							
pX, platoon unblocked	0.00												
vC, conflicting volume	0	536			79			506	637	79	652	637	536
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	0	536			79			506	637	79	652	637	536
tC, single (s)	0.0	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	0.0	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	100			99			100	89	100	77	32	63
cM capacity (veh/h)	0	727			1532			109	275	987	188	275	376

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	79	184	29	368
Volume Left	0	11	0	43
Volume Right	0	0	0	139
cSH	727	1532	275	289
Volume to Capacity	0.00	0.01	0.11	1.27
Queue Length 95th (ft)	0	1	9	442
Control Delay (s)	0.0	0.5	19.6	183.9
Lane LOS		A	C	F
Approach Delay (s)	0.0	0.5	19.6	183.9
Approach LOS			C	F

Intersection Summary			
Average Delay	103.5		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	3	12	105	0	0	149	25	0	83	0	90	0	13
Future Volume (Veh/h)	3	12	105	0	0	149	25	0	83	0	90	0	13
Sign Control			Free			Free			Stop			Stop	
Grade			0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	13	113	0	0	162	27	0	90	0	98	0	14
Pedestrians						15						285	
Lane Width (ft)						12.0						12.0	
Walking Speed (ft/s)						4.0						4.0	
Percent Blockage						1						24	
Right turn flare (veh)													
Median type			None			None							
Median storage veh)													
Upstream signal (ft)						655							
pX, platoon unblocked	0.00												
vC, conflicting volume	0	474			113			328	613	128	660	600	460
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	0	474			113			328	613	128	660	600	460
tC, single (s)	0.0	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	0.0	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	98			100			100	71	100	46	100	97
cM capacity (veh/h)	0	838			1489			492	308	916	181	314	461

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	126	189	90	112
Volume Left	13	0	0	98
Volume Right	0	27	0	14
cSH	838	1700	308	196
Volume to Capacity	0.02	0.11	0.29	0.57
Queue Length 95th (ft)	1	0	30	78
Control Delay (s)	1.1	0.0	21.4	45.6
Lane LOS	A		C	E
Approach Delay (s)	1.1	0.0	21.4	45.6
Approach LOS			C	E

Intersection Summary			
Average Delay	13.9		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	1	11	190	0	14	0	163	31	0	0	0	51	0	10
Future Volume (Veh/h)	1	11	190	0	14	0	163	31	0	0	0	51	0	10
Sign Control			Free				Free			Stop			Stop	
Grade			0%				0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.95
Hourly flow rate (vph)	0	11	194	0	0	0	177	34	0	0	0	54	0	11
Pedestrians			70				45						140	
Lane Width (ft)			12.0				12.0						12.0	
Walking Speed (ft/s)			4.0				4.0						4.0	
Percent Blockage			6				4						12	
Right turn flare (veh)														
Median type			None				None							
Median storage veh)														
Upstream signal (ft)							278							
pX, platoon unblocked	0.00				0.00									
vC, conflicting volume	0	351			0	194			491	567	239	595	550	404
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	0	351			0	194			491	567	239	595	550	404
tC, single (s)	0.0	4.1			0.0	4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)														
tF (s)	0.0	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	99			0	100			100	100	100	83	100	98
cM capacity (veh/h)	0	1077			0	1391			409	381	775	322	390	541

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	205	211	0	65
Volume Left	11	0	0	54
Volume Right	0	34	0	11
cSH	1077	1391	1700	346
Volume to Capacity	0.01	0.00	0.00	0.19
Queue Length 95th (ft)	1	0	0	17
Control Delay (s)	0.5	0.0	0.0	17.8
Lane LOS	A		A	C
Approach Delay (s)	0.5	0.0	0.0	17.8
Approach LOS			A	C

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	5	899	199	2	56	715	0	0
Future Volume (Veh/h)	5	899	199	2	56	715	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.25	0.25
Hourly flow rate (vph)	0	946	209	0	58	737	0	0
Pedestrians							191	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		600				376		
pX, platoon unblocked	0.00			0.00	0.90		0.93	0.90
vC, conflicting volume	0			0	1346		1726	768
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	1157		1286	513
tC, single (s)	0.0			0.0	4.1		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.2		3.5	3.3
p0 queue free %	0			0	89		100	100
cM capacity (veh/h)	0			0	549		133	459

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	631	524	304	491
Volume Left	0	0	58	0
Volume Right	0	209	0	0
cSH	1700	1700	549	1700
Volume to Capacity	0.37	0.31	0.11	0.29
Queue Length 95th (ft)	0	0	9	0
Control Delay (s)	0.0	0.0	3.6	0.0
Lane LOS			A	
Approach Delay (s)	0.0		1.4	
Approach LOS				

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		60.8%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	432	0	6	388	157	4	0	5	85	0	3
Future Volume (Veh/h)	75	432	0	6	388	157	4	0	5	85	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	455	0	6	400	162	4	0	5	92	0	3
Pedestrians											547	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											46	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.84			0.82			0.90	0.90	0.82	0.90	0.90	0.84
vC, conflicting volume	1109			455			1109	1734	455	1658	1653	1028
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1035			219			663	1361	219	1276	1271	939
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	75			99			98	100	99	0	100	98
cM capacity (veh/h)	311			1111			174	54	674	37	61	148

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	534	568	9	95
Volume Left	79	6	4	92
Volume Right	0	162	5	3
cSH	311	1111	296	38
Volume to Capacity	0.25	0.01	0.03	2.52
Queue Length 95th (ft)	25	0	2	264
Control Delay (s)	9.1	0.2	17.6	918.3
Lane LOS	A	A	C	F
Approach Delay (s)	9.1	0.2	17.6	918.3
Approach LOS			C	F

Intersection Summary			
Average Delay	76.6		
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	508	503	43	71	48
Future Volume (Veh/h)	14	508	503	43	71	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.97	0.97	0.96	0.96
Hourly flow rate (vph)	14	518	519	44	74	50
Pedestrians					393	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					33	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1094	191			
pX, platoon unblocked	0.82				0.88	0.82
vC, conflicting volume	956				1480	934
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841				1214	814
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				36	76
cM capacity (veh/h)	446				116	208

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	532	563	124
Volume Left	14	0	74
Volume Right	0	44	50
cSH	446	1700	141
Volume to Capacity	0.03	0.33	0.88
Queue Length 95th (ft)	2	0	146
Control Delay (s)	0.9	0.0	107.8
Lane LOS	A		F
Approach Delay (s)	0.9	0.0	107.8
Approach LOS			F

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	127	29	5	0	351	132	11	0	20	4
Future Volume (vph)	7	4	127	29	5	0	351	132	11	0	20	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.93	0.97		0.98			0.99				
Frt			0.850					0.988			0.977	
Flt Protected		0.968			0.959		0.950					
Satd. Flow (prot)	0	1839	1417	0	1776	0	1719	1860	0	0	1856	0
Flt Permitted		0.816			0.746		0.950					
Satd. Flow (perm)	0	1439	1373	0	1359	0	1719	1860	0	0	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138					12			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		278			172			335			275	
Travel Time (s)		6.3			3.9			7.6			6.3	
Confl. Peds. (#/hr)	35		10	10		35			31	31		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	14%	3%	0%	0%	5%	0%	0%	0%	0%	0%
Adj. Flow (vph)	8	4	138	32	5	0	369	139	12	0	53	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	138	0	37	0	369	151	0	0	64	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA			NA	
Protected Phases		5	1		5		1	1 4			4	
Permitted Phases	5		5	5						4		
Detector Phase	5	5	1	5	5		1	1 4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0		22.0			22.0	22.0	
Total Split (s)	22.0	22.0	63.0	22.0	22.0		63.0			25.0	25.0	
Total Split (%)	20.0%	20.0%	57.3%	20.0%	20.0%		57.3%			22.7%	22.7%	
Maximum Green (s)	17.0	17.0	58.0	17.0	17.0		58.0			20.0	20.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0	
Lead/Lag	Lag	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	None	None	C-Max	None	None		C-Max			None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0			0	0	
Act Effct Green (s)		8.7	88.1		8.7		82.7	98.5			8.9	
Actuated g/C Ratio		0.08	0.80		0.08		0.75	0.90			0.08	
v/c Ratio		0.11	0.12		0.35		0.29	0.09			0.41	
Control Delay		48.6	0.6		56.9		4.2	1.3			50.1	
Queue Delay		0.0	0.0		0.0		0.5	0.0			0.0	
Total Delay		48.6	0.6		56.9		4.7	1.3			50.1	
LOS		D	A		E		A	A			D	
Approach Delay		4.4			56.9			3.7			50.1	
Approach LOS		A			E			A			D	
Stops (vph)		12	5		32		86	15			20	
Fuel Used(gal)		0	0		1		2	0			0	
CO Emissions (g/hr)		14	22		43		118	35			28	
NOx Emissions (g/hr)		3	4		8		23	7			6	
VOC Emissions (g/hr)		3	5		10		27	8			7	
Dilemma Vehicles (#)		0	0		0		0	0			0	
Queue Length 50th (ft)		8	0		25		69	13			39	
Queue Length 95th (ft)		27	10		59		96	m20			30	
Internal Link Dist (ft)		198			92			255			195	
Turn Bay Length (ft)												
Base Capacity (vph)		222	1160		210		1291	1773			344	
Starvation Cap Reductn		0	0		0		535	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.05	0.12		0.18		0.49	0.09			0.19	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 46.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	1102	106	18	712	33	79	68	41	33	42	79
Future Volume (vph)	163	1102	106	18	712	33	79	68	41	33	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	80		0	0		0	0		0	0		100
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.98			0.92			0.94	0.92
Frt		0.987			0.994			0.970				0.850
Flt Protected	0.950				0.999			0.979			0.979	
Satd. Flow (prot)	1533	2827	0	0	2939	0	0	1290	0	0	1403	1255
Flt Permitted	0.256				0.691			0.840			0.820	
Satd. Flow (perm)	413	2827	0	0	2033	0	0	1078	0	0	1105	1153
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			5			14				85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1029			308			511			339	
Travel Time (s)		23.4			7.0			11.6			7.7	
Confl. Peds. (#/hr)	130		69	69		130	46		157	157		46
Confl. Bikes (#/hr)			29			8			5			2
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.92	0.92	0.92	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	0%	0%	6%	38%	7%	2%	0%	35%	0%	12%
Parking (#/hr)						0		0	0			
Adj. Flow (vph)	170	1148	110	19	734	34	86	74	45	35	45	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1258	0	0	787	0	0	205	0	0	80	85
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	6	1 6			1			5			5	
Permitted Phases	1			1			5			5		5
Detector Phase	6	1 6		1	1		5	5		5	5	5
Switch Phase												
Minimum Initial (s)	4.0			10.0	10.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	9.0			23.0	23.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	20.0			50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	18.2%			45.5%	45.5%		36.4%	36.4%		36.4%	36.4%	36.4%
Maximum Green (s)	15.0			45.0	45.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0		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)	3.0				3.0			3.0			3.0	3.0
Lead/Lag	Lag						Lead	Lead		Lead	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)				7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)				5.0	5.0		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0		0	0	0
Act Effct Green (s)	75.0	78.0			52.0			26.0			26.0	26.0
Actuated g/C Ratio	0.68	0.71			0.47			0.24			0.24	0.24
v/c Ratio	0.33	0.63			0.82			0.77			0.31	0.25
Control Delay	6.0	5.1			21.7			51.9			44.7	16.9
Queue Delay	0.0	0.1			0.0			0.0			0.0	0.0
Total Delay	6.0	5.3			21.7			51.9			44.7	16.9
LOS	A	A			C			D			D	B
Approach Delay		5.3			21.7			51.9			30.4	
Approach LOS		A			C			D			C	
Stops (vph)	45	340			260			301			59	46
Fuel Used(gal)	2	13			7			5			1	1
CO Emissions (g/hr)	123	897			464			343			84	51
NOx Emissions (g/hr)	24	174			90			67			16	10
VOC Emissions (g/hr)	28	208			108			79			19	12
Dilemma Vehicles (#)	0	0			0			0			0	0
Queue Length 50th (ft)	18	68			61			113			51	13
Queue Length 95th (ft)	m15	m55			#321			142			87	43
Internal Link Dist (ft)		949			228			431			259	
Turn Bay Length (ft)	80											100
Base Capacity (vph)	515	2008			963			371			371	444
Starvation Cap Reductn	0	0			1			0			0	0
Spillback Cap Reductn	0	135			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.33	0.67			0.82			0.55			0.22	0.19

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 91.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sleeper Street & Seaport Boulevard

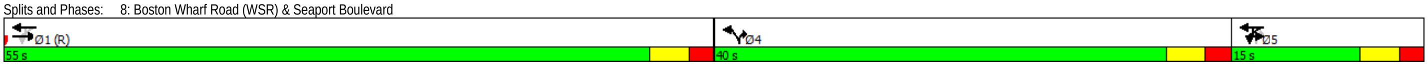
Ø1 (R)	Ø5	Ø6
50 s	40 s	20 s

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	733	302	15	90	839	155	49
Future Volume (vph)	733	302	15	90	839	155	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12
Storage Length (ft)		0		100		0	100
Storage Lanes		0		1		1	1
Taper Length (ft)				25		25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.99						
Frt	0.956						0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	2774	0	0	1520	2935	1608	1454
Flt Permitted				0.196		0.950	
Satd. Flow (perm)	2774	0	0	314	2935	1608	1454
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)	77						51
Link Speed (mph)	30				30	30	
Link Distance (ft)	139				255	912	
Travel Time (s)	3.2				5.8	20.7	
Confl. Bikes (#/hr)		20					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	8%	5%	0%	8%	7%	1%	0%
Adj. Flow (vph)	797	328	16	98	912	161	51
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1125	0	0	114	912	161	51
Turn Type	NA		D.P+P	D.P+P	NA	Prot	custom
Protected Phases	1		5	5	1 5	4	4
Permitted Phases			1	1			5
Detector Phase	1		5	5	1 5	4	4
Switch Phase							
Minimum Initial (s)	10.0		8.0	8.0		8.0	8.0
Minimum Split (s)	24.0		15.0	15.0		30.0	30.0
Total Split (s)	55.0		15.0	15.0		40.0	40.0
Total Split (%)	50.0%		13.6%	13.6%		36.4%	36.4%
Maximum Green (s)	50.0		10.0	10.0		35.0	35.0
Yellow Time (s)	3.0		3.0	3.0		3.0	3.0
All-Red Time (s)	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0			-1.0		-1.0	0.0
Total Lost Time (s)	3.0			4.0		4.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0
Recall Mode	C-Max		None	None		None	None
Walk Time (s)	7.0					7.0	7.0
Flash Dont Walk (s)	8.0					18.0	18.0
Pedestrian Calls (#/hr)	0					0	0
Act Effct Green (s)	71.5			81.5	86.5	16.5	30.5
Actuated g/C Ratio	0.65			0.74	0.79	0.15	0.28
v/c Ratio	0.61			0.32	0.40	0.67	0.12
Control Delay	5.6			7.7	3.9	55.7	8.4
Queue Delay	0.0			0.0	0.3	0.0	0.0
Total Delay	5.6			7.7	4.2	55.7	8.4
LOS	A			A	A	E	A
Approach Delay	5.6				4.6	44.4	
Approach LOS	A				A	D	
Stops (vph)	316			28	195	142	17
Fuel Used(gal)	4			1	3	4	1
CO Emissions (g/hr)	283			37	238	255	37
NOx Emissions (g/hr)	55			7	46	50	7
VOC Emissions (g/hr)	66			9	55	59	9
Dilemma Vehicles (#)	0			0	0	0	0
Queue Length 50th (ft)	31			15	82	108	4
Queue Length 95th (ft)	43			54	108	m162	m12
Internal Link Dist (ft)	59				175	832	
Turn Bay Length (ft)				100			100
Base Capacity (vph)	1830			353	2292	526	502
Starvation Cap Reductn	8			0	674	0	0
Spillback Cap Reductn	0			0	128	0	0
Storage Cap Reductn	0			0	0	0	0
Reduced v/c Ratio	0.62			0.32	0.56	0.31	0.10

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	10	70	718	0	0	666	103	187	320	130	98	0	80
Future Volume (vph)	10	70	718	0	0	666	103	187	320	130	98	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	0		1	2		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor						0.96			0.98		0.91	0.46	
Frt						0.980				0.850		0.850	
Flt Protected		0.950							0.982		0.950		
Satd. Flow (prot)	0	1373	2737	0	0	2719	0	0	3151	1405	2764	0	0
Flt Permitted		0.199							0.982		0.950		
Satd. Flow (perm)	0	288	2737	0	0	2719	0	0	3074	1405	2527	0	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						18				135		169	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			262			376			812			335	
Travel Time (s)			6.0			8.5			18.5			7.6	
Confl. Peds. (#/hr)	50	127					127	50		74	74		50
Confl. Bikes (#/hr)							26						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	21%	9%	0%	0%	9%	7%	0%	2%	0%	14%	0%	13%
Parking (#/hr)			0	0									
Adj. Flow (vph)	11	76	780	0	0	709	110	203	348	141	107	0	87
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	87	780	0	0	819	0	0	551	141	107	87	0
Turn Type	D.P+P	D.P+P	NA			NA		Split	NA	Prot	Prot		
Protected Phases	6	6	1 6			1		4	4	4	5		
Permitted Phases	1	1											
Detector Phase	6	6	1 6			1		4	4	4	5		
Switch Phase													
Minimum Initial (s)	4.0	4.0				10.0		8.0	8.0	8.0	8.0		
Minimum Split (s)	9.0	9.0				20.0		27.0	27.0	27.0	13.0		
Total Split (s)	10.0	10.0				45.0		35.0	35.0	35.0	20.0		
Total Split (%)	9.1%	9.1%				40.9%		31.8%	31.8%	31.8%	18.2%		
Maximum Green (s)	5.0	5.0				40.0		30.0	30.0	30.0	15.0		
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		0.0				-2.0			0.0	-2.0	0.0		
Total Lost Time (s)		5.0				3.0			5.0	3.0	5.0		
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		
Recall Mode	None	None				C-Max		None	None	None	None		
Walk Time (s)						7.0		7.0	7.0	7.0			
Flash Dont Walk (s)						8.0		15.0	15.0	15.0			
Pedestrian Calls (#/hr)						0		0	0	0			
Act Effct Green (s)		56.4	63.4			44.1			24.3	26.3	9.2	0.0	
Actuated g/C Ratio		0.51	0.58			0.40			0.22	0.24	0.08	0.00	
v/c Ratio		0.30	0.49			0.74			0.79	0.32	0.46	0.51	
Control Delay		18.4	13.8			21.1			41.9	7.8	57.0	0.0	
Queue Delay		0.0	0.8			3.7			0.0	0.0	0.0	0.0	
Total Delay		18.4	14.5			24.8			41.9	7.8	57.0	0.0	
LOS		B	B			C			D	A	E	A	
Approach Delay			14.9			24.8			35.0			31.4	
Approach LOS			B			C			C			C	
Stops (vph)		32	234			540			475	53	93	44	
Fuel Used(gal)		1	5			9			10	1	2	0	
CO Emissions (g/hr)		45	334			598			710	92	133	32	
NOx Emissions (g/hr)		9	65			116			138	18	26	6	
VOC Emissions (g/hr)		10	77			139			165	21	31	7	
Dilemma Vehicles (#)		0	0			0			0	0	0	0	
Queue Length 50th (ft)		22	95			230			197	14	39	0	
Queue Length 95th (ft)		49	142			312			241	m29	68	0	
Internal Link Dist (ft)			182			296			732			255	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		289	1578			1101			859	504	376	169	
Starvation Cap Reductn		0	455			197			0	0	0	0	
Spillback Cap Reductn		0	164			0			0	8	0	0	
Storage Cap Reductn		0	0			0			0	0	0	0	
Reduced v/c Ratio		0.30	0.69			0.91			0.64	0.28	0.28	0.51	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: East Service Road & Seaport Boulevard

Ø1 (R)	Ø4	Ø5	Ø6
45 s	35 s	20 s	10 s

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	845	111	49	373	393	133
Future Volume (vph)	845	111	49	373	393	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	13	11	12
Storage Length (ft)		0	0		125	125
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor	1.00					
Frt	0.983					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	2888	0	0	2486	2901	1358
Flt Permitted				0.757	0.950	
Satd. Flow (perm)	2888	0	0	1893	2901	1358
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	392			591	498	
Travel Time (s)	8.9			13.4	11.3	
Confl. Bikes (#/hr)		23				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	5%	24%	28%	5%	7%
Parking (#/hr)				0		
Adj. Flow (vph)	918	121	53	405	427	145
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1039	0	0	458	427	145
Turn Type	NA		Perm	NA	Prot	Prot
Protected Phases	1			1	4	4
Permitted Phases			1			
Detector Phase	1		1	1	4	4
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0
Minimum Split (s)	28.0		28.0	28.0	28.0	28.0
Total Split (s)	65.0		65.0	65.0	45.0	45.0
Total Split (%)	59.1%		59.1%	59.1%	40.9%	40.9%
Maximum Green (s)	60.0		60.0	60.0	40.0	40.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0			-2.0	0.0	0.0
Total Lost Time (s)	3.0			3.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0		16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	80.9			80.9	21.1	21.1
Actuated g/C Ratio	0.74			0.74	0.19	0.19
v/c Ratio	0.49			0.33	0.77	0.56
Control Delay	13.6			6.4	47.3	44.6
Queue Delay	1.2			0.0	0.1	0.0
Total Delay	14.9			6.4	47.4	44.6
LOS	B			A	D	D
Approach Delay	14.9			6.4	46.7	
Approach LOS	B			A	D	
Stops (vph)	683			142	284	90
Fuel Used(gal)	9			3	7	2
CO Emissions (g/hr)	654			229	481	155
NOx Emissions (g/hr)	127			45	94	30
VOC Emissions (g/hr)	151			53	111	36
Dilemma Vehicles (#)	0			0	0	0
Queue Length 50th (ft)	304			50	108	72
Queue Length 95th (ft)	392			93	m137	m102
Internal Link Dist (ft)	312			511	418	
Turn Bay Length (ft)					125	125
Base Capacity (vph)	2124			1392	1054	493
Starvation Cap Reductn	799			0	0	0
Spillback Cap Reductn	0			0	89	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.78			0.33	0.44	0.29

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 21.8 — Intersection LOS: C
Intersection Capacity Utilization 66.2% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: B Street & Seaport Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	23	558	318	48	178	28	253	0	43	36	16	16	
Future Volume (vph)	23	558	318	48	178	28	253	0	43	36	16	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.95			0.99		0.94	0.57			0.88		
Frt		0.947			0.984			0.850	0.850		0.969		
Flt Protected		0.999			0.991		0.950				0.974		
Satd. Flow (prot)	0	2805	0	0	2500	0	1626	0	1615	0	1325	0	
Flt Permitted		0.941			0.695		0.950				0.974		
Satd. Flow (perm)	0	2641	0	0	1745	0	1532	0	1615	0	1216	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		129			16			164	109		12		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		372			296			334			515		
Travel Time (s)		8.5			6.7			7.6			11.7		
Confl. Peds. (#/hr)	29		173	173		29	32		31	31		32	
Confl. Bikes (#/hr)			18			13							
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	26%	17%	13%	0%	49%	50%	11%	0%	0%	24%	67%	7%	
Adj. Flow (vph)	25	600	342	52	193	30	266	0	45	39	17	17	
Shared Lane Traffic (%)									10%				
Lane Group Flow (vph)	0	967	0	0	275	0	266	5	40	0	73	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	48.0	48.0		48.0	48.0		20.0		20.0	11.0	11.0		21.0
Total Split (%)	48.0%	48.0%		48.0%	48.0%		20.0%		20.0%	11.0%	11.0%		21%
Maximum Green (s)	43.0	43.0		43.0	43.0		15.0		15.0	6.0	6.0		18.0
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	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	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													6.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		49.2			49.2		25.5	0.0	25.5		10.3		
Actuated g/C Ratio		0.49			0.49		0.26	0.00	0.26		0.10		
v/c Ratio		0.71			0.32		0.64	0.03	0.08		0.50		
Control Delay		21.1			16.3		41.3	0.0	0.3		46.8		
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0		
Total Delay		21.1			16.3		41.3	0.0	0.3		46.8		
LOS		C			B		D	A	A		D		
Approach Delay		21.1			16.3			35.4			46.8		
Approach LOS		C			B			D			D		
Stops (vph)		613			142		223	0	0		51		
Fuel Used(gal)		10			2		4	0	0		1		
CO Emissions (g/hr)		689			154		281	1	7		83		
NOx Emissions (g/hr)		134			30		55	0	1		16		
VOC Emissions (g/hr)		160			36		65	0	2		19		
Dilemma Vehicles (#)		0			0		0	0	0		0		
Queue Length 50th (ft)		209			49		153	0	0		37		
Queue Length 95th (ft)		325			89		235	0	0		79		
Internal Link Dist (ft)		292			216			254			435		
Turn Bay Length (ft)													
Base Capacity (vph)		1365			867		414	164	492		146		
Starvation Cap Reductn		0			0		0	0	0		0		
Spillback Cap Reductn		0			0		0	0	0		0		
Storage Cap Reductn		0			0		0	0	0		0		
Reduced v/c Ratio		0.71			0.32		0.64	0.03	0.08		0.50		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: D Street & Seaport Boulevard

Ø1 (R)	Ø2	Ø7	Ø8
48 s	21 s	20 s	11 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	375	140	352	458	7	153	47	219	18	45	16
Future Volume (vph)	4	375	140	352	458	7	153	47	219	18	45	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12
Storage Length (ft)	100		100	0		0	0		100	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	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		1.00							
Frt			0.850		0.998				0.850		0.973	
Flt Protected		0.999		0.950				0.963			0.989	
Satd. Flow (prot)	0	2990	1364	1570	1617	0	0	1775	1425	0	1728	0
Flt Permitted		0.951		0.514				0.963			0.989	
Satd. Flow (perm)	0	2846	1308	850	1617	0	0	1775	1425	0	1728	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					1				226		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		191			478			213			710	
Travel Time (s)		4.3			10.9			4.8			16.1	
Confl. Bikes (#/hr)			14			8			2			
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	3%	0%	2%	0%	4%	9%	2%	0%	0%	40%
Adj. Flow (vph)	4	387	144	383	498	8	158	48	226	20	49	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	144	383	506	0	0	206	226	0	86	0
Turn Type	Perm	NA	Perm	D.P+P	NA		Split	NA	pt+ov	Split	NA	
Protected Phases		1		6	1 6		5	5	5 6	4	4	
Permitted Phases	1		1	1								
Detector Phase	1	1	1	6	1 6		5	5	5 6	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	4.0			4.0	4.0		8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	10.0			27.0	27.0		26.0	26.0	
Total Split (s)	34.0	34.0	34.0	15.0			35.0	35.0		26.0	26.0	
Total Split (%)	30.9%	30.9%	30.9%	13.6%			31.8%	31.8%		23.6%	23.6%	
Maximum Green (s)	27.0	27.0	27.0	9.0			30.0	30.0		21.0	21.0	
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0	3.0			2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0				-1.0			-1.0	
Total Lost Time (s)		7.0	7.0	6.0				4.0			4.0	
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	C-Max	C-Max	C-Max	None			None	None		Min	Min	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0				14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	0	0	0				0	0		0	0	
Act Effct Green (s)		50.8	50.8	60.8	65.8			18.2	32.2		11.0	
Actuated g/C Ratio		0.46	0.46	0.55	0.60			0.17	0.29		0.10	
v/c Ratio		0.30	0.24	0.72	0.52			0.70	0.39		0.48	
Control Delay		17.6	18.5	24.7	16.6			55.7	5.5		45.4	
Queue Delay		0.0	0.0	0.0	0.2			0.0	0.0		0.0	
Total Delay		17.6	18.5	24.7	16.8			55.7	5.5		45.4	
LOS		B	B	C	B			E	A		D	
Approach Delay		17.8			20.2			29.5			45.4	
Approach LOS		B			C			C			D	
Stops (vph)		162	60	199	206			183	21		66	
Fuel Used(gal)		3	1	4	4			4	1		2	
CO Emissions (g/hr)		197	75	292	311			253	51		115	
NOx Emissions (g/hr)		38	15	57	61			49	10		22	
VOC Emissions (g/hr)		46	17	68	72			59	12		27	
Dilemma Vehicles (#)		0	0	0	0			0	0		0	
Queue Length 50th (ft)		56	39	103	143			139	0		54	
Queue Length 95th (ft)		108	92	#257	278			205	51		m101	
Internal Link Dist (ft)		111			398			133			630	
Turn Bay Length (ft)			100						100			
Base Capacity (vph)		1314	604	529	967			500	587		353	
Starvation Cap Reductn		0	0	0	85			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		0.30	0.24	0.72	0.57			0.41	0.39		0.24	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 72.7% 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.
m Volume for 95th percentile queue is metered by upstream signal.

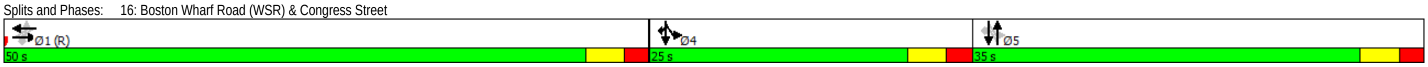
Splits and Phases: 15: A Street/Thomson St & Congress Street

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	121	283	182	18	238	657	129	103	139	80	40	98	52
Future Volume (vph)	121	283	182	18	238	657	129	103	139	80	40	98	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0		150		0	0		0	0		125
Storage Lanes	0		1		1		0	1		0	0		1
Taper Length (ft)	25				25			25			25		
Lane Util. Factor	1.00	1.00	1.00	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	0.77		0.91	0.95		0.76	0.97			0.99	0.69
Frt			0.850			0.975			0.945				0.850
Flt Protected		0.985			0.950			0.950				0.986	
Satd. Flow (prot)	0	1606	1454	0	1624	2697	0	1841	1439	0	0	1527	1405
Flt Permitted		0.537			0.418			0.662				0.835	
Satd. Flow (perm)	0	862	1115	0	648	2697	0	970	1439	0	0	1278	975
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			198			25			26				56
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		478				521			204			912	
Travel Time (s)		10.9				11.8			4.6			20.7	
Confl. Peds. (#/hr)	103		69	36	69		103	64		36	36		64
Confl. Bikes (#/hr)			9				8			2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	0%	0%	0%	5%	8%	0%	7%	2%	11%	5%	0%
Parking (#/hr)						0	0						
Adj. Flow (vph)	132	308	198	20	259	714	140	110	148	85	43	107	57
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	440	198	0	279	854	0	110	233	0	0	150	57
Turn Type	Perm	NA	Perm	Perm	Perm	NA		Perm	NA		D.P+P	NA	custom
Protected Phases		1				1			5		4	4 5	4
Permitted Phases	1		1	1	1			5			5		5
Detector Phase	1	1	1	1	1	1		5	5		4	4 5	4
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0		8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0		21.0	21.0		13.0		13.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0		35.0	35.0		25.0		25.0
Total Split (%)	45.5%	45.5%	45.5%	45.5%	45.5%	45.5%		31.8%	31.8%		22.7%		22.7%
Maximum Green (s)	45.0	45.0	45.0	45.0	45.0	45.0		30.0	30.0		20.0		20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0				-1.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0				4.0
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		2.0		2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min		Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		0.0	0.0		7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0	16.0		0.0		0.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0		0
Act Effct Green (s)		63.2	63.2		63.2	63.2		21.5	21.5			34.8	34.8
Actuated g/C Ratio		0.57	0.57		0.57	0.57		0.20	0.20			0.32	0.32
v/c Ratio		0.89	0.27		0.75	0.55		0.58	0.77			0.35	0.14
Control Delay		37.8	1.2		24.9	11.6		51.3	53.5			35.8	13.3
Queue Delay		0.0	0.0		0.0	0.1		0.0	0.0			0.0	0.0
Total Delay		37.8	1.2		24.9	11.7		51.3	53.5			35.8	13.3
LOS		D	A		C	B		D	D			D	B
Approach Delay		26.4				15.0			52.8			29.6	
Approach LOS		C				B			D			C	
Stops (vph)		262	3		125	318		92	182			97	21
Fuel Used(gal)		6	1		3	7		2	4			3	1
CO Emissions (g/hr)		425	52		212	475		122	261			176	44
NOx Emissions (g/hr)		83	10		41	93		24	51			34	9
VOC Emissions (g/hr)		98	12		49	110		28	61			41	10
Dilemma Vehicles (#)		0	0		0	0		0	0			0	0
Queue Length 50th (ft)		222	0		94	126		71	140			82	13
Queue Length 95th (ft)		#563	3		m#317	186		120	209			89	m16
Internal Link Dist (ft)		398				441			124			832	
Turn Bay Length (ft)					150								125
Base Capacity (vph)		495	725		372	1560		273	424			608	462
Starvation Cap Reductn		0	0		0	127		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		0.89	0.27		0.75	0.60		0.40	0.55			0.25	0.12

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 25.0 — Intersection LOS: C
Intersection Capacity Utilization 85.9% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Boston Wharf Road (WSR) & Congress Street



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	61	326	608	219	190	330	89	225	317	178
Future Volume (vph)	61	326	608	219	190	330	89	225	317	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor			0.96			0.93			0.92	
Frt			0.960				0.850		0.963	
Flt Protected	0.950					0.982			0.964	
Satd. Flow (prot)	1624	3094	2972	0	0	3170	1398	0	3001	0
Flt Permitted	0.160					0.982			0.964	
Satd. Flow (perm)	274	3094	2972	0	0	2935	1398	0	2778	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			50				97			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	82			82	43		12	43		12
Confl. Bikes (#/hr)				12						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	5%	3%	0%	1%	4%	0%	1%	4%
Adj. Flow (vph)	66	354	661	238	207	359	97	245	345	193
Shared Lane Traffic (%)										
Lane Group Flow (vph)	66	354	899	0	0	566	97	0	783	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Prot	Prot	
Protected Phases		1	1		2	2	2	3	3	
Permitted Phases	1									
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	29.0	29.0	29.0		14.0	14.0	14.0	30.0	30.0	
Total Split (s)	40.0	40.0	40.0		30.0	30.0	30.0	40.0	40.0	
Total Split (%)	36.4%	36.4%	36.4%		27.3%	27.3%	27.3%	36.4%	36.4%	
Maximum Green (s)	35.0	35.0	35.0		25.0	25.0	25.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	3.0	3.0	3.0			3.0	3.0		3.0	
Lead/Lag					Lead	Lead	Lead	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	C-Max	C-Max	C-Max		Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	0.0	0.0	
Flash Dont Walk (s)	15.0	15.0	15.0		0.0	0.0	0.0	24.0	24.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	
Act Effct Green (s)	42.6	42.6	42.6			24.7	24.7		33.8	
Actuated g/C Ratio	0.39	0.39	0.39			0.22	0.22		0.31	
v/c Ratio	0.62	0.30	0.76			0.80	0.25		0.85	
Control Delay	47.8	22.3	19.8			49.2	8.4		45.3	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	47.8	22.3	19.8			49.2	8.4		45.3	
LOS	D	C	B			D	A		D	
Approach Delay		26.3	19.8			43.3			45.3	
Approach LOS		C	B			D			D	
Stops (vph)	44	179	522			480	15		655	
Fuel Used(gal)	1	4	10			9	0		11	
CO Emissions (g/hr)	76	265	664			601	25		796	
NOx Emissions (g/hr)	15	52	129			117	5		155	
VOC Emissions (g/hr)	18	61	154			139	6		184	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	30	67	183			196	0		262	
Queue Length 95th (ft)	m52	m96	#365			257	42		328	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	106	1197	1180			778	416		1009	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.62	0.30	0.76			0.73	0.23		0.78	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 33.7 — Intersection LOS: C
Intersection Capacity Utilization 87.8% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	136	134	300	401	89	388	334	344	11	87	29
Future Volume (vph)	325	136	134	300	401	89	388	334	344	11	87	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	14	12	12	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)	25			25			25			25		
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		0.95		0.97	0.96						1.00	
Frt			0.850		0.979				0.850			0.850
Flt Protected		0.966		0.950	0.988		0.950				0.994	
Satd. Flow (prot)	0	2954	1398	1382	2677	0	1770	1754	1346	0	3122	1232
Flt Permitted		0.966		0.950	0.988		0.672				0.890	
Satd. Flow (perm)	0	2794	1398	1341	2658	0	1252	1754	1346	0	2784	1232
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					16				355			69
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		509			995			220			498	
Travel Time (s)		11.6			22.6			5.0			11.3	
Confl. Peds. (#/hr)	126		37	37		126				45		2
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	3%	14%	4%	7%	9%	14%	4%	4%	8%	0%	0%	14%
Adj. Flow (vph)	346	145	143	319	427	95	400	344	355	12	95	32
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	491	143	159	682	0	400	344	355	0	107	32
Turn Type	Split	NA	pt+ov	Split	NA		D.P+P	NA	Prot	Perm	NA	pt+ov
Protected Phases	2	2	2 3	1	1		3	3 4	3 4		4	2 4
Permitted Phases							4			4		
Detector Phase	2	2	2 3	1	1		3	3 4	3 4	4	4	2 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		30.0			13.0	13.0	
Total Split (s)	30.0	30.0		35.0	35.0		30.0			15.0	15.0	
Total Split (%)	27.3%	27.3%		31.8%	31.8%		27.3%			13.6%	13.6%	
Maximum Green (s)	25.0	25.0		30.0	30.0		25.0			10.0	10.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		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)		3.0		3.0	3.0		3.0				3.0	
Lead/Lag	Lead	Lead					Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0			2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max			Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0					
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		18.0					
Pedestrian Calls (#/hr)	0	0		0	0		0					
Act Effct Green (s)		27.0	57.0	32.9	32.9		38.1	41.1	41.1		11.1	38.1
Actuated g/C Ratio		0.25	0.52	0.30	0.30		0.35	0.37	0.37		0.10	0.35
v/c Ratio		0.89dl	0.20	0.38	0.84		0.71	0.53	0.49		0.38	0.07
Control Delay		41.1	21.9	27.2	37.8		36.0	30.2	5.0		40.3	3.1
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		41.1	21.9	27.2	37.8		36.0	30.2	5.0		40.3	3.1
LOS		D	C	C	D		D	C	A		D	A
Approach Delay		36.8			35.8			24.2			31.8	
Approach LOS		D			D			C			C	
Stops (vph)		453	102	117	565		314	253	30		82	6
Fuel Used(gal)		8	2	3	13		5	4	1		2	0
CO Emissions (g/hr)		574	118	184	911		367	281	77		115	11
NOx Emissions (g/hr)		112	23	36	177		71	55	15		22	2
VOC Emissions (g/hr)		133	27	43	211		85	65	18		27	3
Dilemma Vehicles (#)		0	0	0	0		0	0	0		0	0
Queue Length 50th (ft)		190	79	104	229		224	186	0		30	2
Queue Length 95th (ft)		237	m126	m135	m#345		325	274	60		55	m6
Internal Link Dist (ft)		429			915			140			418	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		725	724	413	811		561	669	733		303	481
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		0.68	0.20	0.38	0.84		0.71	0.51	0.48		0.35	0.07

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.1 Intersection LOS: C
Intersection Capacity Utilization 78.1% 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.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: B Street & Congress Street

Ø1 (R)	Ø2	Ø3	Ø4
35 s	30 s	30 s	15 s

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	10	105	270	387	68	135	20	2	471	205	24	2	20	283	42
Future Volume (vph)	10	105	270	387	68	135	20	2	471	205	24	2	20	283	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.93			0.95			0.66	0.99				0.97	
Frt			0.986	0.850		0.986				0.984				0.982	
Flt Protected			0.987			0.985			0.950					0.997	
Satd. Flow (prot)	0	0	2832	1314	0	2824	0	0	2902	1523	0	0	0	3033	0
Flt Permitted			0.987			0.985			0.950					0.997	
Satd. Flow (perm)	0	0	2698	1314	0	2698	0	0	1902	1523	0	0	0	3011	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						8				5				11	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				334	
Travel Time (s)			22.6			7.3				7.2				7.6	
Confl. Peds. (#/hr)	56	26		90	90		26	90	56		57	26	57		56
Confl. Bikes (#/hr)				8			7				6				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	4%	2%	23%	0%	0%	5%	9%	9%	0%	0%	11%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	10	108	278	399	74	147	22	2	512	223	26	2	22	304	45
Shared Lane Traffic (%)				10%											
Lane Group Flow (vph)	0	0	436	359	0	243	0	0	514	249	0	0	0	373	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Split	Split	NA		Split	Split	NA	
Protected Phases		1	1	1	4	4		2	2	2		3	3	3	
Permitted Phases	1														
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	39.0	39.0	39.0	39.0	19.0	19.0		30.0	30.0	30.0		22.0	22.0	22.0	
Total Split (%)	35.5%	35.5%	35.5%	35.5%	17.3%	17.3%		27.3%	27.3%	27.3%		20.0%	20.0%	20.0%	
Maximum Green (s)	31.0	31.0	31.0	31.0	11.0	11.0		21.0	21.0	21.0		14.0	14.0	14.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
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		2.0	2.0	2.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	4.0	4.0	4.0	4.0				10.0	10.0	10.0		2.0	2.0	2.0	
Pedestrian Calls (#/hr)	0	0	0	0				0	0	0		0	0	0	
Act Effct Green (s)			33.3	33.3		12.7			23.0	23.0				16.0	
Actuated g/C Ratio			0.30	0.30		0.12			0.21	0.21				0.15	
v/c Ratio			0.51	0.90		0.73			0.85	0.77				0.83	
Control Delay			39.6	68.8		59.2			45.3	46.2				60.9	
Queue Delay			0.0	0.0		0.0			0.5	1.3				0.0	
Total Delay			39.6	68.8		59.2			45.8	47.5				60.9	
LOS			D	E		E			D	D				E	
Approach Delay			52.8			59.2				46.3				60.9	
Approach LOS			D			E				D				E	
Stops (vph)			363	308		204			439	263				308	
Fuel Used(gal)			9	9		4			8	4				7	
CO Emissions (g/hr)			608	649		307			556	292				483	
NOx Emissions (g/hr)			118	126		60			108	57				94	
VOC Emissions (g/hr)			141	150		71			129	68				112	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			149	275		85			187	173				132	
Queue Length 95th (ft)			210	#471		#137			#264	#284				#210	
Internal Link Dist (ft)			915			239				237				254	
Turn Bay Length (ft)				150											
Base Capacity (vph)			858	398		340			606	322				450	
Starvation Cap Reductn			0	0		0			8	13				0	
Spillback Cap Reductn			0	0		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.51	0.90		0.71			0.86	0.81				0.83	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 52.6 — Intersection LOS: D
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: 19: D Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	45	0	0	34	0	0	702	0	0	740	0	
Future Volume (vph)	0	45	0	0	34	0	0	702	0	0	740	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt													
Flt Protected													
Satd. Flow (prot)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Flt Permitted													
Satd. Flow (perm)	0	912	0	0	912	0	0	4508	0	0	3109	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)													
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									85				
Confl. Bikes (#/hr)									39				
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	7%	0%	0%	8%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	47	0	0	37	0	0	763	0	0	771	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	47	0	0	37	0	0	763	0	0	771	0	
Turn Type		NA			NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		33.0		33.0	33.0			66.0					11.0
Total Split (%)		30.0%		30.0%	30.0%			60.0%					10%
Maximum Green (s)		27.0		27.0	27.0			61.0					6.0
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0		2.0	2.0			2.0					2.0
Recall Mode		None		None	None			C-Max					Max
Walk Time (s)								7.0					
Flash Dont Walk (s)								5.0					
Pedestrian Calls (#/hr)								0					
Act Effct Green (s)		12.0			12.0			80.8			92.6		
Actuated g/C Ratio		0.11			0.11			0.73			0.84		
v/c Ratio		0.47			0.37			0.23			0.29		
Control Delay		61.0			55.2			7.3			3.0		
Queue Delay		0.0			0.0			0.2			0.8		
Total Delay		61.0			55.2			7.5			3.8		
LOS		E			E			A			A		
Approach Delay		61.0			55.2			7.5			3.8		
Approach LOS		E			E			A			A		
Stops (vph)		42			32			277			223		
Fuel Used(gal)		1			1			4			4		
CO Emissions (g/hr)		64			44			292			246		
NOx Emissions (g/hr)		13			9			57			48		
VOC Emissions (g/hr)		15			10			68			57		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		32			25			55			49		
Queue Length 95th (ft)		69			57			176			m142		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		232			232			3313			2618		
Starvation Cap Reductn		0			0			1661			1457		
Spillback Cap Reductn		0			0			117			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.20			0.16			0.46			0.66		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 71 (65%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.4 — Intersection LOS: A
Intersection Capacity Utilization 36.9% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: D Street & Transitway

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	242	702	496	244	
Future Volume (vph)	0	0	242	702	496	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.96		0.96		
Frt					0.951		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1584	3036	2834	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1526	3036	2834	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					86		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			62			62	
Confl. Bikes (#/hr)						4	
Peak Hour Factor	0.25	0.25	0.93	0.93	0.96	0.96	
Heavy Vehicles (%)	0%	0%	6%	7%	9%	8%	
Adj. Flow (vph)	0	0	260	755	517	254	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	260	755	771	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Maximum Green (s)			31.0		39.0		24.0
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0		2.0		2.0
Recall Mode			Max		C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.57	0.26	0.47		
Control Delay			39.6	1.6	16.7		
Queue Delay			4.6	0.0	0.3		
Total Delay			44.2	1.7	17.0		
LOS			D	A	B		
Approach Delay				12.5	17.0		
Approach LOS				B	B		
Stops (vph)			191	58	583		
Fuel Used(gal)			4	2	7		
CO Emissions (g/hr)			249	152	520		
NOx Emissions (g/hr)			48	30	101		
VOC Emissions (g/hr)			58	35	120		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			152	0	101		
Queue Length 95th (ft)			m233	98	143		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			460	2854	1644		
Starvation Cap Reductn			134	331	334		
Spillback Cap Reductn			0	0	1		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			0.80	0.30	0.59		

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: 0.57
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 48.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: D Street & I-90 Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	564	71	34	406	520	147	253	45	246	106	144
Future Volume (vph)	170	564	71	34	406	520	147	253	45	246	106	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.99				0.93	0.97	0.98		0.96	0.97	
Frt		0.983				0.850		0.977			0.934	
Flt Protected	0.950			0.950			0.950			0.950	0.988	
Satd. Flow (prot)	1555	2933	0	1577	1656	1584	1608	2783	0	1374	2576	0
Flt Permitted	0.263			0.119			0.950			0.950	0.988	
Satd. Flow (perm)	423	2933	0	198	1656	1471	1567	2783	0	1317	2551	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		16						16			148	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	33		31	31		33	25		37	37		25
Confl. Bikes (#/hr)			9			15			32			2
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	1%	12%	9%	3%	17%	4%	1%	27%	28%	4%	30%	4%
Parking (#/hr)			0						0			
Adj. Flow (vph)	175	581	73	35	423	542	155	266	47	254	109	148
Shared Lane Traffic (%)										31%		
Lane Group Flow (vph)	175	654	0	35	423	542	155	313	0	175	336	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	15.0			40.0	40.0	28.0	27.0	27.0		28.0	28.0	
Total Split (%)	13.6%			36.4%	36.4%	25.5%	24.5%	24.5%		25.5%	25.5%	
Maximum Green (s)	7.0			32.0	32.0	21.0	20.0	20.0		21.0	21.0	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	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	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				12.0	12.0	13.0	12.0	12.0		13.0	13.0	
Pedestrian Calls (#/hr)				0	0	0	0	0		0	0	
Act Effct Green (s)	41.6	48.6		33.6	33.6	56.0	21.0	21.0		21.4	21.4	
Actuated g/C Ratio	0.38	0.44		0.31	0.31	0.51	0.19	0.19		0.19	0.19	
v/c Ratio	0.73	0.50		0.58	0.84	0.70	0.51	0.58		0.66	0.54	
Control Delay	47.6	20.6		62.9	43.7	14.0	46.5	43.1		25.5	7.7	
Queue Delay	2.6	0.0		0.0	0.0	0.0	0.0	0.3		0.0	0.3	
Total Delay	50.2	20.6		62.9	43.7	14.0	46.5	43.4		25.5	8.0	
LOS	D	C		E	D	B	D	D		C	A	
Approach Delay		26.8			28.3			44.4			14.0	
Approach LOS		C			C			D			B	
Stops (vph)	125	307		23	313	244	129	251		114	104	
Fuel Used(gal)	3	7		1	7	5	3	6		2	2	
CO Emissions (g/hr)	222	524		50	502	362	200	386		133	128	
NOx Emissions (g/hr)	43	102		10	98	70	39	75		26	25	
VOC Emissions (g/hr)	52	121		12	116	84	46	89		31	30	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	67	112		13	204	99	99	101		58	8	
Queue Length 95th (ft)	#130	174		m#51	#435	178	167	148		137	10	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	241	1304		60	505	779	306	544		274	633	
Starvation Cap Reductn	0	0		0	0	0	0	0		1	52	
Spillback Cap Reductn	19	0		0	0	0	0	27		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.50		0.58	0.84	0.70	0.51	0.61		0.64	0.58	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 30 (27%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 27.9 Intersection LOS: C
Intersection Capacity Utilization 88.4% 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.
m Volume for 95th percentile queue is metered by upstream signal.

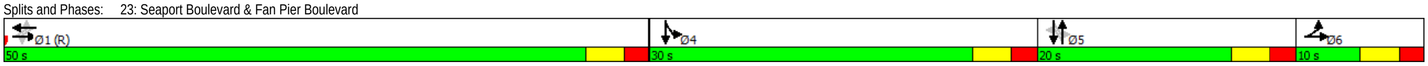
Splits and Phases: 22: D Street & Summer Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	1014	11	7	701	174	0	36	0	90	21	65
Future Volume (vph)	154	1014	11	7	701	174	0	36	0	90	21	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.970						0.950	
Flt Protected	0.950										0.975	
Satd. Flow (prot)	1805	3603	0	0	3502	0	0	1900	0	0	1760	0
Flt Permitted	0.181				0.766						0.819	
Satd. Flow (perm)	344	3603	0	0	2682	0	0	1900	0	0	1478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			33						30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		294			222			175			328	
Travel Time (s)		6.7			5.0			4.0			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	1102	12	8	762	189	0	39	0	98	23	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1114	0	0	959	0	0	39	0	0	192	0
Turn Type	D.P+P	NA		Perm	NA			NA		D.P+P	NA	
Protected Phases	6	1 6			1			5		4	4 5	
Permitted Phases	1			1			5			5		
Detector Phase	6	1 6		1	1		5	5		4	4 5	
Switch Phase												
Minimum Initial (s)	4.0			8.0	8.0		8.0	8.0		8.0		
Minimum Split (s)	9.0			22.0	22.0		20.0	20.0		27.0		
Total Split (s)	10.0			50.0	50.0		20.0	20.0		30.0		
Total Split (%)	9.1%			45.5%	45.5%		18.2%	18.2%		27.3%		
Maximum Green (s)	5.0			45.0	45.0		15.0	15.0		25.0		
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0			2.0	2.0		2.0	2.0		2.0		
Lost Time Adjust (s)	0.0				0.0			0.0				
Total Lost Time (s)	5.0				5.0			5.0				
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			2.0	2.0		2.0	2.0		2.0		
Recall Mode	None			C-Max	C-Max		None	None		None		
Walk Time (s)				7.0	7.0		0.0	0.0		7.0		
Flash Dont Walk (s)				8.0	8.0		15.0	15.0		15.0		
Pedestrian Calls (#/hr)				0	0		0	0		0		
Act Effct Green (s)	68.4	73.4			48.4			8.3			21.6	
Actuated g/C Ratio	0.62	0.67			0.44			0.08			0.20	
v/c Ratio	0.35	0.46			0.80			0.27			0.55	
Control Delay	19.9	4.7			29.7			49.0			35.9	
Queue Delay	0.0	0.4			1.1			0.0			0.0	
Total Delay	19.9	5.2			30.7			49.0			35.9	
LOS	B	A			C			D			D	
Approach Delay		7.1			30.7			49.0			35.9	
Approach LOS		A			C			D			D	
Stops (vph)	63	162			760			38			124	
Fuel Used(gal)	1	4			11			1			2	
CO Emissions (g/hr)	93	296			773			57			170	
NOx Emissions (g/hr)	18	58			150			11			33	
VOC Emissions (g/hr)	21	69			179			13			39	
Dilemma Vehicles (#)	0	0			0			0			0	
Queue Length 50th (ft)	35	65			197			29			96	
Queue Length 95th (ft)	107	97			#337			m64			149	
Internal Link Dist (ft)		214			142			95			248	
Turn Bay Length (ft)	125											
Base Capacity (vph)	479	2403			1197			259			533	
Starvation Cap Reductn	0	719			83			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.35	0.66			0.86			0.15			0.36	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 82.7% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Seaport Boulevard & Fan Pier Boulevard



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	133	2	13	237
Future Volume (Veh/h)	1	8	133	2	13	237
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.67	0.67	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	12	145	2	14	258
Pedestrians	183			115	137	
Lane Width (ft)	11.0			11.0	11.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	14			9	10	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			150		619	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			150		619	259
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		95	59
cM capacity (veh/h)			1281		311	637

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	147	272
Volume Left	0	145	14
Volume Right	12	0	258
cSH	1700	1281	604
Volume to Capacity	0.01	0.11	0.45
Queue Length 95th (ft)	0	10	58
Control Delay (s)	0.0	8.1	15.7
Lane LOS		A	C
Approach Delay (s)	0.0	8.1	15.7
Approach LOS			C

Intersection Summary			
Average Delay	12.7		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	95	98	43	6	33
Future Volume (Veh/h)	142	95	98	43	6	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	103	107	47	7	36
Pedestrians					412	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					31	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			1145			
pX, platoon unblocked						
vC, conflicting volume	566				954	542
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566				954	542
tC, single (s)	4.1				6.4	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.5
p0 queue free %	77				95	90
cM capacity (veh/h)	683				154	346

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	257	154	43
Volume Left	154	0	7
Volume Right	0	47	36
cSH	683	1700	287
Volume to Capacity	0.23	0.09	0.15
Queue Length 95th (ft)	22	0	13
Control Delay (s)	8.2	0.0	19.7
Lane LOS	A		C
Approach Delay (s)	8.2	0.0	19.7
Approach LOS			C

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	101	0	13	139	0	0	103	8	0	103	0
Future Volume (Veh/h)	0	101	0	13	139	0	0	103	8	0	103	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	110	0	14	151	0	0	112	9	0	112	0
Pedestrians											291	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											24	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					843							
pX, platoon unblocked												
vC, conflicting volume	442			110			345	580	110	645	580	442
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442			110			345	580	110	645	580	442
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	100			99			100	65	99	100	65	100
cM capacity (veh/h)	855			1493			366	321	949	165	321	465

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	165	121	112
Volume Left	0	14	0	0
Volume Right	0	0	9	0
cSH	855	1493	338	321
Volume to Capacity	0.00	0.01	0.36	0.35
Queue Length 95th (ft)	0	1	39	38
Control Delay (s)	0.0	0.7	21.5	22.1
Lane LOS		A	C	C
Approach Delay (s)	0.0	0.7	21.5	22.1
Approach LOS			C	C

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	84	0	0	140	169	0	135	0	30	0	11
Future Volume (Veh/h)	24	84	0	0	140	169	0	135	0	30	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	91	0	0	144	174	0	147	0	33	0	12
Pedestrians											192	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											16	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					640							
pX, platoon unblocked												
vC, conflicting volume	510			91			386	653	91	640	566	423
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	510			91			386	653	91	640	566	423
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.5	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.9	4.0	3.3
p0 queue free %	97			100			100	54	100	79	100	98
cM capacity (veh/h)	895			1517			483	317	972	159	356	534

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	117	318	147	45
Volume Left	26	0	0	33
Volume Right	0	174	0	12
cSH	895	1700	317	195
Volume to Capacity	0.03	0.19	0.46	0.23
Queue Length 95th (ft)	2	0	58	21
Control Delay (s)	2.2	0.0	25.7	28.8
Lane LOS	A		D	D
Approach Delay (s)	2.2	0.0	25.7	28.8
Approach LOS			D	D

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	104	8	12	295	40	8	0	20	1	0	5
Future Volume (Veh/h)	1	104	8	12	295	40	8	0	20	1	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96	0.92	0.92	0.92	0.50	0.92	0.50
Hourly flow rate (vph)	1	113	9	13	307	42	9	0	22	2	0	10
Pedestrians		61			45						134	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		5			4						11	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					278							
pX, platoon unblocked												
vC, conflicting volume	483			122			544	628	162	674	612	523
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	483			122			544	628	162	674	612	523
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	100	97	99	100	98
cM capacity (veh/h)	968			1478			382	354	854	280	361	470

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	123	362	31	12
Volume Left	1	13	9	2
Volume Right	9	42	22	10
cSH	968	1478	628	423
Volume to Capacity	0.00	0.01	0.05	0.03
Queue Length 95th (ft)	0	1	4	2
Control Delay (s)	0.1	0.3	11.0	13.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.3	11.0	13.8
Approach LOS			B	B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	2	898	78	1	24	420	0	0
Future Volume (Veh/h)	2	898	78	1	24	420	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	955	83	0	26	457	0	0
Pedestrians							143	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		591				372		
pX, platoon unblocked	0.00			0.00	0.90		0.90	0.90
vC, conflicting volume	0			0	1181		1420	662
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	972		1238	393
tC, single (s)	0.0			0.0	4.4		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.3		3.5	3.3
p0 queue free %	0			0	95		100	100
cM capacity (veh/h)	0			0	570		146	548

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	637	401	178	305
Volume Left	0	0	26	0
Volume Right	0	83	0	0
cSH	1700	1700	570	1700
Volume to Capacity	0.37	0.24	0.05	0.18
Queue Length 95th (ft)	0	0	4	0
Control Delay (s)	0.0	0.0	2.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.8	
Approach LOS				

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		33.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	426	0	12	379	153	2	0	2	102	0	47
Future Volume (Veh/h)	71	426	0	12	379	153	2	0	2	102	0	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	1.00	1.00	1.00	0.94	0.94	0.94
Hourly flow rate (vph)	73	439	0	12	387	156	2	0	2	109	0	50
Pedestrians											738	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											61	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.84			0.83			0.91	0.91	0.83	0.91	0.91	0.84
vC, conflicting volume	1281			439			1124	1890	439	1814	1812	1203
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1238			215			679	1523	215	1440	1437	1145
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	59			99			95	100	100	0	100	37
cM capacity (veh/h)	177			1129			44	24	685	14	27	79

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	512	555	4	159
Volume Left	73	12	2	109
Volume Right	0	156	2	50
cSH	177	1129	83	19
Volume to Capacity	0.41	0.01	0.05	8.46
Queue Length 95th (ft)	46	1	4	Err
Control Delay (s)	24.2	0.3	50.7	Err
Lane LOS	C	A	F	F
Approach Delay (s)	24.2	0.3	50.7	Err
Approach LOS			F	F

Intersection Summary				
Average Delay	1302.9			
Intersection Capacity Utilization	79.5%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	41	490	3	520	104	27	24
Future Volume (Veh/h)	41	490	3	520	104	27	24
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	505	0	565	113	29	26
Pedestrians						485	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						40	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)		1094		191			
pX, platoon unblocked	0.80		0.00			0.85	0.80
vC, conflicting volume	1163		0			1696	1106
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1076		0			1447	1005
tC, single (s)	4.2		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.3		0.0			3.5	3.3
p0 queue free %	86		0			53	81
cM capacity (veh/h)	291		0			62	137

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	547	678	55
Volume Left	42	0	29
Volume Right	0	113	26
cSH	291	1700	84
Volume to Capacity	0.14	0.40	0.66
Queue Length 95th (ft)	12	0	77
Control Delay (s)	5.2	0.0	107.5
Lane LOS	A		F
Approach Delay (s)	5.2	0.0	107.5
Approach LOS			F

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	5	279	4	6	0	201	34	26	0	124	25
Future Volume (vph)	1	5	279	4	6	0	201	34	26	0	124	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.95	0.97		0.99			0.88				
Frt			0.850					0.935			0.977	
Flt Protected		0.992			0.982		0.950					
Satd. Flow (prot)	0	1885	1615	0	1866	0	1787	1557	0	0	1856	0
Flt Permitted		0.939			0.877		0.950					
Satd. Flow (perm)	0	1696	1571	0	1657	0	1787	1557	0	0	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			291					28			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		278			143			338			266	
Travel Time (s)		6.3			3.3			7.7			6.0	
Confl. Peds. (#/hr)	93		8	8		93			84	84		
Peak Hour Factor	0.96	0.96	0.96	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%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	5	291	4	7	0	218	37	28	0	135	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	291	0	11	0	218	65	0	0	162	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA			NA	
Protected Phases		5	1		5		1	1 4			4	
Permitted Phases	5		5	5						4		
Detector Phase	5	5	1	5	5		1	1 4		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	22.0	22.0	23.0	22.0	22.0		23.0			23.0	23.0	
Total Split (s)	22.0	22.0	63.0	22.0	22.0		63.0			25.0	25.0	
Total Split (%)	20.0%	20.0%	57.3%	20.0%	20.0%		57.3%			22.7%	22.7%	
Maximum Green (s)	17.0	17.0	58.0	17.0	17.0		58.0			20.0	20.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0			2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0				5.0	
Lead/Lag	Lag	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	None	None	C-Max	None	None		C-Max			None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0			10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0			0	0	
Act Effct Green (s)		8.0	84.5		8.0		81.3	102.8			13.5	
Actuated g/C Ratio		0.07	0.77		0.07		0.74	0.93			0.12	
v/c Ratio		0.05	0.22		0.09		0.17	0.04			0.69	
Control Delay		50.2	0.8		49.6		4.9	1.3			58.8	
Queue Delay		0.0	0.0		0.0		0.6	0.0			0.0	
Total Delay		50.2	0.8		49.6		5.5	1.3			58.8	
LOS		D	A		D		A	A			E	
Approach Delay		1.8			49.6			4.5			58.8	
Approach LOS		A			D			A			E	
Stops (vph)		7	9		11		64	6			133	
Fuel Used(gal)		0	1		0		1	0			3	
CO Emissions (g/hr)		8	49		12		76	14			198	
NOx Emissions (g/hr)		2	10		2		15	3			38	
VOC Emissions (g/hr)		2	11		3		18	3			46	
Dilemma Vehicles (#)		0	0		0		0	0			0	
Queue Length 50th (ft)		4	1		7		21	0			106	
Queue Length 95th (ft)		18	18		26		m93	m11			168	
Internal Link Dist (ft)		198			63			258			186	
Turn Bay Length (ft)												
Base Capacity (vph)		262	1307		256		1321	1472			344	
Starvation Cap Reductn		0	0		0		768	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.02	0.22		0.04		0.39	0.04			0.47	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 52.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

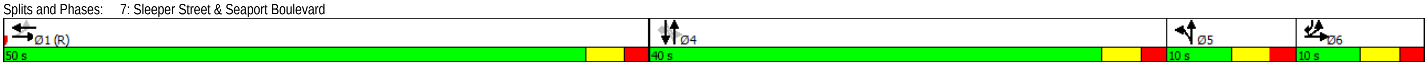
Splits and Phases: 6: Northern Avenue & Pier 4 Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	882	101	0	1161	47	157	21	73	184	67	256
Future Volume (vph)	73	882	101	0	1161	47	157	21	73	184	67	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	11	11
Storage Length (ft)	0		125	125		0	0		0	0		100
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
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		0.94			0.98			0.94			0.96	0.92
Frt		0.985			0.994			0.961				0.850
Flt Protected	0.950							0.970			0.965	
Satd. Flow (prot)	1593	2860	0	0	3100	0	0	1336	0	0	1595	1405
Flt Permitted	0.085							0.492			0.647	
Satd. Flow (perm)	143	2860	0	0	3100	0	0	660	0	0	1022	1286
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			5			22				69
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1029			308			346			339	
Travel Time (s)		23.4			7.0			7.9			7.7	
Confl. Peds. (#/hr)	118		171	171		118	55		87	87		55
Confl. Bikes (#/hr)			30			22			4			3
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Parking (#/hr)						0		0	0			
Adj. Flow (vph)	75	909	104	0	1262	51	171	23	79	192	70	267
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	1013	0	0	1313	0	0	273	0	0	262	267
Turn Type	D.P+P	NA			NA		D.P+P	NA		Perm	NA	pm+ov
Protected Phases	6	1 6			1		5	4 5			4	6
Permitted Phases	1						4			4		4
Detector Phase	6	1 6			1		5	4 5		4	4	6
Switch Phase												
Minimum Initial (s)	4.0				10.0		4.0			8.0	8.0	4.0
Minimum Split (s)	9.0				23.0		9.0			30.0	30.0	9.0
Total Split (s)	10.0				50.0		10.0			40.0	40.0	10.0
Total Split (%)	9.1%				45.5%		9.1%			36.4%	36.4%	9.1%
Maximum Green (s)	5.0				45.0		5.0			35.0	35.0	5.0
Yellow Time (s)	3.0				3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0				2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	-2.0				-2.0						-2.0	-2.0
Total Lost Time (s)	3.0				3.0						3.0	3.0
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0		2.0			2.0	2.0	2.0
Recall Mode	None				C-Max		Min			None	None	None
Walk Time (s)					7.0					7.0	7.0	
Flash Dont Walk (s)					5.0					18.0	18.0	
Pedestrian Calls (#/hr)					0					0	0	
Act Effct Green (s)	55.6	58.6			47.0			42.4			35.4	44.0
Actuated g/C Ratio	0.51	0.53			0.43			0.39			0.32	0.40
v/c Ratio	0.41	0.66			0.99			0.88			0.80	0.47
Control Delay	25.3	12.6			35.8			58.3			52.6	13.3
Queue Delay	0.0	0.1			0.1			0.0			0.0	0.0
Total Delay	25.3	12.6			35.9			58.3			52.6	13.3
LOS	C	B			D			E			D	B
Approach Delay		13.5			35.9			58.3			32.8	
Approach LOS		B			D			E			C	
Stops (vph)	48	331			341			207			209	113
Fuel Used(gal)	1	12			14			6			5	2
CO Emissions (g/hr)	86	855			949			404			316	139
NOx Emissions (g/hr)	17	166			185			79			61	27
VOC Emissions (g/hr)	20	198			220			94			73	32
Dilemma Vehicles (#)	0	0			0			0			0	0
Queue Length 50th (ft)	17	127			100			154			162	63
Queue Length 95th (ft)	m23	m130			#480			#292			#289	117
Internal Link Dist (ft)		949			228			266			259	
Turn Bay Length (ft)												100
Base Capacity (vph)	185	1531			1327			314			343	565
Starvation Cap Reductn	0	0			1			0			0	0
Spillback Cap Reductn	0	39			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.41	0.68			0.99			0.87			0.76	0.47

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 29.7 — Intersection LOS: C
Intersection Capacity Utilization 90.1% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sleeper Street & Seaport Boulevard



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	884	306	24	248	951	179	162
Future Volume (vph)	884	306	24	248	951	179	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12
Storage Length (ft)		0		100		0	100
Storage Lanes		0		1		1	1
Taper Length (ft)				25		25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.84					0.90	0.88
Frt	0.961						0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	2497	0	0	1624	3049	1608	1454
Flt Permitted				0.116		0.950	
Satd. Flow (perm)	2497	0	0	198	3049	1441	1278
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)	65						23
Link Speed (mph)	30				30	30	
Link Distance (ft)	139				274	912	
Travel Time (s)	3.2				6.2	20.7	
Confl. Peds. (#/hr)		262	84	262		79	84
Confl. Bikes (#/hr)		22					
Peak Hour Factor	0.96	0.96	0.92	0.92	0.92	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	3%	1%	0%
Adj. Flow (vph)	921	319	26	270	1034	192	174
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1240	0	0	296	1034	192	174
Turn Type	NA		D.P+P	D.P+P	NA	Prot	custom
Protected Phases	1		5	5	1 5	4	4
Permitted Phases			1	1			5
Detector Phase	1		5	5	1 5	4	4
Switch Phase							
Minimum Initial (s)	10.0		4.0	4.0		8.0	8.0
Minimum Split (s)	24.0		9.0	9.0		30.0	30.0
Total Split (s)	60.0		10.0	10.0		40.0	40.0
Total Split (%)	54.5%		9.1%	9.1%		36.4%	36.4%
Maximum Green (s)	55.0		5.0	5.0		35.0	35.0
Yellow Time (s)	3.0		3.0	3.0		3.0	3.0
All-Red Time (s)	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0			-1.0		-1.0	0.0
Total Lost Time (s)	3.0			4.0		4.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0
Recall Mode	C-Max		None	None		None	None
Walk Time (s)	7.0					7.0	7.0
Flash Dont Walk (s)	8.0					18.0	18.0
Pedestrian Calls (#/hr)	0					0	0
Act Effct Green (s)	57.0			79.3	84.3	18.7	40.0
Actuated g/C Ratio	0.52			0.72	0.77	0.17	0.36
v/c Ratio	0.94			0.67	0.44	0.71	0.34
Control Delay	21.5			40.7	4.5	55.3	26.3
Queue Delay	9.5			0.0	0.3	0.0	0.0
Total Delay	31.0			40.7	4.7	55.3	26.3
LOS	C			D	A	E	C
Approach Delay	31.0				12.7	41.5	
Approach LOS	C				B	D	
Stops (vph)	704			200	193	172	115
Fuel Used(gal)	10			4	4	4	3
CO Emissions (g/hr)	725			275	277	296	186
NOx Emissions (g/hr)	141			54	54	58	36
VOC Emissions (g/hr)	168			64	64	69	43
Dilemma Vehicles (#)	0			0	0	0	0
Queue Length 50th (ft)	82			149	80	137	88
Queue Length 95th (ft)	#591			#289	103	m201	m148
Internal Link Dist (ft)	59				194	832	
Turn Bay Length (ft)				100			100
Base Capacity (vph)	1325			445	2337	526	592
Starvation Cap Reductn	88			0	575	0	0
Spillback Cap Reductn	0			0	281	7	0
Storage Cap Reductn	0			0	0	0	0
Reduced v/c Ratio	1.00			0.67	0.59	0.37	0.29

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 24.0 — Intersection LOS: C
Intersection Capacity Utilization 88.3% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

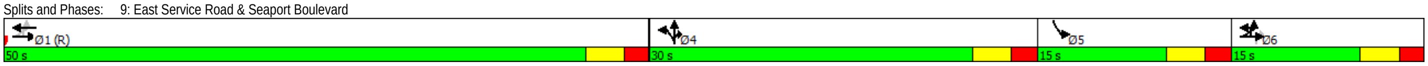
Splits and Phases: 8: Boston Wharf Road (WSR) & Seaport Boulevard

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	16	49	1005	0	0	841	118	171	93	330	214	0	193
Future Volume (vph)	16	49	1005	0	0	841	118	171	93	330	214	0	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11	12	11	12	11	12	12	12
Storage Length (ft)		150		0	0		0	0		125	0		0
Storage Lanes		1		0	0		0	0		1	2		0
Taper Length (ft)		25			25			25			25		
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor						0.96			0.97	0.94	0.95	0.53	
Frt						0.982				0.850		0.850	
Flt Protected		0.950							0.969		0.950		
Satd. Flow (prot)	0	1624	2925	0	0	2917	0	0	3148	1391	3090	0	0
Flt Permitted		0.154							0.969		0.950		
Satd. Flow (perm)	0	263	2925	0	0	2917	0	0	3068	1313	2932	0	0
Right Turn on Red				Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						17				69		169	
Link Speed (mph)			30			30			30			30	
Link Distance (ft)			243			376			812			338	
Travel Time (s)			5.5			8.5			18.5			7.7	
Confl. Peds. (#/hr)	35	132		180	180		132	35		30	30		35
Confl. Bikes (#/hr)							33						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%	0%	0%	0%	1%	2%	0%	1%
Parking (#/hr)			0	0									
Adj. Flow (vph)	17	53	1092	0	0	858	120	180	98	347	228	0	205
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	70	1092	0	0	978	0	0	278	347	228	205	0
Turn Type	D.P+P	D.P+P	NA			NA		Split	NA	custom	Prot		
Protected Phases	6	6	1 6			1		4	4	4	5		
Permitted Phases	1	1								6			
Detector Phase	6	6	1 6			1		4	4	4	5		
Switch Phase													
Minimum Initial (s)	8.0	8.0				10.0		10.0	10.0	10.0	8.0		
Minimum Split (s)	13.0	13.0				20.0		27.0	27.0	27.0	13.0		
Total Split (s)	15.0	15.0				50.0		30.0	30.0	30.0	15.0		
Total Split (%)	13.6%	13.6%				45.5%		27.3%	27.3%	27.3%	13.6%		
Maximum Green (s)	10.0	10.0				45.0		25.0	25.0	25.0	10.0		
Yellow Time (s)	3.0	3.0				3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0				2.0		2.0	2.0	2.0	2.0		
Lost Time Adjust (s)		0.0				-2.0			0.0	-2.0	0.0		
Total Lost Time (s)		5.0				3.0			5.0	3.0	5.0		
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		
Recall Mode	None	None				C-Max		None	None	None	None		
Walk Time (s)						7.0		7.0	7.0	7.0			
Flash Dont Walk (s)						8.0		15.0	15.0	15.0			
Pedestrian Calls (#/hr)						0		0	0	0			
Act Effct Green (s)		60.0	67.0			48.0			18.9	36.9	11.1	0.0	
Actuated g/C Ratio		0.55	0.61			0.44			0.17	0.34	0.10	0.00	
v/c Ratio		0.22	0.61			0.76			0.51	0.69	0.74	1.21	
Control Delay		16.1	16.3			34.9			49.3	20.0	66.3	0.0	
Queue Delay		0.0	0.6			4.6			0.0	0.2	0.0	0.0	
Total Delay		16.1	17.0			39.5			49.3	20.1	66.3	0.0	
LOS		B	B			D			D	C	E	A	
Approach Delay			16.9			39.5			33.1			34.9	
Approach LOS			B			D			C			C	
Stops (vph)		28	431			1316			211	205	196	114	
Fuel Used(gal)		0	8			17			5	5	5	1	
CO Emissions (g/hr)		34	533			1181			384	319	317	80	
NOx Emissions (g/hr)		7	104			230			75	62	62	15	
VOC Emissions (g/hr)		8	124			274			89	74	73	18	
Dilemma Vehicles (#)		0	0			0			0	0	0	0	
Queue Length 50th (ft)		23	190			336			81	89	82	0	
Queue Length 95th (ft)		49	250			271			114	145	#147	0	
Internal Link Dist (ft)			163			296			732			258	
Turn Bay Length (ft)		150								125			
Base Capacity (vph)		317	1782			1282			715	574	315	169	
Starvation Cap Reductn		0	327			233			0	0	0	0	
Spillback Cap Reductn		0	36			0			0	16	0	0	
Storage Cap Reductn		0	0			0			0	0	0	0	
Reduced v/c Ratio		0.22	0.75			0.93			0.39	0.62	0.72	1.21	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: East Service Road & Seaport Boulevard



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1296	266	84	669	292	127
Future Volume (vph)	1296	266	84	669	292	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	13	11	12
Storage Length (ft)		0	0		125	125
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor	0.94				0.90	
Frt	0.974					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	2916	0	0	3058	3046	1439
Flt Permitted				0.612	0.950	
Satd. Flow (perm)	2916	0	0	1883	2755	1439
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	32					
Link Speed (mph)	30			30	30	
Link Distance (ft)	392			533	498	
Travel Time (s)	8.9			12.1	11.3	
Confl. Peds. (#/hr)		275	275		40	63
Confl. Bikes (#/hr)		12				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Heavy Vehicles (%)	3%	0%	1%	4%	0%	1%
Parking (#/hr)				0		
Adj. Flow (vph)	1350	277	88	697	301	131
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1627	0	0	785	301	131
Turn Type	NA		Perm	NA	Prot	Prot
Protected Phases	1			1	4	4
Permitted Phases			1			
Detector Phase	1		1	1	4	4
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	8.0	8.0
Minimum Split (s)	28.0		28.0	28.0	28.0	28.0
Total Split (s)	60.0		60.0	60.0	50.0	50.0
Total Split (%)	54.5%		54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	55.0		55.0	55.0	45.0	45.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0			-2.0	0.0	0.0
Total Lost Time (s)	3.0			3.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Recall Mode	C-Max		C-Max	C-Max	Min	Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0		16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	86.3			86.3	15.7	15.7
Actuated g/C Ratio	0.78			0.78	0.14	0.14
v/c Ratio	0.71			0.53	0.69	0.64
Control Delay	5.1			6.5	50.1	54.6
Queue Delay	0.1			0.4	0.0	0.0
Total Delay	5.1			6.9	50.1	54.6
LOS	A			A	D	D
Approach Delay	5.1			6.9	51.5	
Approach LOS	A			A	D	
Stops (vph)	608			267	282	123
Fuel Used(gal)	10			6	6	3
CO Emissions (g/hr)	681			419	396	181
NOx Emissions (g/hr)	132			82	77	35
VOC Emissions (g/hr)	158			97	92	42
Dilemma Vehicles (#)	0			0	0	0
Queue Length 50th (ft)	55			86	112	95
Queue Length 95th (ft)	90			161	m148	m139
Internal Link Dist (ft)	312			453	418	
Turn Bay Length (ft)					125	125
Base Capacity (vph)	2294			1476	1246	588
Starvation Cap Reductn	43			0	0	0
Spillback Cap Reductn	0			270	33	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.72			0.65	0.25	0.22

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 12.6 — Intersection LOS: B
Intersection Capacity Utilization 102.7% — ICU Level of Service G
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

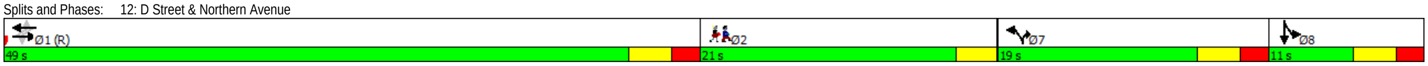
Splits and Phases: 10: B Street & Seaport Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	24	451	747	71	554	24	221	0	28	15	27	31	
Future Volume (vph)	24	451	747	71	554	24	221	0	28	15	27	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.91			0.99		0.96				0.91		
Frt		0.908			0.994				0.850		0.943		
Flt Protected		0.999			0.995		0.950				0.990		
Satd. Flow (prot)	0	2952	0	0	3439	0	1787	0	1615	0	1680	0	
Flt Permitted		0.932			0.648		0.950				0.990		
Satd. Flow (perm)	0	2753	0	0	2236	0	1708	0	1615	0	1610	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		505			5				109		28		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		376			325			372			366		
Travel Time (s)		8.5			7.4			8.5			8.3		
Confl. Peds. (#/hr)	52		181	181		52	23		41	41		23	
Confl. Bikes (#/hr)			16			31							
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.95	0.95	0.95	0.94	0.94	0.94	
Heavy Vehicles (%)	0%	4%	0%	0%	4%	0%	1%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	25	475	786	73	571	25	233	0	29	16	29	33	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1286	0	0	669	0	233	0	29	0	78	0	
Turn Type	Perm	NA		Perm	NA		Prot		Prot	Split	NA		
Protected Phases		1			1		7		7	8	8		2
Permitted Phases	1			1									
Detector Phase	1	1		1	1		7		7	8	8		
Switch Phase													
Minimum Initial (s)	16.0	16.0		16.0	16.0		6.0		6.0	6.0	6.0		4.0
Minimum Split (s)	21.0	21.0		21.0	21.0		11.0		11.0	11.0	11.0		21.0
Total Split (s)	49.0	49.0		49.0	49.0		19.0		19.0	11.0	11.0		21.0
Total Split (%)	49.0%	49.0%		49.0%	49.0%		19.0%		19.0%	11.0%	11.0%		21%
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0		14.0	6.0	6.0		18.0
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)	2.0	2.0		2.0	2.0		2.0		2.0	2.0	2.0		0.0
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0		
Total Lost Time (s)		5.0			5.0		5.0		5.0		5.0		
Lead/Lag	Lead	Lead		Lead	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	C-Max	C-Max		C-Max	C-Max		None		None	None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													6.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		60.0			60.0		19.1		19.1		8.1		
Actuated g/C Ratio		0.60			0.60		0.19		0.19		0.08		
v/c Ratio		0.69			0.50		0.68		0.07		0.48		
Control Delay		11.4			14.7		48.0		0.4		39.5		
Queue Delay		0.0			0.0		0.0		0.0		0.0		
Total Delay		11.4			14.7		48.0		0.4		39.5		
LOS		B			B		D		A		D		
Approach Delay		11.4			14.7			42.7			39.5		
Approach LOS		B			B			D			D		
Stops (vph)		559			371		201		0		46		
Fuel Used(gal)		10			6		4		0		1		
CO Emissions (g/hr)		665			394		273		6		73		
NOx Emissions (g/hr)		129			77		53		1		14		
VOC Emissions (g/hr)		154			91		63		1		17		
Dilemma Vehicles (#)		0			0		0		0		0		
Queue Length 50th (ft)		174			125		138		0		31		
Queue Length 95th (ft)		310			209		211		0		75		
Internal Link Dist (ft)		296			245			292			286		
Turn Bay Length (ft)													
Base Capacity (vph)		1854			1344		341		396		162		
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		0.69			0.50		0.68		0.07		0.48		

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 47 (47%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: D Street & Northern Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	450	142	267	420	10	143	47	305	16	82	8
Future Volume (vph)	1	450	142	267	420	10	143	47	305	16	82	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12	16	12	12	16	12
Storage Length (ft)	0		100	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	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	0.67	0.86	0.99			0.77			0.96	
Frt			0.850		0.997				0.850		0.989	
Flt Protected				0.950				0.964			0.993	
Satd. Flow (prot)	0	3110	1252	1570	1617	0	0	1868	1454	0	1848	0
Flt Permitted		0.954		0.426				0.964			0.993	
Satd. Flow (perm)	0	2966	841	606	1617	0	0	1437	1454	0	1829	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					1				314		3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		191			478			213			457	
Travel Time (s)		4.3			10.9			4.8			10.4	
Confl. Peds. (#/hr)	130		99	99		130	137		56	56		137
Confl. Bikes (#/hr)			15			17						2
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)			0									
Adj. Flow (vph)	1	464	146	272	429	10	147	48	314	17	89	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	465	146	272	439	0	0	195	314	0	115	0
Turn Type	Perm	NA	Perm	D.P+P	NA		Prot	NA	custom	Split	NA	
Protected Phases		1		5	1 5		3		3 5	4	4	
Permitted Phases	1		1	1								
Detector Phase	1	1	1	5	1 5		3		3 5	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	4.0			8.0			8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	10.0			26.0			26.0	26.0	
Total Split (s)	44.0	44.0	44.0	15.0			26.0			25.0	25.0	
Total Split (%)	40.0%	40.0%	40.0%	13.6%			23.6%			22.7%	22.7%	
Maximum Green (s)	37.0	37.0	37.0	9.0			21.0			20.0	20.0	
Yellow Time (s)	3.0	3.0	3.0	3.0			3.0			3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0	3.0			2.0			2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0							-1.0	
Total Lost Time (s)		7.0	7.0	6.0							4.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0			2.0			2.0	2.0	
Recall Mode	C-Max	C-Max	C-Max	None			Max			Max	Max	
Walk Time (s)	7.0	7.0	7.0				7.0			7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0				14.0			14.0	14.0	
Pedestrian Calls (#/hr)	0	0	0				0			0	0	
Act Effct Green (s)		37.0	37.0	47.0	52.0			23.0	31.0		21.0	
Actuated g/C Ratio		0.34	0.34	0.43	0.47			0.21	0.28		0.19	
v/c Ratio		0.47	0.52	0.81	0.57			0.50	0.49		0.32	
Control Delay		25.0	31.1	34.2	14.2			43.6	4.7		41.2	
Queue Delay		0.1	0.0	0.0	0.6			0.0	0.0		0.0	
Total Delay		25.1	31.1	34.2	14.8			43.6	4.7		41.2	
LOS		C	C	C	B			D	A		D	
Approach Delay		26.5			22.2			19.6			41.2	
Approach LOS		C			C			B			D	
Stops (vph)		307	106	170	192			163	28		62	
Fuel Used(gal)		5	2	4	4			3	1		2	
CO Emissions (g/hr)		326	119	265	273			202	67		137	
NOx Emissions (g/hr)		63	23	52	53			39	13		27	
VOC Emissions (g/hr)		76	27	61	63			47	15		32	
Dilemma Vehicles (#)		0	0	0	0			0	0		0	
Queue Length 50th (ft)		124	79	71	135			123	0		49	
Queue Length 95th (ft)		127	119	#155	185			195	39		m71	
Internal Link Dist (ft)		111			398			133			377	
Turn Bay Length (ft)			100									
Base Capacity (vph)		997	282	337	764			390	635		355	
Starvation Cap Reductn		0	0	0	97			0	0		0	
Spillback Cap Reductn		57	0	0	0			0	6		0	
Storage Cap Reductn		0	0	0	0			0	0		0	
Reduced v/c Ratio		0.49	0.52	0.81	0.66			0.50	0.50		0.32	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 105 (95%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 73.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

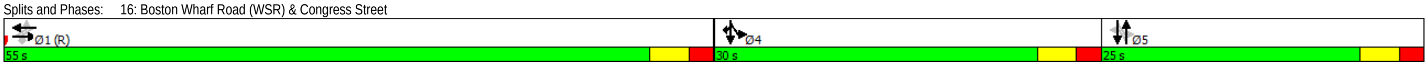
Splits and Phases: 15: A Street/Thomson St & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	418	351	198	330	49	65	47	128	144	329	237
Future Volume (vph)	82	418	351	198	330	49	65	47	128	144	329	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	11	12	12	11	11
Storage Length (ft)	0		0	150		0	0		0	0		125
Storage Lanes	0		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	0.73		0.95		0.84	0.93			0.98	0.68
Frt			0.850		0.981			0.890				0.850
Flt Protected		0.992		0.950			0.950				0.985	
Satd. Flow (prot)	0	1682	1454	1608	2876	0	1805	1316	0	0	1595	1405
Flt Permitted		0.862		0.310			0.479				0.569	
Satd. Flow (perm)	0	1417	1055	525	2876	0	766	1316	0	0	907	951
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244		20			111				129
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		478			521			204			912	
Travel Time (s)		10.9			11.8			4.6			20.7	
Confl. Peds. (#/hr)	121		83	83		121	82		38	38		82
Confl. Bikes (#/hr)			10			8						
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.97	0.97	0.97	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	2%	17%	0%	0%	3%	0%
Parking (#/hr)					0	0						
Adj. Flow (vph)	85	431	362	213	355	53	67	48	132	153	350	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	516	362	213	408	0	67	180	0	0	503	252
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		D.P+P	NA	custom
Protected Phases		1			1			5		4	4 5	4
Permitted Phases	1		1	1			5			5		4
Detector Phase	1	1	1	1	1		5	5		4	4 5	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		8.0	8.0		8.0		8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		21.0	21.0		13.0		13.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0		25.0	25.0		30.0		30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		22.7%	22.7%		27.3%		27.3%
Maximum Green (s)	50.0	50.0	50.0	50.0	50.0		20.0	20.0		25.0		25.0
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0		-1.0	-1.0				-1.0
Total Lost Time (s)		4.0	4.0	4.0	4.0		4.0	4.0				4.0
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		2.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min		Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		0.0	0.0		7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		16.0	16.0		0.0		0.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0		0
Act Effct Green (s)		53.8	53.8	53.8	53.8		18.2	18.2			44.2	26.0
Actuated g/C Ratio		0.49	0.49	0.49	0.49		0.17	0.17			0.40	0.24
v/c Ratio		0.75	0.57	0.83	0.29		0.53	0.58			0.95	0.59
Control Delay		19.7	5.1	59.4	18.9		56.8	24.5			59.3	18.5
Queue Delay		0.7	0.1	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		20.4	5.1	59.4	18.9		56.8	24.5			59.3	18.5
LOS		C	A	E	B		E	C			E	B
Approach Delay		14.1			32.8			33.3			45.7	
Approach LOS		B			C			C			D	
Stops (vph)		342	59	171	420		57	68			512	163
Fuel Used(gal)		6	2	4	5		1	2			12	3
CO Emissions (g/hr)		403	140	290	372		82	107			832	243
NOx Emissions (g/hr)		78	27	56	72		16	21			162	47
VOC Emissions (g/hr)		93	32	67	86		19	25			193	56
Dilemma Vehicles (#)		0	0	0	0		0	0			0	0
Queue Length 50th (ft)		308	25	160	123		42	42			365	78
Queue Length 95th (ft)		#467	35	#266	174		90	114			m#480	m128
Internal Link Dist (ft)		398			441			124			832	
Turn Bay Length (ft)				150								125
Base Capacity (vph)		692	640	256	1416		146	341			550	430
Starvation Cap Reductn		34	10	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		0.78	0.57	0.83	0.29		0.46	0.53			0.91	0.59

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 105 (95%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 99.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Boston Wharf Road (WSR) & Congress Street



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations										
Traffic Volume (vph)	61	701	452	111	73	135	55	53	160	68
Future Volume (vph)	61	701	452	111	73	135	55	53	160	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	16	12	12	12	12	12	12
Storage Length (ft)	175			50	0		0		0	0
Storage Lanes	1			0	0		1		2	0
Taper Length (ft)	25				25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.97	0.95
Ped Bike Factor	0.95		0.97			0.97			0.95	
Frt			0.970				0.850		0.964	
Flt Protected	0.950					0.983			0.964	
Satd. Flow (prot)	1624	3249	3128	0	0	3173	1454	0	3022	0
Flt Permitted	0.385					0.983			0.964	
Satd. Flow (perm)	629	3249	3128	0	0	3069	1454	0	2917	0
Right Turn on Red				Yes			Yes			
Satd. Flow (RTOR)			30				69			
Link Speed (mph)		30	30			30			30	
Link Distance (ft)		521	509			178			200	
Travel Time (s)		11.8	11.6			4.0			4.5	
Confl. Peds. (#/hr)	100			100	20		17	20		17
Confl. Bikes (#/hr)				3						
Peak Hour Factor	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	64	730	491	121	79	147	60	56	168	72
Shared Lane Traffic (%)										
Lane Group Flow (vph)	64	730	612	0	0	226	60	0	296	0
Turn Type	Perm	NA	NA		Split	NA	Prot	Prot	Prot	
Protected Phases		1	1		2	2	2	3	3	
Permitted Phases	1									
Detector Phase	1	1	1		2	2	2	3	3	
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	32.0	32.0	32.0		14.0	14.0	14.0	30.0	30.0	
Total Split (s)	40.0	40.0	40.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)	36.4%	36.4%	36.4%		31.8%	31.8%	31.8%	31.8%	31.8%	
Maximum Green (s)	35.0	35.0	35.0		30.0	30.0	30.0	30.0	30.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	3.0	3.0	3.0			3.0	3.0		3.0	
Lead/Lag					Lead	Lead	Lead	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	C-Max	C-Max	C-Max		Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	0.0	0.0	
Flash Dont Walk (s)	15.0	15.0	15.0		0.0	0.0	0.0	24.0	24.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	
Act Effct Green (s)	69.6	69.6	69.6			14.2	14.2		17.2	
Actuated g/C Ratio	0.63	0.63	0.63			0.13	0.13		0.16	
v/c Ratio	0.16	0.36	0.31			0.55	0.24		0.63	
Control Delay	12.3	11.1	14.3			49.7	10.6		49.1	
Queue Delay	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	12.3	11.1	14.3			49.7	10.6		49.1	
LOS	B	B	B			D	B		D	
Approach Delay		11.2	14.3			41.5			49.1	
Approach LOS		B	B			D			D	
Stops (vph)	24	279	282			189	9		255	
Fuel Used(gal)	1	6	5			3	0		5	
CO Emissions (g/hr)	37	418	379			240	17		326	
NOx Emissions (g/hr)	7	81	74			47	3		63	
VOC Emissions (g/hr)	9	97	88			56	4		75	
Dilemma Vehicles (#)	0	0	0			0	0		0	
Queue Length 50th (ft)	15	104	111			80	0		102	
Queue Length 95th (ft)	m32	m172	m154			115	32		140	
Internal Link Dist (ft)		441	429			98			120	
Turn Bay Length (ft)	175									
Base Capacity (vph)	397	2054	1988			923	471		879	
Starvation Cap Reductn	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0			0	0		0	
Reduced v/c Ratio	0.16	0.36	0.31			0.24	0.13		0.34	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 105 (95%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 59.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Congress Street & East Service Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑	↱	↰	↰↑↱		↰	↑	↱		↑↑	↱
Traffic Volume (vph)	134	376	314	485	246	126	247	253	331	25	259	69
Future Volume (vph)	134	376	314	485	246	126	247	253	331	25	259	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	14	12	12	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)	25			25			25			25		
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		0.99		0.98	0.97		0.98				0.99	
Frt			0.850		0.969				0.850			0.850
Flt Protected		0.987		0.950	0.981		0.950				0.996	
Satd. Flow (prot)	0	3152	1454	1464	2803	0	1841	1824	1439	0	3100	1405
Flt Permitted		0.987		0.950	0.981		0.360				0.905	
Satd. Flow (perm)	0	3114	1454	1440	2785	0	685	1824	1439	0	2801	1405
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					26				341			72
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		509			995			220			498	
Travel Time (s)		11.6			22.6			5.0			11.3	
Confl. Peds. (#/hr)	71		21	21		71	23		70	70		23
Confl. Bikes (#/hr)			5			8						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	1%	2%	0%	1%	6%	0%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	138	388	324	500	254	130	255	261	341	26	270	72
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	526	324	250	634	0	255	261	341	0	296	72
Turn Type	Split	NA	pt+ov	Split	NA		D.P+P	NA	Prot	Perm	NA	pt+ov
Protected Phases	2	2	2 3	1	1		3	3 4	3 4		4	2 4
Permitted Phases							4			4		
Detector Phase	2	2	2 3	1	1		3	3 4	3 4	4	4	2 4
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0			8.0	8.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		30.0			13.0	13.0	
Total Split (s)	30.0	30.0		30.0	30.0		30.0			20.0	20.0	
Total Split (%)	27.3%	27.3%		27.3%	27.3%		27.3%			18.2%	18.2%	
Maximum Green (s)	25.0	25.0		25.0	25.0		25.0			15.0	15.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		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)		3.0		3.0	3.0		3.0				3.0	
Lead/Lag	Lead	Lead					Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0			2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max			None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0					
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		18.0					
Pedestrian Calls (#/hr)	0	0		0	0		0					
Act Effct Green (s)		27.0	57.0	28.0	28.0		43.0	46.0	46.0		16.0	43.0
Actuated g/C Ratio		0.25	0.52	0.25	0.25		0.39	0.42	0.42		0.15	0.39
v/c Ratio		0.68	0.43	0.67	0.86		0.46	0.34	0.43		0.73	0.12
Control Delay		40.4	15.1	43.5	43.8		24.6	23.1	3.9		48.7	3.3
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		40.4	15.1	43.5	43.8		24.6	23.1	3.9		48.7	3.3
LOS		D	B	D	D		C	C	A		D	A
Approach Delay		30.7			43.7			15.9			39.8	
Approach LOS		C			D			B			D	
Stops (vph)		462	199	187	449		164	166	26		274	12
Fuel Used(gal)		9	3	5	13		3	3	1		5	0
CO Emissions (g/hr)		613	232	353	890		179	177	68		380	27
NOx Emissions (g/hr)		119	45	69	173		35	35	13		74	5
VOC Emissions (g/hr)		142	54	82	206		42	41	16		88	6
Dilemma Vehicles (#)		0	0	0	0		0	0	0		0	0
Queue Length 50th (ft)		193	149	157	192		117	121	0		109	4
Queue Length 95th (ft)		252	233	m101	m112		180	185	53		161	m14
Internal Link Dist (ft)		429			915			140			418	
Turn Bay Length (ft)			200	250								125
Base Capacity (vph)		773	753	372	733		551	779	810		432	605
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		0.68	0.43	0.67	0.86		0.46	0.34	0.42		0.69	0.12

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 1:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: B Street & Congress Street

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (vph)	24	113	201	326	145	212	80	6	377	197	48	10	27	818	61
Future Volume (vph)	24	113	201	326	145	212	80	6	377	197	48	10	27	818	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	13	12	12	11	12	12	12	12	14	12
Storage Length (ft)		0		150	0		0		0		0		0		0
Storage Lanes		0		1	0		0		2		0		0		0
Taper Length (ft)		25			25				25				25		
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	0.95	0.95	0.95
Ped Bike Factor			0.92			0.94				0.98				0.98	
Frt			0.966	0.850		0.973				0.971				0.990	
Flt Protected			0.985			0.984			0.950					0.998	
Satd. Flow (prot)	0	0	2767	1327	0	3086	0	0	2988	1582	0	0	0	3360	0
Flt Permitted			0.985			0.984			0.200					0.998	
Satd. Flow (perm)	0	0	2650	1327	0	2994	0	0	629	1582	0	0	0	3340	0
Right Turn on Red				No			Yes				Yes				Yes
Satd. Flow (RTOR)						19				10				6	
Link Speed (mph)			30			30				30				30	
Link Distance (ft)			995			319				317				372	
Travel Time (s)			22.6			7.3				7.2				8.5	
Confl. Peds. (#/hr)	37	50		57	57		50	57	37		57	50	57		37
Confl. Bikes (#/hr)				7			5				4				8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	4%	3%	0%	2%	0%	0%	2%	3%	0%	0%	0%	1%	0%
Parking (#/hr)											0				
Adj. Flow (vph)	25	119	212	343	158	230	87	7	410	214	52	10	28	835	62
Shared Lane Traffic (%)				31%											
Lane Group Flow (vph)	0	0	462	237	0	475	0	0	417	266	0	0	0	935	0
Turn Type	Perm	Split	NA	Prot	Split	NA		Perm	Split	NA		Perm	Split	NA	
Protected Phases		1	1	1	4	4			2	2			3	3	
Permitted Phases	1							2				3			
Detector Phase	1	1	1	1	4	4		2	2	2		3	3	3	
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	8.0	8.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	17.0	17.0		27.0	27.0	27.0		18.0	18.0	18.0	
Total Split (s)	38.0	38.0	38.0	38.0	17.0	17.0		27.0	27.0	27.0		28.0	28.0	28.0	
Total Split (%)	34.5%	34.5%	34.5%	34.5%	15.5%	15.5%		24.5%	24.5%	24.5%		25.5%	25.5%	25.5%	
Maximum Green (s)	30.0	30.0	30.0	30.0	9.0	9.0		18.0	18.0	18.0		20.0	20.0	20.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	4.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0	
Lost Time Adjust (s)			-2.0	-2.0		-2.0			-2.0	-2.0				-2.0	
Total Lost Time (s)			6.0	6.0		6.0			7.0	7.0				6.0	
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		2.0	2.0	2.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None		Max	Max	Max		Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0				7.0	7.0	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	4.0	4.0	4.0	4.0				10.0	10.0	10.0		2.0	2.0	2.0	
Pedestrian Calls (#/hr)	0	0	0	0				0	0	0		0	0	0	
Act Effct Green (s)			32.0	32.0		11.0			20.0	20.0				22.0	
Actuated g/C Ratio			0.29	0.29		0.10			0.18	0.18				0.20	
v/c Ratio			0.57	0.61		1.46			3.66	0.90				1.38	
Control Delay			26.2	30.6		258.7			1232.0	70.1				216.3	
Queue Delay			0.2	1.5		0.0			0.0	0.0				0.0	
Total Delay			26.4	32.1		258.7			1232.0	70.1				216.3	
LOS			C	C		F			F	E				F	
Approach Delay			28.3			258.7				779.5				216.3	
Approach LOS			C			F				F				F	
Stops (vph)			398	209		314			288	272				705	
Fuel Used(gal)			8	4		26			99	6				47	
CO Emissions (g/hr)			555	301		1806			6910	392				3278	
NOx Emissions (g/hr)			108	59		351			1344	76				638	
VOC Emissions (g/hr)			129	70		419			1601	91				760	
Dilemma Vehicles (#)			0	0		0			0	0				0	
Queue Length 50th (ft)			174	181		~237			~268	166				~464	
Queue Length 95th (ft)			214	265		#345			#372	#325				#595	
Internal Link Dist (ft)			915			239				237				292	
Turn Bay Length (ft)				150											
Base Capacity (vph)			804	386		325			114	295				676	
Starvation Cap Reductn			0	0		0			0	0				0	
Spillback Cap Reductn			50	48		0			0	0				0	
Storage Cap Reductn			0	0		0			0	0				0	
Reduced v/c Ratio			0.61	0.70		1.46			3.66	0.90				1.38	

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: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.66
Intersection Signal Delay: 314.2 Intersection LOS: F
Intersection Capacity Utilization 99.2% 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: 19: D Street & Congress Street

Ø1 (R)	Ø2	Ø3	Ø4
38 s	27 s	28 s	17 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	31	0	4	28	1	0	629	0	0	1294	0	
Future Volume (vph)	0	31	0	4	28	1	0	629	0	0	1294	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	13	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00	
Ped Bike Factor													
Frt					0.996								
Flt Protected					0.994								
Satd. Flow (prot)	0	912	0	0	972	0	0	4776	0	0	3291	0	
Flt Permitted					0.961								
Satd. Flow (perm)	0	912	0	0	940	0	0	4776	0	0	3291	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					1								
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		368			292			293			317		
Travel Time (s)		8.4			6.6			6.7			7.2		
Confl. Peds. (#/hr)									67				
Confl. Bikes (#/hr)									4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	100%	0%	0%	100%	0%	0%	1%	0%	0%	2%	0%	
Parking (#/hr)									0				
Adj. Flow (vph)	0	34	0	4	30	1	0	662	0	0	1320	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	34	0	0	35	0	0	662	0	0	1320	0	
Turn Type		NA		Perm	NA			NA			NA		
Protected Phases		3			3			1			1 2		2
Permitted Phases				3									
Detector Phase		3		3	3			1			1 2		
Switch Phase													
Minimum Initial (s)		8.0		8.0	8.0			20.0					4.0
Minimum Split (s)		15.0		15.0	15.0			27.0					10.0
Total Split (s)		25.0		25.0	25.0			74.0					11.0
Total Split (%)		22.7%		22.7%	22.7%			67.3%					10%
Maximum Green (s)		19.0		19.0	19.0			69.0					6.0
Yellow Time (s)		3.0		3.0	3.0			4.0					4.0
All-Red Time (s)		3.0		3.0	3.0			1.0					1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0					
Total Lost Time (s)		5.0			5.0			4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0		2.0	2.0			2.0					2.0
Recall Mode		None		None	None			C-Max					Max
Walk Time (s)								7.0					
Flash Dont Walk (s)								5.0					
Pedestrian Calls (#/hr)								0					
Act Effct Green (s)		10.7			10.7			82.1			93.9		
Actuated g/C Ratio		0.10			0.10			0.75			0.85		
v/c Ratio		0.38			0.38			0.19			0.47		
Control Delay		58.4			56.6			5.1			6.4		
Queue Delay		0.0			0.0			0.2			2.2		
Total Delay		58.4			56.6			5.3			8.5		
LOS		E			E			A			A		
Approach Delay		58.4			56.6			5.3			8.5		
Approach LOS		E			E			A			A		
Stops (vph)		30			30			196			560		
Fuel Used(gal)		1			1			3			8		
CO Emissions (g/hr)		44			42			222			557		
NOx Emissions (g/hr)		8			8			43			108		
VOC Emissions (g/hr)		10			10			51			129		
Dilemma Vehicles (#)		0			0			0			0		
Queue Length 50th (ft)		23			23			63			91		
Queue Length 95th (ft)		54			55			44			m60		
Internal Link Dist (ft)		288			212			213			237		
Turn Bay Length (ft)													
Base Capacity (vph)		165			171			3562			2808		
Starvation Cap Reductn		0			0			1828			1296		
Spillback Cap Reductn		0			0			72			284		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.21			0.20			0.38			0.87		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 9.1 Intersection LOS: A
Intersection Capacity Utilization 53.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: D Street & Transitway

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	439	629	707	592	
Future Volume (vph)	0	0	439	629	707	592	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	12	13	12	
Storage Length (ft)	0	0	200			0	
Storage Lanes	0	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	
Ped Bike Factor			0.99		0.95		
Frt					0.932		
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1679	3217	2925	0	
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1657	3217	2925	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					216		
Link Speed (mph)	30			30	30		
Link Distance (ft)	346			297	293		
Travel Time (s)	7.9			6.8	6.7		
Confl. Peds. (#/hr)			49			49	
Confl. Bikes (#/hr)						15	
Peak Hour Factor	0.25	0.25	0.96	0.96	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	1%	
Adj. Flow (vph)	0	0	457	655	729	610	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	457	655	1339	0	
Turn Type			Prot	NA	NA		
Protected Phases			3	1 3	1		2
Permitted Phases							
Detector Phase			3	1 3	1		
Switch Phase							
Minimum Initial (s)			8.0		15.0		8.0
Minimum Split (s)			15.0		23.0		28.0
Total Split (s)			37.0		45.0		28.0
Total Split (%)			33.6%		40.9%		25%
Maximum Green (s)			31.0		39.0		24.0
Yellow Time (s)			4.0		4.0		4.0
All-Red Time (s)			2.0		2.0		0.0
Lost Time Adjust (s)			-1.0		-1.0		
Total Lost Time (s)			5.0		5.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0		2.0		2.0
Recall Mode			Max		C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							1
Act Effct Green (s)			32.0	103.4	62.4		
Actuated g/C Ratio			0.29	0.94	0.57		
v/c Ratio			0.94	0.22	0.76		
Control Delay			56.9	1.7	17.7		
Queue Delay			34.4	0.0	4.6		
Total Delay			91.3	1.8	22.3		
LOS			F	A	C		
Approach Delay				38.6	22.3		
Approach LOS				D	C		
Stops (vph)			386	55	402		
Fuel Used(gal)			8	2	10		
CO Emissions (g/hr)			575	139	690		
NOx Emissions (g/hr)			112	27	134		
VOC Emissions (g/hr)			133	32	160		
Dilemma Vehicles (#)			0	0	0		
Queue Length 50th (ft)			320	0	134		
Queue Length 95th (ft)			m#463	m93	#648		
Internal Link Dist (ft)	266			217	213		
Turn Bay Length (ft)			200				
Base Capacity (vph)			488	3024	1752		
Starvation Cap Reductn			62	411	339		
Spillback Cap Reductn			0	0	87		
Storage Cap Reductn			0	0	0		
Reduced v/c Ratio			1.07	0.25	0.95		

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: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 80.0% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: D Street & I-90 Ramp

Ø1 (R)	Ø2	Ø3
45 s	28 s	37 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	590	120	29	349	474	77	326	28	279	298	130
Future Volume (vph)	270	590	120	29	349	474	77	326	28	279	298	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	12	12	16	16	12	16	12	11	13	12
Storage Length (ft)	155		0	0		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.95
Ped Bike Factor	0.98	0.98				0.92	0.96	0.99		0.96	0.97	
Frt		0.975				0.850		0.988			0.961	
Flt Protected	0.950			0.950			0.950			0.950	0.993	
Satd. Flow (prot)	1555	3032	0	1464	1730	1599	1593	3351	0	1401	2780	0
Flt Permitted	0.258			0.141			0.950			0.950	0.993	
Satd. Flow (perm)	412	3032	0	217	1730	1473	1530	3351	0	1344	2764	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		27						7			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		635			580			659			297	
Travel Time (s)		14.4			13.2			15.0			6.8	
Confl. Peds. (#/hr)	37		54	54		37	51		40	40		51
Confl. Bikes (#/hr)			12			16			2			9
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	7%	1%	11%	12%	3%	2%	7%	18%	2%	12%	0%
Parking (#/hr)			0						0			
Adj. Flow (vph)	284	621	126	32	379	515	84	354	30	303	324	141
Shared Lane Traffic (%)										26%		
Lane Group Flow (vph)	284	747	0	32	379	515	84	384	0	224	544	0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	4	1 4			1	2	3	3		2	2	
Permitted Phases	1			1		1						
Detector Phase	4	1 4		1	1	2	3	3		2	2	
Switch Phase												
Minimum Initial (s)	6.0			8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0			30.0	30.0	28.0	27.0	27.0		28.0	28.0	
Total Split (s)	19.0			35.0	35.0	29.0	27.0	27.0		29.0	29.0	
Total Split (%)	17.3%			31.8%	31.8%	26.4%	24.5%	24.5%		26.4%	26.4%	
Maximum Green (s)	11.0			27.0	27.0	22.0	20.0	20.0		22.0	22.0	
Yellow Time (s)	4.0			4.0	4.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0			4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0			7.0	7.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag						Lead	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	Max			C-Max	C-Max	Ped	Max	Max		Ped	Ped	
Walk Time (s)				7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				12.0	12.0	13.0	12.0	12.0		13.0	13.0	
Pedestrian Calls (#/hr)				0	0	0	0	0		0	0	
Act Effct Green (s)	40.4	47.4		28.4	28.4	52.0	21.0	21.0		22.6	22.6	
Actuated g/C Ratio	0.37	0.43		0.26	0.26	0.47	0.19	0.19		0.21	0.21	
v/c Ratio	1.03	0.57		0.57	0.85	0.71	0.28	0.60		0.78	0.91	
Control Delay	82.5	12.3		75.7	54.4	19.6	40.9	44.2		46.0	45.0	
Queue Delay	2.3	0.0		0.0	0.0	8.6	0.0	0.6		3.2	6.2	
Total Delay	84.8	12.3		75.7	54.4	28.2	40.9	44.8		49.2	51.2	
LOS	F	B		E	D	C	D	D		D	D	
Approach Delay		32.3			40.6			44.1			50.6	
Approach LOS		C			D			D			D	
Stops (vph)	158	446		20	235	273	65	311		183	430	
Fuel Used(gal)	7	8		1	7	6	1	7		3	8	
CO Emissions (g/hr)	471	542		48	471	387	98	469		239	567	
NOx Emissions (g/hr)	92	105		9	92	75	19	91		46	110	
VOC Emissions (g/hr)	109	126		11	109	90	23	109		55	131	
Dilemma Vehicles (#)	0	0		0	0	0	0	0		0	0	
Queue Length 50th (ft)	~78	78		15	183	146	51	128		164	189	
Queue Length 95th (ft)	#293	140		m#66	#398	246	98	180		m#247	#306	
Internal Link Dist (ft)		555			500			579			217	
Turn Bay Length (ft)	155						150			200		
Base Capacity (vph)	276	1321		56	446	727	304	645		292	610	
Starvation Cap Reductn	0	0		0	0	0	0	0		23	41	
Spillback Cap Reductn	2	0		0	0	176	0	66		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.04	0.57		0.57	0.85	0.93	0.28	0.66		0.83	0.96	

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 109 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 40.8 Intersection LOS: D
Intersection Capacity Utilization 91.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: D Street & Summer Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1089	1	0	946	131	9	30	0	158	86	253
Future Volume (vph)	49	1089	1	0	946	131	9	30	0	158	86	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
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
Frt					0.982						0.931	
Flt Protected	0.950							0.989			0.984	
Satd. Flow (prot)	1805	3610	0	0	3545	0	0	1879	0	0	1741	0
Flt Permitted	0.089							0.816			0.892	
Satd. Flow (perm)	169	3610	0	0	3545	0	0	1550	0	0	1578	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					17						53	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		290			225			430			328	
Travel Time (s)		6.6			5.1			9.8			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	1184	1	0	1028	142	10	33	0	172	93	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1185	0	0	1170	0	0	43	0	0	540	0
Turn Type	D.P+P	NA			NA		Perm	NA		D.P+P	NA	
Protected Phases	6	1 6			1			5		4	4 5	
Permitted Phases	1						5			5		
Detector Phase	6	1 6			1		5	5		4	4 5	
Switch Phase												
Minimum Initial (s)	4.0				8.0		8.0	8.0		8.0		
Minimum Split (s)	9.0				22.0		20.0	20.0		27.0		
Total Split (s)	10.0				50.0		20.0	20.0		30.0		
Total Split (%)	9.1%				45.5%		18.2%	18.2%		27.3%		
Maximum Green (s)	5.0				45.0		15.0	15.0		25.0		
Yellow Time (s)	3.0				3.0		3.0	3.0		3.0		
All-Red Time (s)	2.0				2.0		2.0	2.0		2.0		
Lost Time Adjust (s)	0.0				0.0			0.0				
Total Lost Time (s)	5.0				5.0			5.0				
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0		2.0	2.0		2.0		
Recall Mode	None				C-Max		None	None		None		
Walk Time (s)					7.0		0.0	0.0		7.0		
Flash Dont Walk (s)					8.0		10.0	10.0		15.0		
Pedestrian Calls (#/hr)					0		0	0		0		
Act Effct Green (s)	53.4	58.4			45.0			12.0			36.6	
Actuated g/C Ratio	0.49	0.53			0.41			0.11			0.33	
v/c Ratio	0.26	0.62			0.80			0.26			0.90	
Control Delay	19.7	12.0			30.2			26.9			47.0	
Queue Delay	0.0	0.1			3.1			0.0			0.0	
Total Delay	19.7	12.1			33.3			26.9			47.0	
LOS	B	B			C			C			D	
Approach Delay		12.4			33.3			26.9			47.0	
Approach LOS		B			C			C			D	
Stops (vph)	18	290			700			39			382	
Fuel Used(gal)	0	7			12			1			8	
CO Emissions (g/hr)	28	471			865			50			569	
NOx Emissions (g/hr)	6	92			168			10			111	
VOC Emissions (g/hr)	7	109			200			12			132	
Dilemma Vehicles (#)	0	0			0			0			0	
Queue Length 50th (ft)	12	136			271			32			289	
Queue Length 95th (ft)	m35	141			377			m64			#465	
Internal Link Dist (ft)		210			145			350			248	
Turn Bay Length (ft)	125											
Base Capacity (vph)	206	1915			1460			211			644	
Starvation Cap Reductn	0	100			194			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.26	0.65			0.92			0.20			0.84	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 27.1 Intersection LOS: C
Intersection Capacity Utilization 81.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Seaport Boulevard & Fan Pier Boulevard

Ø1 (R)	Ø4	Ø5	Ø6
50 s	30 s	20 s	10 s

Movement	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	3	12	5	394	9	1	8	80
Future Volume (Veh/h)	3	12	5	394	9	1	8	80
Sign Control	Free				Free		Stop	
Grade	0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.98	0.98	0.98
Hourly flow rate (vph)	3	13	0	424	10	0	8	82
Pedestrians	213						83	
Lane Width (ft)	11.0						11.0	
Walking Speed (ft/s)	4.0						4.0	
Percent Blockage	16						6	
Right turn flare (veh)								
Median type	None				None			
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked			0.00			0.00		
vC, conflicting volume			0	99		0	1164	92
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			0	99		0	1164	92
tC, single (s)			0.0	4.1		0.0	6.4	6.2
tC, 2 stage (s)								
tF (s)			0.0	2.2		0.0	3.5	3.3
p0 queue free %			0	70		0	93	91
cM capacity (veh/h)			0	1411		0	119	906

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	16	434	90
Volume Left	0	424	8
Volume Right	13	0	82
cSH	1700	1411	571
Volume to Capacity	0.01	0.30	0.16
Queue Length 95th (ft)	0	32	14
Control Delay (s)	0.0	8.5	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	8.5	12.5
Approach LOS			B

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	35	54	1	260	24	18	148
Future Volume (Veh/h)	35	54	1	260	24	18	148
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.92	0.97	0.97
Hourly flow rate (vph)	38	58	0	283	26	19	153
Pedestrians						407	
Lane Width (ft)						11.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						31	
Right turn flare (veh)							
Median type		None		None			
Median storage veh)							
Upstream signal (ft)				1160			
pX, platoon unblocked			0.00				
vC, conflicting volume	716		0			837	703
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	716		0			837	703
tC, single (s)	4.1		0.0			6.4	6.2
tC, 2 stage (s)							
tF (s)	2.2		0.0			3.5	3.3
p0 queue free %	94		0			91	50
cM capacity (veh/h)	616		0			219	304

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	96	309	172
Volume Left	38	0	19
Volume Right	0	26	153
cSH	616	1700	292
Volume to Capacity	0.06	0.18	0.59
Queue Length 95th (ft)	5	0	87
Control Delay (s)	4.9	0.0	33.7
Lane LOS	A		D
Approach Delay (s)	4.9	0.0	33.7
Approach LOS			D

Intersection Summary			
Average Delay	10.9		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	1	0	73	0	32	159	0	0	27	21	47	171	125
Future Volume (Veh/h)	1	0	73	0	32	159	0	0	27	21	47	171	125
Sign Control			Free			Free			Stop			Stop	
Grade			0%			0%			0%			0%	
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	0.90
Hourly flow rate (vph)	0	0	79	0	35	173	0	0	29	23	51	186	139
Pedestrians												363	
Lane Width (ft)												12.0	
Walking Speed (ft/s)												4.0	
Percent Blockage												30	
Right turn flare (veh)													
Median type			None			None							
Median storage veh)													
Upstream signal (ft)						858							
pX, platoon unblocked	0.00												
vC, conflicting volume	0	536			79			554	685	79	722	685	536
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	0	536			79			554	685	79	722	685	536
tC, single (s)	0.0	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	0.0	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	100			98			100	89	98	68	27	63
cM capacity (veh/h)	0	727			1532			89	254	987	162	254	376

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	79	208	52	376
Volume Left	0	35	0	51
Volume Right	0	0	23	139
cSH	727	1532	379	265
Volume to Capacity	0.00	0.02	0.14	1.42
Queue Length 95th (ft)	0	2	12	516
Control Delay (s)	0.0	1.4	16.0	244.4
Lane LOS		A	C	F
Approach Delay (s)	0.0	1.4	16.0	244.4
Approach LOS			C	F

Intersection Summary			
Average Delay	130.1		
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	3	12	126	0	0	171	25	0	83	0	90	0	13
Future Volume (Veh/h)	3	12	126	0	0	171	25	0	83	0	90	0	13
Sign Control			Free			Free			Stop			Stop	
Grade			0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	13	135	0	0	186	27	0	90	0	98	0	14
Pedestrians						15						285	
Lane Width (ft)						12.0						12.0	
Walking Speed (ft/s)						4.0						4.0	
Percent Blockage						1						24	
Right turn flare (veh)													
Median type			None			None							
Median storage veh)													
Upstream signal (ft)						655							
pX, platoon unblocked	0.00												
vC, conflicting volume	0	498			135			374	659	150	706	646	484
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	0	498			135			374	659	150	706	646	484
tC, single (s)	0.0	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	0.0	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	98			100			100	69	100	41	100	97
cM capacity (veh/h)	0	821			1462			459	290	891	165	295	447

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	213	90	112
Volume Left	13	0	0	98
Volume Right	0	27	0	14
cSH	821	1700	290	179
Volume to Capacity	0.02	0.13	0.31	0.62
Queue Length 95th (ft)	1	0	32	88
Control Delay (s)	1.0	0.0	22.9	53.6
Lane LOS	A		C	F
Approach Delay (s)	1.0	0.0	22.9	53.6
Approach LOS			C	F

Intersection Summary				
Average Delay	14.6			
Intersection Capacity Utilization	Err%	ICU Level of Service		H
Analysis Period (min)	15			

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	1	11	190	21	14	34	163	31	22	0	30	51	0	10
Future Volume (Veh/h)	1	11	190	21	14	34	163	31	22	0	30	51	0	10
Sign Control			Free				Free			Stop			Stop	
Grade			0%				0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.95
Hourly flow rate (vph)	0	11	194	23	0	37	177	34	24	0	33	54	0	11
Pedestrians			70				45						140	
Lane Width (ft)			12.0				12.0						12.0	
Walking Speed (ft/s)			4.0				4.0						4.0	
Percent Blockage			6				4						12	
Right turn flare (veh)														
Median type			None				None							
Median storage veh)														
Upstream signal (ft)							278							
pX, platoon unblocked	0.00				0.00									
vC, conflicting volume	0	351			0	217			576	652	250	714	647	404
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	0	351			0	217			576	652	250	714	647	404
tC, single (s)	0.0	4.1			0.0	4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)														
tF (s)	0.0	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	0	99			0	97			93	100	96	79	100	98
cM capacity (veh/h)	0	1077			0	1365			352	331	763	251	334	541

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	228	248	57	65
Volume Left	11	37	24	54
Volume Right	23	34	33	11
cSH	1077	1365	512	277
Volume to Capacity	0.01	0.03	0.11	0.24
Queue Length 95th (ft)	1	2	9	22
Control Delay (s)	0.5	1.4	12.9	22.0
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	1.4	12.9	22.0
Approach LOS			B	C

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (veh/h)	5	1219	199	2	56	747	0	0
Future Volume (Veh/h)	5	1219	199	2	56	747	0	0
Sign Control		Free				Free	Stop	
Grade		0%				0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.25	0.25
Hourly flow rate (vph)	0	1283	209	0	58	770	0	0
Pedestrians							191	
Lane Width (ft)							0.0	
Walking Speed (ft/s)							4.0	
Percent Blockage							0	
Right turn flare (veh)								
Median type		None				None		
Median storage veh)								
Upstream signal (ft)		600				376		
pX, platoon unblocked	0.00			0.00	0.77		0.81	0.77
vC, conflicting volume	0			0	1683		2080	937
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0			0	1298		1425	334
tC, single (s)	0.0			0.0	4.1		6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0			0.0	2.2		3.5	3.3
p0 queue free %	0			0	86		100	100
cM capacity (veh/h)	0			0	418		90	517

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	855	637	315	513
Volume Left	0	0	58	0
Volume Right	0	209	0	0
cSH	1700	1700	418	1700
Volume to Capacity	0.50	0.37	0.14	0.30
Queue Length 95th (ft)	0	0	12	0
Control Delay (s)	0.0	0.0	4.8	0.0
Lane LOS			A	
Approach Delay (s)	0.0		1.8	
Approach LOS				

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	445	0	6	413	157	4	0	5	85	0	12
Future Volume (Veh/h)	78	445	0	6	413	157	4	0	5	85	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	468	0	6	426	162	4	0	5	92	0	13
Pedestrians											547	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											46	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		789			496							
pX, platoon unblocked	0.80			0.81			0.90	0.90	0.81	0.90	0.90	0.80
vC, conflicting volume	1135			468			1164	1779	468	1703	1698	1054
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1045			225			648	1333	225	1249	1243	944
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	72			99			98	100	99	0	100	91
cM capacity (veh/h)	294			1097			161	54	663	38	62	140

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	550	594	9	105
Volume Left	82	6	4	92
Volume Right	0	162	5	13
cSH	294	1097	279	41
Volume to Capacity	0.28	0.01	0.03	2.53
Queue Length 95th (ft)	28	0	2	285
Control Delay (s)	10.4	0.2	18.4	903.8
Lane LOS	B	A	C	F
Approach Delay (s)	10.4	0.2	18.4	903.8
Approach LOS			C	F

Intersection Summary			
Average Delay	80.2		
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	521	528	43	71	48
Future Volume (Veh/h)	14	521	528	43	71	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.97	0.97	0.96	0.96
Hourly flow rate (vph)	14	532	544	44	74	50
Pedestrians					393	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					33	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1094	191			
pX, platoon unblocked	0.79				0.85	0.79
vC, conflicting volume	981				1519	959
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841				1214	813
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				34	75
cM capacity (veh/h)	425				111	199

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	546	588	124
Volume Left	14	0	74
Volume Right	0	44	50
cSH	425	1700	135
Volume to Capacity	0.03	0.35	0.92
Queue Length 95th (ft)	3	0	154
Control Delay (s)	1.0	0.0	119.0
Lane LOS	A		F
Approach Delay (s)	1.0	0.0	119.0
Approach LOS			F

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix B

Wind

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
1	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	15		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	10		Sitting	15		Acceptable
	B	Spring	18	+80%	Walking	27	+69%	Acceptable
		Summer	14	+75%	Standing	20	+54%	Acceptable
		Fall	16	+60%	Walking	24	+60%	Acceptable
		Winter	20	+100%	Uncomfortable	29	+81%	Acceptable
		Annual	18	+80%	Walking	26	+73%	Acceptable
2	A	Spring	11		Sitting	17		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	14	+27%	Standing	22	+29%	Acceptable
		Summer	10	+25%	Sitting	17	+31%	Acceptable
		Fall	12	+20%	Sitting	20	+25%	Acceptable
		Winter	15	+36%	Standing	24	+41%	Acceptable
		Annual	13	+30%	Standing	22	+38%	Acceptable
3	A	Spring	13		Standing	20		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	12		Sitting	20		Acceptable
		Annual	12		Sitting	19		Acceptable
	B	Spring	13		Standing	20		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	12		Sitting	18		Acceptable
		Winter	14	+17%	Standing	22		Acceptable
		Annual	13		Standing	20		Acceptable
4	A	Spring	15		Standing	22		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	20	+33%	Uncomfortable	28	+27%	Acceptable
		Summer	15	+36%	Standing	21	+31%	Acceptable
		Fall	18	+29%	Walking	25	+19%	Acceptable
		Winter	21	+50%	Uncomfortable	31	+41%	Acceptable
		Annual	19	+36%	Walking	28	+33%	Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
5	A	Spring	18		Walking	25		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	16		Walking	23		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	16		Walking	23		Acceptable
	B	Spring	12	-33%	Sitting	20	-20%	Acceptable
		Summer	9	-25%	Sitting	15	-17%	Acceptable
		Fall	11	-31%	Sitting	19	-17%	Acceptable
		Winter	13	-24%	Standing	23		Acceptable
		Annual	12	-25%	Sitting	20	-13%	Acceptable
6	A	Spring	19		Walking	27		Acceptable
		Summer	16		Walking	23		Acceptable
		Fall	18		Walking	25		Acceptable
		Winter	19		Walking	27		Acceptable
		Annual	18		Walking	26		Acceptable
	B	Spring	16	-16%	Walking	23	-15%	Acceptable
		Summer	12	-25%	Sitting	18	-22%	Acceptable
		Fall	14	-22%	Standing	21	-16%	Acceptable
		Winter	17	-11%	Walking	25		Acceptable
		Annual	15	-17%	Standing	23	-12%	Acceptable
7	A	Spring	14		Standing	23		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	14		Standing	23		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	15		Standing	21		Acceptable
		Summer	12		Sitting	16	-16%	Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	17	+21%	Walking	24		Acceptable
		Annual	15		Standing	21		Acceptable
8	A	Spring	16		Walking	24		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	15		Standing	23		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	15		Standing	22		Acceptable
		Summer	12		Sitting	17	-11%	Acceptable
		Fall	14		Standing	20	-13%	Acceptable
		Winter	17		Walking	24		Acceptable
		Annual	15		Standing	22		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
9	A	Spring	13		Standing	22		Acceptable
		Summer	10		Sitting	17		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	14		Standing	23		Acceptable
		Annual	13		Standing	21		Acceptable
	B	Spring	13		Standing	19	-14%	Acceptable
		Summer	10		Sitting	15	-12%	Acceptable
		Fall	12		Sitting	18	-14%	Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	13		Standing	19		Acceptable
10	A	Spring	12		Sitting	19		Acceptable
		Summer	9		Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	12		Sitting	20		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	10	-17%	Sitting	15	-21%	Acceptable
		Summer	7	-22%	Sitting	11	-27%	Acceptable
		Fall	9	-18%	Sitting	14	-22%	Acceptable
		Winter	10	-17%	Sitting	16	-20%	Acceptable
		Annual	9	-18%	Sitting	15	-17%	Acceptable
11	A	Spring	10		Sitting	17		Acceptable
		Summer	8		Sitting	14		Acceptable
		Fall	9		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	10		Sitting	17		Acceptable
	B	Spring	14	+40%	Standing	22	+29%	Acceptable
		Summer	10	+25%	Sitting	17	+21%	Acceptable
		Fall	12	+33%	Sitting	20	+25%	Acceptable
		Winter	15	+36%	Standing	25	+39%	Acceptable
		Annual	14	+40%	Standing	22	+29%	Acceptable
12	A	Spring	10		Sitting	17		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	10		Sitting	17		Acceptable
	B	Spring	8	-20%	Sitting	13	-24%	Acceptable
		Summer	6	-25%	Sitting	10	-23%	Acceptable
		Fall	7	-30%	Sitting	12	-25%	Acceptable
		Winter	9	-18%	Sitting	15	-17%	Acceptable
		Annual	8	-20%	Sitting	13	-24%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
13	A	Spring	9		Sitting	15		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	15		Acceptable
		Winter	10		Sitting	17		Acceptable
		Annual	9		Sitting	15		Acceptable
	B	Spring	8	-11%	Sitting	13	-13%	Acceptable
		Summer	6	-25%	Sitting	10	-17%	Acceptable
		Fall	8	-11%	Sitting	12	-20%	Acceptable
		Winter	9		Sitting	14	-18%	Acceptable
		Annual	8	-11%	Sitting	13	-13%	Acceptable
14	A	Spring	9		Sitting	15		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	14		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	9		Sitting	15		Acceptable
	B	Spring	15	+67%	Standing	23	+53%	Acceptable
		Summer	12	+50%	Sitting	17	+42%	Acceptable
		Fall	14	+56%	Standing	21	+50%	Acceptable
		Winter	17	+70%	Walking	25	+56%	Acceptable
		Annual	15	+67%	Standing	23	+53%	Acceptable
15	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	9		Sitting	15		Acceptable
		Winter	10		Sitting	17		Acceptable
		Annual	9		Sitting	15		Acceptable
	B	Spring	24	+140%	Uncomfortable	33	+106%	Unacceptable
		Summer	18	+125%	Walking	25	+92%	Acceptable
		Fall	22	+144%	Uncomfortable	30	+100%	Acceptable
		Winter	27	+170%	Uncomfortable	37	+118%	Unacceptable
		Annual	24	+167%	Uncomfortable	33	+120%	Unacceptable
16	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	15		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	21	+110%	Uncomfortable	29	+81%	Acceptable
		Summer	16	+100%	Walking	22	+69%	Acceptable
		Fall	20	+100%	Uncomfortable	27	+80%	Acceptable
		Winter	24	+118%	Uncomfortable	33	+94%	Unacceptable
		Annual	21	+110%	Uncomfortable	29	+81%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
17	A	Spring	12		Sitting	19		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	25	+108%	Uncomfortable	33	+74%	Unacceptable
		Summer	19	+111%	Walking	25	+79%	Acceptable
		Fall	23	+109%	Uncomfortable	30	+67%	Acceptable
		Winter	28	+133%	Dangerous	37	+95%	Unacceptable
		Annual	25	+127%	Uncomfortable	33	+83%	Unacceptable
18	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	15		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	8	-20%	Sitting	11	-31%	Acceptable
		Summer	6	-25%	Sitting	8	-38%	Acceptable
		Fall	7	-30%	Sitting	10	-33%	Acceptable
		Winter	9	-18%	Sitting	12	-33%	Acceptable
		Annual	8	-20%	Sitting	11	-31%	Acceptable
19	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	15	+36%	Standing	21	+24%	Acceptable
		Summer	11	+22%	Sitting	16	+14%	Acceptable
		Fall	13	+30%	Standing	19	+19%	Acceptable
		Winter	16	+45%	Walking	24	+33%	Acceptable
		Annual	14	+40%	Standing	21	+31%	Acceptable
20	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	9	-18%	Sitting	14	-18%	Acceptable
		Summer	7	-22%	Sitting	11	-21%	Acceptable
		Fall	8	-20%	Sitting	13	-19%	Acceptable
		Winter	10		Sitting	16	-11%	Acceptable
		Annual	9	-18%	Sitting	14	-18%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
21	A	Spring	12		Sitting	18		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	15	+25%	Standing	22	+22%	Acceptable
		Summer	11		Sitting	17	+13%	Acceptable
		Fall	14	+27%	Standing	21	+24%	Acceptable
		Winter	16	+33%	Walking	25	+32%	Acceptable
		Annual	15	+36%	Standing	22	+29%	Acceptable
22	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
23	A	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	17		Acceptable
		Winter	11		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	9	-18%	Sitting	14	-22%	Acceptable
		Summer	7	-22%	Sitting	11	-21%	Acceptable
		Fall	8	-20%	Sitting	13	-24%	Acceptable
		Winter	9	-18%	Sitting	15	-21%	Acceptable
		Annual	8	-27%	Sitting	14	-18%	Acceptable
24	A	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	9	-18%	Sitting	13	-28%	Acceptable
		Summer	7	-22%	Sitting	10	-29%	Acceptable
		Fall	8	-20%	Sitting	12	-25%	Acceptable
		Winter	10		Sitting	15	-21%	Acceptable
		Annual	9	-18%	Sitting	13	-24%	Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
25	A	Spring	12		Sitting	20		Acceptable
		Summer	9		Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12		Sitting	20		Acceptable
	B	Spring	8	-33%	Sitting	14	-30%	Acceptable
		Summer	6	-33%	Sitting	11	-27%	Acceptable
		Fall	8	-27%	Sitting	13	-28%	Acceptable
		Winter	9	-31%	Sitting	15	-29%	Acceptable
		Annual	8	-33%	Sitting	14	-30%	Acceptable
26	A	Spring	14		Standing	23		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	7	-50%	Sitting	12	-48%	Acceptable
		Summer	5	-55%	Sitting	9	-50%	Acceptable
		Fall	6	-54%	Sitting	11	-48%	Acceptable
		Winter	7	-56%	Sitting	12	-54%	Acceptable
		Annual	7	-50%	Sitting	11	-52%	Acceptable
27	A	Spring	14		Standing	22		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	25		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	10	-29%	Sitting	16	-27%	Acceptable
		Summer	7	-36%	Sitting	12	-29%	Acceptable
		Fall	9	-31%	Sitting	15	-29%	Acceptable
		Winter	10	-33%	Sitting	17	-32%	Acceptable
		Annual	9	-36%	Sitting	16	-27%	Acceptable
28	A	Spring	12		Sitting	20		Acceptable
		Summer	9		Sitting	16		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	12		Sitting	21		Acceptable
		Annual	11		Sitting	19		Acceptable
	B	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	14	-12%	Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	13		Standing	20		Acceptable
		Annual	12		Sitting	18		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
29	A	Spring	14		Standing	23		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	25		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	13		Standing	18	-22%	Acceptable
		Summer	10		Sitting	14	-22%	Acceptable
		Fall	12		Sitting	17	-19%	Acceptable
		Winter	14		Standing	20	-20%	Acceptable
		Annual	13		Standing	18	-18%	Acceptable
30	A	Spring	21		Uncomfortable	31		Acceptable
		Summer	16		Walking	23		Acceptable
		Fall	19		Walking	28		Acceptable
		Winter	23		Uncomfortable	34		Unacceptable
		Annual	20		Uncomfortable	30		Acceptable
	B	Spring	11	-48%	Sitting	16	-48%	Acceptable
		Summer	8	-50%	Sitting	12	-48%	Acceptable
		Fall	10	-47%	Sitting	15	-46%	Acceptable
		Winter	12	-48%	Sitting	17	-50%	Acceptable
		Annual	11	-45%	Sitting	16	-47%	Acceptable
31	A	Spring	19		Walking	28		Acceptable
		Summer	14		Standing	22		Acceptable
		Fall	17		Walking	26		Acceptable
		Winter	20		Uncomfortable	31		Acceptable
		Annual	18		Walking	28		Acceptable
	B	Spring	10	-47%	Sitting	14	-50%	Acceptable
		Summer	8	-43%	Sitting	12	-45%	Acceptable
		Fall	9	-47%	Sitting	13	-50%	Acceptable
		Winter	10	-50%	Sitting	14	-55%	Acceptable
		Annual	9	-50%	Sitting	13	-54%	Acceptable
32	A	Spring	15		Standing	24		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	7	-53%	Sitting	11	-54%	Acceptable
		Summer	6	-45%	Sitting	9	-50%	Acceptable
		Fall	7	-46%	Sitting	10	-52%	Acceptable
		Winter	7	-56%	Sitting	11	-58%	Acceptable
		Annual	7	-50%	Sitting	10	-57%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
33	A	Spring	15		Standing	24		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	9	-40%	Sitting	15	-38%	Acceptable
		Summer	8	-27%	Sitting	12	-33%	Acceptable
		Fall	9	-31%	Sitting	14	-33%	Acceptable
		Winter	10	-38%	Sitting	16	-38%	Acceptable
		Annual	9	-36%	Sitting	14	-39%	Acceptable
34	A	Spring	14		Standing	23		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	10	-29%	Sitting	16	-30%	Acceptable
		Summer	7	-36%	Sitting	12	-33%	Acceptable
		Fall	9	-31%	Sitting	14	-33%	Acceptable
		Winter	10	-38%	Sitting	17	-35%	Acceptable
		Annual	9	-36%	Sitting	15	-35%	Acceptable
35	A	Spring	15		Standing	24		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	13		Standing	22		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	13	-13%	Standing	20	-17%	Acceptable
		Summer	11		Sitting	16	-16%	Acceptable
		Fall	13		Standing	19	-14%	Acceptable
		Winter	14	-12%	Standing	21	-19%	Acceptable
		Annual	13		Standing	20	-13%	Acceptable
36	A	Spring	13		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	13		Standing	20		Acceptable
	B	Spring	16	+23%	Walking	22		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	15	+25%	Standing	21	+11%	Acceptable
		Winter	18	+29%	Walking	25	+14%	Acceptable
		Annual	16	+23%	Walking	22		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
37	A	Spring	13		Standing	19		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	12		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	12		Sitting	18		Acceptable
	B	Spring	19	+46%	Walking	27	+42%	Acceptable
		Summer	15	+36%	Standing	21	+31%	Acceptable
		Fall	18	+50%	Walking	25	+47%	Acceptable
		Winter	21	+75%	Uncomfortable	30	+58%	Acceptable
		Annual	19	+58%	Walking	27	+50%	Acceptable
38	A	Spring	11		Sitting	17		Acceptable
		Summer	10		Sitting	14		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	9	-18%	Sitting	16		Acceptable
		Summer	7	-30%	Sitting	12	-14%	Acceptable
		Fall	9	-18%	Sitting	14	-12%	Acceptable
		Winter	10		Sitting	17		Acceptable
		Annual	9	-18%	Sitting	15	-12%	Acceptable
39	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	20	+11%	Acceptable
		Annual	11		Sitting	18		Acceptable
40	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	15	+36%	Standing	23	+35%	Acceptable
		Summer	12	+33%	Sitting	17	+31%	Acceptable
		Fall	14	+40%	Standing	21	+31%	Acceptable
		Winter	17	+42%	Walking	25	+39%	Acceptable
		Annual	15	+36%	Standing	23	+35%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
41	A	Spring	10		Sitting	15		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	14		Acceptable
		Winter	10		Sitting	15		Acceptable
		Annual	9		Sitting	14		Acceptable
	B	Spring	9		Sitting	14		Acceptable
		Summer	7	-12%	Sitting	11		Acceptable
		Fall	8	-11%	Sitting	13		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	9		Sitting	14		Acceptable
42	A	Spring	9		Sitting	14		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	13		Acceptable
		Winter	9		Sitting	14		Acceptable
		Annual	9		Sitting	13		Acceptable
	B	Spring	10	+11%	Sitting	16	+14%	Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	14		Acceptable
		Winter	11	+22%	Sitting	17	+21%	Acceptable
		Annual	10	+11%	Sitting	15	+15%	Acceptable
43	A	Spring	13		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	12		Sitting	20		Acceptable
		Winter	14		Standing	23		Acceptable
		Annual	13		Standing	21		Acceptable
	B	Spring	19	+46%	Walking	27	+29%	Acceptable
		Summer	16	+45%	Walking	21	+24%	Acceptable
		Fall	18	+50%	Walking	25	+25%	Acceptable
		Winter	20	+43%	Uncomfortable	28	+22%	Acceptable
		Annual	19	+46%	Walking	26	+24%	Acceptable
44	A	Spring	14		Standing	19		Acceptable
		Summer	12		Sitting	16		Acceptable
		Fall	13		Standing	18		Acceptable
		Winter	13		Standing	19		Acceptable
		Annual	13		Standing	18		Acceptable
	B	Spring	16	+14%	Walking	22	+16%	Acceptable
		Summer	13		Standing	18	+12%	Acceptable
		Fall	15	+15%	Standing	20	+11%	Acceptable
		Winter	17	+31%	Walking	23	+21%	Acceptable
		Annual	15	+15%	Standing	21	+17%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			**Mean Wind Speed**			**Effective Gust Wind Speed**		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
45	A	Spring	15		Standing	22		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	16		Walking	24		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	14		Standing	21		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	15		Standing	24		Acceptable
		Annual	14		Standing	21		Acceptable
46	A	Spring	16		Walking	23		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	12	-25%	Sitting	19	-17%	Acceptable
		Summer	10	-17%	Sitting	16	-11%	Acceptable
		Fall	11	-21%	Sitting	18	-14%	Acceptable
		Winter	13	-24%	Standing	21	-16%	Acceptable
		Annual	12	-20%	Sitting	19	-14%	Acceptable
47	A	Spring	18		Walking	27		Acceptable
		Summer	15		Standing	22		Acceptable
		Fall	17		Walking	26		Acceptable
		Winter	19		Walking	29		Acceptable
		Annual	18		Walking	27		Acceptable
	B	Spring	13	-28%	Standing	18	-33%	Acceptable
		Summer	11	-27%	Sitting	15	-32%	Acceptable
		Fall	12	-29%	Sitting	17	-35%	Acceptable
		Winter	13	-32%	Standing	19	-34%	Acceptable
		Annual	13	-28%	Standing	18	-33%	Acceptable
48	A	Spring	15		Standing	24		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	14		Standing	22		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	15		Standing	24		Acceptable
	B	Spring	20	+33%	Uncomfortable	25		Acceptable
		Summer	17	+42%	Walking	21	+11%	Acceptable
		Fall	18	+29%	Walking	23		Acceptable
		Winter	18	+12%	Walking	24		Acceptable
		Annual	18	+20%	Walking	24		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
49	A	Spring	13		Standing	20		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	13		Standing	20		Acceptable
	B	Spring	6	-54%	Sitting	10	-50%	Acceptable
		Summer	5	-55%	Sitting	8	-50%	Acceptable
		Fall	6	-50%	Sitting	10	-47%	Acceptable
		Winter	7	-50%	Sitting	11	-50%	Acceptable
		Annual	6	-54%	Sitting	10	-50%	Acceptable
50	A	Spring	13		Standing	19		Acceptable
		Summer	11		Sitting	15		Acceptable
		Fall	12		Sitting	18		Acceptable
		Winter	13		Standing	19		Acceptable
		Annual	12		Sitting	18		Acceptable
	B	Spring	15	+15%	Standing	23	+21%	Acceptable
		Summer	13	+18%	Standing	19	+27%	Acceptable
		Fall	14	+17%	Standing	21	+17%	Acceptable
		Winter	15	+15%	Standing	23	+21%	Acceptable
		Annual	14	+17%	Standing	22	+22%	Acceptable
51	A	Spring	15		Standing	21		Acceptable
		Summer	13		Standing	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	14		Standing	20		Acceptable
		Annual	14		Standing	19		Acceptable
	B	Spring	21	+40%	Uncomfortable	29	+38%	Acceptable
		Summer	17	+31%	Walking	24	+41%	Acceptable
		Fall	19	+46%	Walking	26	+37%	Acceptable
		Winter	21	+50%	Uncomfortable	30	+50%	Acceptable
		Annual	20	+43%	Uncomfortable	28	+47%	Acceptable
52	A	Spring	15		Standing	20		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	18		Acceptable
		Winter	14		Standing	19		Acceptable
		Annual	13		Standing	19		Acceptable
	B	Spring	18	+20%	Walking	25	+25%	Acceptable
		Summer	15	+25%	Standing	21	+24%	Acceptable
		Fall	17	+31%	Walking	23	+28%	Acceptable
		Winter	17	+21%	Walking	25	+32%	Acceptable
		Annual	17	+31%	Walking	23	+21%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
53	A	Spring	13		Standing	19		Acceptable
		Summer	11		Sitting	15		Acceptable
		Fall	12		Sitting	18		Acceptable
		Winter	13		Standing	19		Acceptable
		Annual	12		Sitting	18		Acceptable
	B	Spring	16	+23%	Walking	23	+21%	Acceptable
		Summer	14	+27%	Standing	20	+33%	Acceptable
		Fall	15	+25%	Standing	21	+17%	Acceptable
		Winter	15	+15%	Standing	22	+16%	Acceptable
		Annual	15	+25%	Standing	21	+17%	Acceptable
54	A	Spring	12		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	11		Sitting	16		Acceptable
	B	Spring	14	+17%	Standing	21	+24%	Acceptable
		Summer	10	+11%	Sitting	16	+14%	Acceptable
		Fall	12		Sitting	19	+19%	Acceptable
		Winter	15	+36%	Standing	24	+41%	Acceptable
		Annual	13	+18%	Standing	21	+31%	Acceptable
55	A	Spring	15		Standing	21		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	15		Standing	22		Acceptable
		Annual	14		Standing	20		Acceptable
	B	Spring	14		Standing	20		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	13		Standing	20		Acceptable
56	A	Spring	16		Walking	22		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	15		Standing	22		Acceptable
		Annual	15		Standing	21		Acceptable
	B	Spring	20	+25%	Uncomfortable	27	+23%	Acceptable
		Summer	16	+23%	Walking	21	+11%	Acceptable
		Fall	18	+20%	Walking	24	+14%	Acceptable
		Winter	21	+40%	Uncomfortable	28	+27%	Acceptable
		Annual	19	+27%	Walking	26	+24%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
57	A	Spring	14		Standing	20		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	13		Standing	20		Acceptable
	B	Spring	14		Standing	21		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	13		Standing	20		Acceptable
58	A	Spring	12		Sitting	19		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	20		Acceptable
		Annual	12		Sitting	18		Acceptable
	B	Spring	12		Sitting	19		Acceptable
		Summer	9	-18%	Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	20		Acceptable
		Annual	12		Sitting	18		Acceptable
59	A	Spring	13		Standing	20		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	13		Standing	20		Acceptable
	B	Spring	14		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	13		Standing	21		Acceptable
60	A	Spring	18		Walking	22		Acceptable
		Summer	13		Standing	17		Acceptable
		Fall	16		Walking	20		Acceptable
		Winter	17		Walking	23		Acceptable
		Annual	16		Walking	21		Acceptable
	B	Spring	15	-17%	Standing	23		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	13	-19%	Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	14	-12%	Standing	22		Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

<u>Effective Gust Criteria</u>

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
61	A	Spring	20		Uncomfortable	28		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	18		Walking	25		Acceptable
		Winter	22		Uncomfortable	30		Acceptable
		Annual	20		Uncomfortable	27		Acceptable
	B	Spring	15	-25%	Standing	22	-21%	Acceptable
		Summer	12	-25%	Sitting	17	-23%	Acceptable
		Fall	14	-22%	Standing	21	-16%	Acceptable
		Winter	16	-27%	Walking	25	-17%	Acceptable
		Annual	15	-25%	Standing	22	-19%	Acceptable
62	A	Spring	16		Walking	23		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	10	-38%	Sitting	17	-26%	Acceptable
		Summer	8	-38%	Sitting	13	-32%	Acceptable
		Fall	9	-36%	Sitting	16	-24%	Acceptable
		Winter	10	-38%	Sitting	17	-32%	Acceptable
		Annual	10	-33%	Sitting	16	-27%	Acceptable
63	A	Spring	24		Uncomfortable	34		Unacceptable
		Summer	18		Walking	26		Acceptable
		Fall	22		Uncomfortable	31		Acceptable
		Winter	27		Uncomfortable	37		Unacceptable
		Annual	24		Uncomfortable	33		Unacceptable
	B	Spring	19	-21%	Walking	26	-24%	Acceptable
		Summer	15	-17%	Standing	20	-23%	Acceptable
		Fall	18	-18%	Walking	25	-19%	Acceptable
		Winter	21	-22%	Uncomfortable	29	-22%	Acceptable
		Annual	19	-21%	Walking	26	-21%	Acceptable
64	A	Spring	15		Standing	24		Acceptable
		Summer	12		Sitting	20		Acceptable
		Fall	14		Standing	22		Acceptable
		Winter	16		Walking	26		Acceptable
		Annual	14		Standing	24		Acceptable
	B	Spring	11	-27%	Sitting	17	-29%	Acceptable
		Summer	9	-25%	Sitting	13	-35%	Acceptable
		Fall	11	-21%	Sitting	16	-27%	Acceptable
		Winter	12	-25%	Sitting	17	-35%	Acceptable
		Annual	11	-21%	Sitting	16	-33%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
65	A	Spring	12		Sitting	20		Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	13		Standing	22		Acceptable
		Annual	12		Sitting	20		Acceptable
	B	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	14	-12%	Acceptable
		Fall	11		Sitting	17	-11%	Acceptable
		Winter	12		Sitting	18	-18%	Acceptable
		Annual	11		Sitting	17	-15%	Acceptable
66	A	Spring	22		Uncomfortable	30		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	21		Uncomfortable	29		Acceptable
		Annual	20		Uncomfortable	27		Acceptable
	B	Spring	21		Uncomfortable	29		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	20		Uncomfortable	28		Acceptable
		Annual	19		Walking	26		Acceptable
67	A	Spring	21		Uncomfortable	31		Acceptable
		Summer	18		Walking	27		Acceptable
		Fall	19		Walking	28		Acceptable
		Winter	19		Walking	28		Acceptable
		Annual	20		Uncomfortable	29		Acceptable
	B	Spring	19		Walking	27	-13%	Acceptable
		Summer	16	-11%	Walking	24	-11%	Acceptable
		Fall	17	-11%	Walking	25	-11%	Acceptable
		Winter	18		Walking	26		Acceptable
		Annual	17	-15%	Walking	26	-10%	Acceptable
68	A	Spring	27		Uncomfortable	35		Unacceptable
		Summer	20		Uncomfortable	27		Acceptable
		Fall	25		Uncomfortable	32		Unacceptable
		Winter	30		Dangerous	39		Unacceptable
		Annual	27		Uncomfortable	35		Unacceptable
	B	Spring	20	-26%	Uncomfortable	28	-20%	Acceptable
		Summer	15	-25%	Standing	21	-22%	Acceptable
		Fall	19	-24%	Walking	26	-19%	Acceptable
		Winter	22	-27%	Uncomfortable	29	-26%	Acceptable
		Annual	20	-26%	Uncomfortable	27	-23%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
69	A	Spring	23		Uncomfortable	31		Acceptable
		Summer	17		Walking	24		Acceptable
		Fall	21		Uncomfortable	28		Acceptable
		Winter	26		Uncomfortable	35		Unacceptable
		Annual	23		Uncomfortable	31		Acceptable
	B	Spring	17	-26%	Walking	24	-23%	Acceptable
		Summer	13	-24%	Standing	18	-25%	Acceptable
		Fall	15	-29%	Standing	22	-21%	Acceptable
		Winter	19	-27%	Walking	27	-23%	Acceptable
		Annual	17	-26%	Walking	24	-23%	Acceptable
70	A	Spring	17		Walking	25		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	16		Walking	23		Acceptable
		Winter	19		Walking	28		Acceptable
		Annual	17		Walking	25		Acceptable
	B	Spring	15	-12%	Standing	23		Acceptable
		Summer	12		Sitting	17	-11%	Acceptable
		Fall	14	-12%	Standing	20	-13%	Acceptable
		Winter	17	-11%	Walking	25	-11%	Acceptable
		Annual	15	-12%	Standing	22	-12%	Acceptable
71	A	Spring	11		Sitting	17		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	10		Sitting	17		Acceptable
		Winter	11		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	13	+18%	Standing	20	+18%	Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	12	+20%	Sitting	18		Acceptable
		Winter	15	+36%	Standing	22	+16%	Acceptable
		Annual	13	+18%	Standing	20	+18%	Acceptable
72	A	Spring	19		Walking	28		Acceptable
		Summer	18		Walking	26		Acceptable
		Fall	19		Walking	27		Acceptable
		Winter	20		Uncomfortable	29		Acceptable
		Annual	19		Walking	28		Acceptable
	B	Spring	15	-21%	Standing	23	-18%	Acceptable
		Summer	13	-28%	Standing	20	-23%	Acceptable
		Fall	14	-26%	Standing	22	-19%	Acceptable
		Winter	15	-25%	Standing	23	-21%	Acceptable
		Annual	14	-26%	Standing	22	-21%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			**Mean Wind Speed**			**Effective Gust Wind Speed**		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
73	A	Spring	14		Standing	23		Acceptable
		Summer	10		Sitting	17		Acceptable
		Fall	12		Sitting	21		Acceptable
		Winter	15		Standing	24		Acceptable
		Annual	13		Standing	22		Acceptable
	B	Spring	11	-21%	Sitting	17	-26%	Acceptable
		Summer	8	-20%	Sitting	13	-24%	Acceptable
		Fall	10	-17%	Sitting	15	-29%	Acceptable
		Winter	12	-20%	Sitting	18	-25%	Acceptable
		Annual	11	-15%	Sitting	16	-27%	Acceptable
74	A	Spring	12		Sitting	20		Acceptable
		Summer	9		Sitting	16		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	22		Acceptable
		Annual	11		Sitting	20		Acceptable
	B	Spring	8	-33%	Sitting	12	-40%	Acceptable
		Summer	6	-33%	Sitting	10	-38%	Acceptable
		Fall	7	-36%	Sitting	11	-39%	Acceptable
		Winter	8	-38%	Sitting	13	-41%	Acceptable
		Annual	7	-36%	Sitting	12	-40%	Acceptable
75	A	Spring	16		Walking	23		Acceptable
		Summer	13		Standing	20		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	13	-19%	Standing	19	-17%	Acceptable
		Summer	10	-23%	Sitting	15	-25%	Acceptable
		Fall	12	-20%	Sitting	18	-18%	Acceptable
		Winter	14	-12%	Standing	21		Acceptable
		Annual	13	-13%	Standing	19	-14%	Acceptable
76	A	Spring	22		Uncomfortable	30		Acceptable
		Summer	19		Walking	25		Acceptable
		Fall	21		Uncomfortable	28		Acceptable
		Winter	24		Uncomfortable	33		Unacceptable
		Annual	22		Uncomfortable	30		Acceptable
	B	Spring	13	-41%	Standing	18	-40%	Acceptable
		Summer	10	-47%	Sitting	14	-44%	Acceptable
		Fall	12	-43%	Sitting	17	-39%	Acceptable
		Winter	15	-38%	Standing	20	-39%	Acceptable
		Annual	13	-41%	Standing	18	-40%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
77	A	Spring	17		Walking	24		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	16		Walking	23		Acceptable
		Winter	18		Walking	26		Acceptable
		Annual	16		Walking	24		Acceptable
	B	Spring	14	-18%	Standing	22		Acceptable
		Summer	12	-14%	Sitting	17	-15%	Acceptable
		Fall	12	-25%	Sitting	18	-22%	Acceptable
		Winter	14	-22%	Standing	22	-15%	Acceptable
		Annual	13	-19%	Standing	20	-17%	Acceptable
78	A	Spring	21		Uncomfortable	29		Acceptable
		Summer	17		Walking	23		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	21		Uncomfortable	29		Acceptable
		Annual	19		Walking	26		Acceptable
	B	Spring	17	-19%	Walking	26	-10%	Acceptable
		Summer	15	-12%	Standing	21		Acceptable
		Fall	15	-12%	Standing	21	-12%	Acceptable
		Winter	17	-19%	Walking	26	-10%	Acceptable
		Annual	16	-16%	Walking	23	-12%	Acceptable
79	A	Spring	17		Walking	25		Acceptable
		Summer	13		Standing	20		Acceptable
		Fall	14		Standing	22		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	14	-18%	Standing	21	-16%	Acceptable
		Summer	11	-15%	Sitting	17	-15%	Acceptable
		Fall	12	-14%	Sitting	18	-18%	Acceptable
		Winter	14	-18%	Standing	21	-16%	Acceptable
		Annual	13	-13%	Standing	20	-13%	Acceptable
80	A	Spring	13		Standing	20		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	12		Sitting	18		Acceptable
		Winter	14		Standing	20		Acceptable
		Annual	12		Sitting	19		Acceptable
	B	Spring	11	-15%	Sitting	18		Acceptable
		Summer	8	-20%	Sitting	13	-13%	Acceptable
		Fall	10	-17%	Sitting	16	-11%	Acceptable
		Winter	11	-21%	Sitting	18		Acceptable
		Annual	10	-17%	Sitting	16	-16%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

<u>Effective Gust Criteria</u>

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
81	A	Spring	21		Uncomfortable	27		Acceptable
		Summer	15		Standing	20		Acceptable
		Fall	19		Walking	24		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	19		Walking	25		Acceptable
	B	Spring	17	-19%	Walking	22	-19%	Acceptable
		Summer	12	-20%	Sitting	16	-20%	Acceptable
		Fall	16	-16%	Walking	20	-17%	Acceptable
		Winter	17	-15%	Walking	21	-22%	Acceptable
		Annual	16	-16%	Walking	20	-20%	Acceptable
82	A	Spring	24		Uncomfortable	32		Unacceptable
		Summer	18		Walking	23		Acceptable
		Fall	22		Uncomfortable	29		Acceptable
		Winter	23		Uncomfortable	32		Unacceptable
		Annual	22		Uncomfortable	30		Acceptable
	B	Spring	24		Uncomfortable	32		Unacceptable
		Summer	17		Walking	23		Acceptable
		Fall	22		Uncomfortable	29		Acceptable
		Winter	23		Uncomfortable	31		Acceptable
		Annual	22		Uncomfortable	29		Acceptable
83	A	Spring	23		Uncomfortable	32		Unacceptable
		Summer	19		Walking	25		Acceptable
		Fall	21		Uncomfortable	29		Acceptable
		Winter	24		Uncomfortable	34		Unacceptable
		Annual	22		Uncomfortable	31		Acceptable
	B	Spring	22		Uncomfortable	30		Acceptable
		Summer	17	-11%	Walking	23		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	22		Uncomfortable	30	-12%	Acceptable
		Annual	21		Uncomfortable	28		Acceptable
84	A	Spring	24		Uncomfortable	31		Acceptable
		Summer	19		Walking	24		Acceptable
		Fall	22		Uncomfortable	29		Acceptable
		Winter	24		Uncomfortable	31		Acceptable
		Annual	22		Uncomfortable	29		Acceptable
	B	Spring	16	-33%	Walking	21	-32%	Acceptable
		Summer	13	-32%	Standing	17	-29%	Acceptable
		Fall	15	-32%	Standing	20	-31%	Acceptable
		Winter	16	-33%	Walking	21	-32%	Acceptable
		Annual	15	-32%	Standing	20	-31%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
85	A	Spring	14		Standing	22		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	12	-14%	Sitting	20		Acceptable
		Summer	11		Sitting	18		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	13	-13%	Standing	21		Acceptable
		Annual	12	-14%	Sitting	20		Acceptable
86	A	Spring	25		Uncomfortable	35		Unacceptable
		Summer	19		Walking	27		Acceptable
		Fall	23		Uncomfortable	32		Unacceptable
		Winter	28		Dangerous	38		Unacceptable
		Annual	25		Uncomfortable	34		Unacceptable
	B	Spring	19	-24%	Walking	28	-20%	Acceptable
		Summer	15	-21%	Standing	22	-19%	Acceptable
		Fall	17	-26%	Walking	25	-22%	Acceptable
		Winter	20	-29%	Uncomfortable	30	-21%	Acceptable
		Annual	18	-28%	Walking	27	-21%	Acceptable
87	A	Spring	17		Walking	26		Acceptable
		Summer	13		Standing	20		Acceptable
		Fall	16		Walking	24		Acceptable
		Winter	18		Walking	28		Acceptable
		Annual	16		Walking	25		Acceptable
	B	Spring	15	-12%	Standing	23	-12%	Acceptable
		Summer	11	-15%	Sitting	18		Acceptable
		Fall	14	-12%	Standing	21	-12%	Acceptable
		Winter	14	-22%	Standing	23	-18%	Acceptable
		Annual	14	-12%	Standing	22	-12%	Acceptable
88	A	Spring	28		Dangerous	37		Unacceptable
		Summer	23		Uncomfortable	30		Acceptable
		Fall	26		Uncomfortable	34		Unacceptable
		Winter	28		Dangerous	38		Unacceptable
		Annual	27		Uncomfortable	35		Unacceptable
	B	Spring	27		Uncomfortable	36		Unacceptable
		Summer	21		Uncomfortable	28		Acceptable
		Fall	25		Uncomfortable	33		Unacceptable
		Winter	26		Uncomfortable	35		Unacceptable
		Annual	25		Uncomfortable	33		Unacceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
89	A	Spring	24		Uncomfortable	31		Acceptable
		Summer	18		Walking	24		Acceptable
		Fall	21		Uncomfortable	29		Acceptable
		Winter	25		Uncomfortable	33		Unacceptable
		Annual	23		Uncomfortable	30		Acceptable
	B	Spring	19	-21%	Walking	26	-16%	Acceptable
		Summer	14	-22%	Standing	19	-21%	Acceptable
		Fall	18	-14%	Walking	24	-17%	Acceptable
		Winter	19	-24%	Walking	26	-21%	Acceptable
		Annual	18	-22%	Walking	24	-20%	Acceptable
90	A	Spring	20		Uncomfortable	26		Acceptable
		Summer	15		Standing	20		Acceptable
		Fall	18		Walking	24		Acceptable
		Winter	22		Uncomfortable	29		Acceptable
		Annual	19		Walking	26		Acceptable
	B	Spring	14	-30%	Standing	20	-23%	Acceptable
		Summer	10	-33%	Sitting	15	-25%	Acceptable
		Fall	13	-28%	Standing	19	-21%	Acceptable
		Winter	14	-36%	Standing	21	-28%	Acceptable
		Annual	13	-32%	Standing	19	-27%	Acceptable
91	A	Spring	20		Uncomfortable	28		Acceptable
		Summer	16		Walking	24		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	22		Uncomfortable	30		Acceptable
		Annual	20		Uncomfortable	28		Acceptable
	B	Spring	14	-30%	Standing	20	-29%	Acceptable
		Summer	11	-31%	Sitting	16	-33%	Acceptable
		Fall	13	-32%	Standing	19	-27%	Acceptable
		Winter	15	-32%	Standing	22	-27%	Acceptable
		Annual	13	-35%	Standing	20	-29%	Acceptable
92	A	Spring	21		Uncomfortable	29		Acceptable
		Summer	17		Walking	23		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	23		Uncomfortable	31		Acceptable
		Annual	21		Uncomfortable	29		Acceptable
	B	Spring	15	-29%	Standing	21	-28%	Acceptable
		Summer	13	-24%	Standing	17	-26%	Acceptable
		Fall	14	-30%	Standing	19	-30%	Acceptable
		Winter	16	-30%	Walking	22	-29%	Acceptable
		Annual	14	-33%	Standing	20	-31%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
93	A	Spring	15		Standing	23		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	14		Standing	23		Acceptable
	B	Spring	10	-33%	Sitting	15	-35%	Acceptable
		Summer	8	-27%	Sitting	12	-29%	Acceptable
		Fall	9	-36%	Sitting	14	-33%	Acceptable
		Winter	10	-38%	Sitting	16	-36%	Acceptable
		Annual	10	-29%	Sitting	14	-39%	Acceptable
94	A	Spring	22		Uncomfortable	30		Acceptable
		Summer	17		Walking	24		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	24		Uncomfortable	33		Unacceptable
		Annual	21		Uncomfortable	30		Acceptable
	B	Spring	11	-50%	Sitting	17	-43%	Acceptable
		Summer	9	-47%	Sitting	14	-42%	Acceptable
		Fall	11	-45%	Sitting	16	-41%	Acceptable
		Winter	12	-50%	Sitting	18	-45%	Acceptable
		Annual	11	-48%	Sitting	17	-43%	Acceptable
95	A	Spring	21		Uncomfortable	29		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	22		Uncomfortable	31		Acceptable
		Annual	20		Uncomfortable	28		Acceptable
	B	Spring	13	-38%	Standing	19	-34%	Acceptable
		Summer	10	-38%	Sitting	15	-32%	Acceptable
		Fall	12	-37%	Sitting	18	-31%	Acceptable
		Winter	15	-32%	Standing	21	-32%	Acceptable
		Annual	13	-35%	Standing	19	-32%	Acceptable
96	A	Spring	24		Uncomfortable	32		Unacceptable
		Summer	20		Uncomfortable	27		Acceptable
		Fall	22		Uncomfortable	30		Acceptable
		Winter	25		Uncomfortable	34		Unacceptable
		Annual	23		Uncomfortable	31		Acceptable
	B	Spring	15	-38%	Standing	21	-34%	Acceptable
		Summer	11	-45%	Sitting	16	-41%	Acceptable
		Fall	14	-36%	Standing	19	-37%	Acceptable
		Winter	16	-36%	Walking	23	-32%	Acceptable
		Annual	15	-35%	Standing	20	-35%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
97	A	Spring	11		Sitting	19		Acceptable
		Summer	8		Sitting	15		Acceptable
		Fall	10		Sitting	18		Acceptable
		Winter	12		Sitting	21		Acceptable
		Annual	11		Sitting	19		Acceptable
	B	Spring	15	+36%	Standing	20		Acceptable
		Summer	12	+50%	Sitting	16		Acceptable
		Fall	14	+40%	Standing	19		Acceptable
		Winter	16	+33%	Walking	23		Acceptable
		Annual	15	+36%	Standing	20		Acceptable
98	A	Spring	16		Walking	24		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	15		Standing	22		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	15		Standing	22		Acceptable
99	A	Spring	19		Walking	28		Acceptable
		Summer	15		Standing	22		Acceptable
		Fall	18		Walking	26		Acceptable
		Winter	21		Uncomfortable	30		Acceptable
		Annual	19		Walking	27		Acceptable
	B	Spring	21	+11%	Uncomfortable	28		Acceptable
		Summer	17	+13%	Walking	22		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	23		Uncomfortable	31		Acceptable
		Annual	21	+11%	Uncomfortable	28		Acceptable
100	A	Spring	9		Sitting	16		Acceptable
		Summer	7		Sitting	12		Acceptable
		Fall	8		Sitting	15		Acceptable
		Winter	10		Sitting	18		Acceptable
		Annual	9		Sitting	16		Acceptable
	B	Spring	22	+144%	Uncomfortable	29	+81%	Acceptable
		Summer	17	+143%	Walking	22	+83%	Acceptable
		Fall	20	+150%	Uncomfortable	26	+73%	Acceptable
		Winter	25	+150%	Uncomfortable	32	+78%	Unacceptable
		Annual	22	+144%	Uncomfortable	28	+75%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
101	A	Spring	20		Uncomfortable	28		Acceptable
		Summer	18		Walking	24		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	19		Walking	26		Acceptable
	B	Spring	16	-20%	Walking	23	-18%	Acceptable
		Summer	12	-33%	Sitting	17	-29%	Acceptable
		Fall	15	-21%	Standing	21	-19%	Acceptable
		Winter	18		Walking	25		Acceptable
		Annual	16	-16%	Walking	23	-12%	Acceptable
102	A	Spring	18		Walking	26		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	18		Walking	27		Acceptable
		Annual	17		Walking	25		Acceptable
	B	Spring	18		Walking	25		Acceptable
		Summer	14		Standing	19		Acceptable
		Fall	17		Walking	23		Acceptable
		Winter	20	+11%	Uncomfortable	28		Acceptable
		Annual	18		Walking	25		Acceptable
103	A	Spring	21		Uncomfortable	31		Acceptable
		Summer	17		Walking	24		Acceptable
		Fall	20		Uncomfortable	28		Acceptable
		Winter	24		Uncomfortable	34		Unacceptable
		Annual	21		Uncomfortable	30		Acceptable
	B	Spring	21		Uncomfortable	29		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	24		Uncomfortable	32		Unacceptable
		Annual	21		Uncomfortable	29		Acceptable
104	A	Spring	11		Sitting	18		Acceptable
		Summer	8		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11		Sitting	18		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	13	+18%	Standing	19		Acceptable
		Summer	10	+25%	Sitting	14		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	13	+18%	Standing	19		Acceptable
		Annual	12	+20%	Sitting	18	+12%	Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			**Mean Wind Speed**			**Effective Gust Wind Speed**		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
105	A	Spring	19		Walking	27		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	17		Walking	25		Acceptable
		Winter	19		Walking	27		Acceptable
		Annual	18		Walking	25		Acceptable
	B	Spring	17	-11%	Walking	24	-11%	Acceptable
		Summer	12	-14%	Sitting	17	-15%	Acceptable
		Fall	15	-12%	Standing	22	-12%	Acceptable
		Winter	17	-11%	Walking	24	-11%	Acceptable
		Annual	16	-11%	Walking	22	-12%	Acceptable
106	A	Spring	23		Uncomfortable	30		Acceptable
		Summer	17		Walking	23		Acceptable
		Fall	21		Uncomfortable	27		Acceptable
		Winter	22		Uncomfortable	30		Acceptable
		Annual	21		Uncomfortable	28		Acceptable
	B	Spring	16	-30%	Walking	22	-27%	Acceptable
		Summer	11	-35%	Sitting	15	-35%	Acceptable
		Fall	14	-33%	Standing	20	-26%	Acceptable
		Winter	15	-32%	Standing	21	-30%	Acceptable
		Annual	14	-33%	Standing	20	-29%	Acceptable
107	A	Spring	12		Sitting	18		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	10	-17%	Sitting	16	-11%	Acceptable
		Summer	8	-20%	Sitting	12	-20%	Acceptable
		Fall	9	-18%	Sitting	15	-12%	Acceptable
		Winter	10	-17%	Sitting	16	-16%	Acceptable
		Annual	9	-18%	Sitting	15	-17%	Acceptable
108	A	Spring	12		Sitting	20		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	12		Sitting	20		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	14	+17%	Standing	21		Acceptable
		Summer	10	+11%	Sitting	15		Acceptable
		Fall	13	+18%	Standing	20	+11%	Acceptable
		Winter	14	+17%	Standing	21		Acceptable
		Annual	13	+18%	Standing	20	+11%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
109	A	Spring	17		Walking	25		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	16		Walking	24		Acceptable
		Winter	17		Walking	26		Acceptable
		Annual	16		Walking	24		Acceptable
	B	Spring	12	-29%	Sitting	19	-24%	Acceptable
		Summer	10	-33%	Sitting	15	-29%	Acceptable
		Fall	11	-31%	Sitting	16	-33%	Acceptable
		Winter	13	-24%	Standing	19	-27%	Acceptable
		Annual	12	-25%	Sitting	18	-25%	Acceptable
110	A	Spring	16		Walking	24		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	17		Walking	26		Acceptable
		Annual	16		Walking	24		Acceptable
	B	Spring	8	-50%	Sitting	13	-46%	Acceptable
		Summer	6	-54%	Sitting	10	-47%	Acceptable
		Fall	8	-47%	Sitting	12	-45%	Acceptable
		Winter	8	-53%	Sitting	13	-50%	Acceptable
		Annual	8	-50%	Sitting	12	-50%	Acceptable
111	A	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	15		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	8	-27%	Sitting	14	-22%	Acceptable
		Summer	7	-22%	Sitting	11	-27%	Acceptable
		Fall	8	-20%	Sitting	13	-19%	Acceptable
		Winter	9	-25%	Sitting	15	-21%	Acceptable
		Annual	8	-27%	Sitting	14	-18%	Acceptable
112	A	Spring	14		Standing	22		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	24		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	11	-21%	Sitting	18	-18%	Acceptable
		Summer	9	-25%	Sitting	13	-28%	Acceptable
		Fall	11	-15%	Sitting	17	-19%	Acceptable
		Winter	12	-20%	Sitting	19	-21%	Acceptable
		Annual	11	-21%	Sitting	17	-23%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
113	A	Spring	12		Sitting	20		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12		Sitting	19		Acceptable
	B	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	13	-13%	Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17	-11%	Acceptable
114	A	Spring	23		Uncomfortable	30		Acceptable
		Summer	17		Walking	23		Acceptable
		Fall	21		Uncomfortable	27		Acceptable
		Winter	23		Uncomfortable	30		Acceptable
		Annual	21		Uncomfortable	28		Acceptable
	B	Spring	14	-39%	Standing	20	-33%	Acceptable
		Summer	11	-35%	Sitting	16	-30%	Acceptable
		Fall	13	-38%	Standing	18	-33%	Acceptable
		Winter	14	-39%	Standing	21	-30%	Acceptable
		Annual	13	-38%	Standing	19	-32%	Acceptable
115	A	Spring	16		Walking	24		Acceptable
		Summer	13		Standing	20		Acceptable
		Fall	14		Standing	22		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	18	+12%	Walking	24		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	16	+14%	Walking	22		Acceptable
		Winter	18	+12%	Walking	24		Acceptable
		Annual	16		Walking	22		Acceptable
116	A	Spring	14		Standing	23		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	24		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	17	+21%	Walking	23		Acceptable
		Summer	13	+18%	Standing	18		Acceptable
		Fall	15	+15%	Standing	20		Acceptable
		Winter	17	+13%	Walking	23		Acceptable
		Annual	16	+14%	Walking	21		Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
117	A	Spring	13		Standing	21		Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	12		Sitting	20		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	13		Standing	20		Acceptable
	B	Spring	10	-23%	Sitting	16	-24%	Acceptable
		Summer	9		Sitting	13	-19%	Acceptable
		Fall	10	-17%	Sitting	15	-25%	Acceptable
		Winter	11	-21%	Sitting	17	-23%	Acceptable
		Annual	10	-23%	Sitting	16	-20%	Acceptable
118	A	Spring	12		Sitting	19		Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	8	-33%	Sitting	14	-26%	Acceptable
		Summer	7	-30%	Sitting	11	-31%	Acceptable
		Fall	8	-27%	Sitting	13	-28%	Acceptable
		Winter	9	-25%	Sitting	14	-26%	Acceptable
		Annual	8	-27%	Sitting	13	-28%	Acceptable
119	A	Spring	16		Walking	24		Acceptable
		Summer	14		Standing	21		Acceptable
		Fall	15		Standing	23		Acceptable
		Winter	16		Walking	24		Acceptable
		Annual	16		Walking	23		Acceptable
	B	Spring	12	-25%	Sitting	18	-25%	Acceptable
		Summer	9	-36%	Sitting	14	-33%	Acceptable
		Fall	11	-27%	Sitting	17	-26%	Acceptable
		Winter	13	-19%	Standing	20	-17%	Acceptable
		Annual	12	-25%	Sitting	18	-22%	Acceptable
120	A	Spring	13		Standing	20		Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12		Sitting	19		Acceptable
	B	Spring	13		Standing	18		Acceptable
		Summer	10		Sitting	14	-12%	Acceptable
		Fall	12		Sitting	16	-16%	Acceptable
		Winter	13		Standing	18	-14%	Acceptable
		Annual	12		Sitting	17	-11%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

CONSULTING ENGINEERS & SCIENTISTS

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
121	A	Spring	15		Standing	23		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	14		Standing	23		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	12	-20%	Sitting	19	-17%	Acceptable
		Summer	9	-25%	Sitting	15	-21%	Acceptable
		Fall	11	-15%	Sitting	18	-14%	Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12	-14%	Sitting	19	-14%	Acceptable
122	A	Spring	14		Standing	22		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	15		Standing	22		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	17		Walking	24		Acceptable
		Annual	15		Standing	22		Acceptable
123	A	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	17	+42%	Walking	24	+33%	Acceptable
		Summer	12	+33%	Sitting	18	+29%	Acceptable
		Fall	16	+45%	Walking	22	+29%	Acceptable
		Winter	18	+50%	Walking	25	+32%	Acceptable
		Annual	16	+45%	Walking	23	+28%	Acceptable
124	A	Spring	16		Walking	23		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	16		Walking	24		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	12	-25%	Sitting	19	-17%	Acceptable
		Summer	8	-27%	Sitting	14	-18%	Acceptable
		Fall	11	-27%	Sitting	17	-19%	Acceptable
		Winter	12	-25%	Sitting	19	-21%	Acceptable
		Annual	11	-27%	Sitting	18	-18%	Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
125	A	Spring	21		Uncomfortable	29		Acceptable
		Summer	16		Walking	23		Acceptable
		Fall	19		Walking	27		Acceptable
		Winter	24		Uncomfortable	33		Unacceptable
		Annual	21		Uncomfortable	29		Acceptable
	B	Spring	21		Uncomfortable	28		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	19		Walking	26		Acceptable
		Winter	23		Uncomfortable	31		Acceptable
		Annual	20		Uncomfortable	28		Acceptable
126	A	Spring	17		Walking	25		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	16		Walking	24		Acceptable
		Winter	18		Walking	28		Acceptable
		Annual	17		Walking	25		Acceptable
	B	Spring	18		Walking	26		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	16		Walking	24		Acceptable
		Winter	18		Walking	27		Acceptable
		Annual	17		Walking	25		Acceptable
127	A	Spring	16		Walking	23		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	17		Walking	23		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	16		Walking	23		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	17		Walking	24		Acceptable
		Annual	15		Standing	22		Acceptable
128	A	Spring	15		Standing	24		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	14		Standing	22		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	15		Standing	23		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
129	A	Spring	25		Uncomfortable	32		Unacceptable
		Summer	18		Walking	24		Acceptable
		Fall	23		Uncomfortable	29		Acceptable
		Winter	25		Uncomfortable	32		Unacceptable
		Annual	23		Uncomfortable	30		Acceptable
	B	Spring	23		Uncomfortable	30		Acceptable
		Summer	17		Walking	21	-12%	Acceptable
		Fall	21		Uncomfortable	27		Acceptable
		Winter	23		Uncomfortable	30		Acceptable
		Annual	21		Uncomfortable	28		Acceptable
130	A	Spring	19		Walking	26		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	18		Walking	26		Acceptable
		Annual	17		Walking	24		Acceptable
	B	Spring	19		Walking	26		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	18		Walking	25		Acceptable
		Annual	17		Walking	24		Acceptable
131	A	Spring	19		Walking	26		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	19		Walking	26		Acceptable
		Annual	18		Walking	24		Acceptable
	B	Spring	19		Walking	26		Acceptable
		Summer	14		Standing	19		Acceptable
		Fall	17		Walking	23		Acceptable
		Winter	19		Walking	26		Acceptable
		Annual	17		Walking	24		Acceptable
132	A	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	17		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			**Mean Wind Speed**			**Effective Gust Wind Speed**		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
133	A	Spring	23		Uncomfortable	29		Acceptable
		Summer	17		Walking	22		Acceptable
		Fall	20		Uncomfortable	25		Acceptable
		Winter	22		Uncomfortable	28		Acceptable
		Annual	21		Uncomfortable	26		Acceptable
	B	Spring	23		Uncomfortable	30		Acceptable
		Summer	17		Walking	22		Acceptable
		Fall	21		Uncomfortable	27		Acceptable
		Winter	22		Uncomfortable	29		Acceptable
		Annual	21		Uncomfortable	27		Acceptable
134	A	Spring	18		Walking	24		Acceptable
		Summer	14		Standing	19		Acceptable
		Fall	16		Walking	22		Acceptable
		Winter	18		Walking	24		Acceptable
		Annual	16		Walking	23		Acceptable
	B	Spring	17		Walking	23		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	17		Walking	24		Acceptable
		Annual	16		Walking	22		Acceptable
135	A	Spring	21		Uncomfortable	26		Acceptable
		Summer	16		Walking	21		Acceptable
		Fall	18		Walking	24		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	19		Walking	25		Acceptable
	B	Spring	21		Uncomfortable	27		Acceptable
		Summer	16		Walking	21		Acceptable
		Fall	18		Walking	24		Acceptable
		Winter	21		Uncomfortable	27		Acceptable
		Annual	19		Walking	25		Acceptable
136	A	Spring	17		Walking	24		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	16		Walking	22		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	16		Walking	23		Acceptable
	B	Spring	18		Walking	25		Acceptable
		Summer	15		Standing	20		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	19	+12%	Walking	26		Acceptable
		Annual	17		Walking	24		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
137	A	Spring	19		Walking	27		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	18		Walking	25		Acceptable
		Winter	20		Uncomfortable	28		Acceptable
		Annual	18		Walking	26		Acceptable
	B	Spring	16	-16%	Walking	24	-11%	Acceptable
		Summer	13	-19%	Standing	19	-14%	Acceptable
		Fall	15	-17%	Standing	22	-12%	Acceptable
		Winter	17	-15%	Walking	25	-11%	Acceptable
		Annual	16	-11%	Walking	23	-12%	Acceptable
138	A	Spring	25		Uncomfortable	32		Unacceptable
		Summer	19		Walking	25		Acceptable
		Fall	23		Uncomfortable	29		Acceptable
		Winter	26		Uncomfortable	33		Unacceptable
		Annual	24		Uncomfortable	30		Acceptable
	B	Spring	27		Uncomfortable	33		Unacceptable
		Summer	21	+11%	Uncomfortable	26		Acceptable
		Fall	23		Uncomfortable	28		Acceptable
		Winter	27		Uncomfortable	33		Unacceptable
		Annual	25		Uncomfortable	30		Acceptable
139	A	Spring	23		Uncomfortable	30		Acceptable
		Summer	18		Walking	23		Acceptable
		Fall	20		Uncomfortable	27		Acceptable
		Winter	23		Uncomfortable	31		Acceptable
		Annual	22		Uncomfortable	28		Acceptable
	B	Spring	21		Uncomfortable	27		Acceptable
		Summer	16	-11%	Walking	21		Acceptable
		Fall	18		Walking	24	-11%	Acceptable
		Winter	21		Uncomfortable	27	-13%	Acceptable
		Annual	19	-14%	Walking	25	-11%	Acceptable
140	A	Spring	17		Walking	25		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	18		Walking	27		Acceptable
		Annual	17		Walking	24		Acceptable
	B	Spring	23	+35%	Uncomfortable	31	+24%	Acceptable
		Summer	19	+36%	Walking	26	+30%	Acceptable
		Fall	22	+47%	Uncomfortable	29	+32%	Acceptable
		Winter	25	+39%	Uncomfortable	34	+26%	Unacceptable
		Annual	23	+35%	Uncomfortable	31	+29%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
141	A	Spring	16		Walking	24		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	18		Walking	27		Acceptable
		Annual	16		Walking	24		Acceptable
	B	Spring	19	+19%	Walking	27	+12%	Acceptable
		Summer	16	+23%	Walking	22	+16%	Acceptable
		Fall	18	+20%	Walking	25	+14%	Acceptable
		Winter	20	+11%	Uncomfortable	28		Acceptable
		Annual	18	+12%	Walking	26		Acceptable
142	A	Spring	24		Uncomfortable	30		Acceptable
		Summer	18		Walking	23		Acceptable
		Fall	21		Uncomfortable	27		Acceptable
		Winter	24		Uncomfortable	30		Acceptable
		Annual	22		Uncomfortable	28		Acceptable
	B	Spring	17	-29%	Walking	23	-23%	Acceptable
		Summer	13	-28%	Standing	17	-26%	Acceptable
		Fall	16	-24%	Walking	20	-26%	Acceptable
		Winter	17	-29%	Walking	23	-23%	Acceptable
		Annual	16	-27%	Walking	21	-25%	Acceptable
143	A	Spring	13		Standing	22		Acceptable
		Summer	11		Sitting	19		Acceptable
		Fall	12		Sitting	21		Acceptable
		Winter	14		Standing	23		Acceptable
		Annual	13		Standing	21		Acceptable
	B	Spring	23	+77%	Uncomfortable	29	+32%	Acceptable
		Summer	19	+73%	Walking	24	+26%	Acceptable
		Fall	19	+58%	Walking	25	+19%	Acceptable
		Winter	22	+57%	Uncomfortable	29	+26%	Acceptable
		Annual	21	+62%	Uncomfortable	27	+29%	Acceptable
144	A	Spring	19		Walking	26		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	18		Walking	24		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	19		Walking	25		Acceptable
	B	Spring	18		Walking	25		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	18		Walking	25		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
145	A	Spring	19		Walking	26		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	20		Uncomfortable	27		Acceptable
		Annual	18		Walking	25		Acceptable
	B	Spring	15	-21%	Standing	22	-15%	Acceptable
		Summer	11	-21%	Sitting	16	-20%	Acceptable
		Fall	14	-18%	Standing	20	-17%	Acceptable
		Winter	15	-25%	Standing	22	-19%	Acceptable
		Annual	14	-22%	Standing	20	-20%	Acceptable
146	A	Spring	14		Standing	21		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	10	-29%	Sitting	16	-24%	Acceptable
		Summer	8	-27%	Sitting	13	-19%	Acceptable
		Fall	10	-23%	Sitting	15	-25%	Acceptable
		Winter	11	-27%	Sitting	17	-26%	Acceptable
		Annual	10	-29%	Sitting	15	-29%	Acceptable
147	A	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	16		Acceptable
		Fall	10		Sitting	17		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	18		Acceptable
	B	Spring	16	+45%	Walking	23	+28%	Acceptable
		Summer	13	+44%	Standing	20	+25%	Acceptable
		Fall	15	+50%	Standing	22	+29%	Acceptable
		Winter	17	+42%	Walking	25	+32%	Acceptable
		Annual	16	+45%	Walking	23	+28%	Acceptable
148	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	15		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	10		Sitting	14	-12%	Acceptable
		Summer	7	-12%	Sitting	11		Acceptable
		Fall	9		Sitting	13	-13%	Acceptable
		Winter	10		Sitting	15	-12%	Acceptable
		Annual	9		Sitting	13	-19%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

<u>Effective Gust Criteria</u>

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
149	A	Spring	18		Walking	26		Acceptable
		Summer	15		Standing	22		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	20		Uncomfortable	28		Acceptable
		Annual	18		Walking	26		Acceptable
	B	Spring	19		Walking	25		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	21		Uncomfortable	27		Acceptable
		Annual	19		Walking	25		Acceptable
150	A	Spring	19		Walking	27		Acceptable
		Summer	16		Walking	22		Acceptable
		Fall	18		Walking	25		Acceptable
		Winter	21		Uncomfortable	29		Acceptable
		Annual	19		Walking	26		Acceptable
	B	Spring	12	-37%	Sitting	18	-33%	Acceptable
		Summer	10	-38%	Sitting	16	-27%	Acceptable
		Fall	11	-39%	Sitting	17	-32%	Acceptable
		Winter	12	-43%	Sitting	19	-34%	Acceptable
		Annual	12	-37%	Sitting	18	-31%	Acceptable
151	A	Spring	19		Walking	28		Acceptable
		Summer	16		Walking	23		Acceptable
		Fall	18		Walking	26		Acceptable
		Winter	20		Uncomfortable	29		Acceptable
		Annual	18		Walking	27		Acceptable
	B	Spring	14	-26%	Standing	22	-21%	Acceptable
		Summer	11	-31%	Sitting	18	-22%	Acceptable
		Fall	13	-28%	Standing	20	-23%	Acceptable
		Winter	16	-20%	Walking	24	-17%	Acceptable
		Annual	14	-22%	Standing	22	-19%	Acceptable
152	A	Spring	17		Walking	25		Acceptable
		Summer	14		Standing	21		Acceptable
		Fall	16		Walking	23		Acceptable
		Winter	18		Walking	27		Acceptable
		Annual	17		Walking	25		Acceptable
	B	Spring	22	+29%	Uncomfortable	28	+12%	Acceptable
		Summer	17	+21%	Walking	21		Acceptable
		Fall	20	+25%	Uncomfortable	25		Acceptable
		Winter	23	+28%	Uncomfortable	29		Acceptable
		Annual	21	+24%	Uncomfortable	27		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
153	A	Spring	25		Uncomfortable	32		Unacceptable
		Summer	19		Walking	24		Acceptable
		Fall	22		Uncomfortable	28		Acceptable
		Winter	25		Uncomfortable	32		Unacceptable
		Annual	23		Uncomfortable	30		Acceptable
	B	Spring	27		Uncomfortable	34		Unacceptable
		Summer	20		Uncomfortable	25		Acceptable
		Fall	23		Uncomfortable	30		Acceptable
		Winter	26		Uncomfortable	34		Unacceptable
		Annual	24		Uncomfortable	31		Acceptable
154	A	Spring	14		Standing	22		Acceptable
		Summer	10		Sitting	16		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	14		Standing	22		Acceptable
		Annual	13		Standing	21		Acceptable
	B	Spring	23	+64%	Uncomfortable	31	+41%	Acceptable
		Summer	18	+80%	Walking	23	+44%	Acceptable
		Fall	20	+54%	Uncomfortable	28	+33%	Acceptable
		Winter	23	+64%	Uncomfortable	32	+45%	Unacceptable
		Annual	21	+62%	Uncomfortable	29	+38%	Acceptable
155	A	Spring	14		Standing	22		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	13		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	17	+21%	Walking	24		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	16	+23%	Walking	22		Acceptable
		Winter	18	+20%	Walking	25		Acceptable
		Annual	16	+14%	Walking	23		Acceptable
156	A	Spring	21		Uncomfortable	31		Acceptable
		Summer	16		Walking	23		Acceptable
		Fall	19		Walking	28		Acceptable
		Winter	23		Uncomfortable	35		Unacceptable
		Annual	20		Uncomfortable	31		Acceptable
	B	Spring	19		Walking	27	-13%	Acceptable
		Summer	15		Standing	20	-13%	Acceptable
		Fall	16	-16%	Walking	23	-18%	Acceptable
		Winter	19	-17%	Walking	28	-20%	Acceptable
		Annual	18		Walking	25	-19%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
157	A	Spring	23		Uncomfortable	31		Acceptable
		Summer	18		Walking	25		Acceptable
		Fall	21		Uncomfortable	28		Acceptable
		Winter	22		Uncomfortable	30		Acceptable
		Annual	21		Uncomfortable	29		Acceptable
	B	Spring	18	-22%	Walking	24	-23%	Acceptable
		Summer	13	-28%	Standing	17	-32%	Acceptable
		Fall	16	-24%	Walking	22	-21%	Acceptable
		Winter	18	-18%	Walking	24	-20%	Acceptable
		Annual	16	-24%	Walking	22	-24%	Acceptable
158	A	Spring	19		Walking	28		Acceptable
		Summer	14		Standing	21		Acceptable
		Fall	17		Walking	25		Acceptable
		Winter	19		Walking	29		Acceptable
		Annual	18		Walking	27		Acceptable
	B	Spring	19		Walking	25	-11%	Acceptable
		Summer	14		Standing	19		Acceptable
		Fall	17		Walking	23		Acceptable
		Winter	21	+11%	Uncomfortable	27		Acceptable
		Annual	18		Walking	25		Acceptable
159	A	Spring	15		Standing	25		Acceptable
		Summer	12		Sitting	19		Acceptable
		Fall	14		Standing	23		Acceptable
		Winter	17		Walking	29		Acceptable
		Annual	15		Standing	25		Acceptable
	B	Spring	10	-33%	Sitting	18	-28%	Acceptable
		Summer	8	-33%	Sitting	13	-32%	Acceptable
		Fall	9	-36%	Sitting	16	-30%	Acceptable
		Winter	11	-35%	Sitting	20	-31%	Acceptable
		Annual	10	-33%	Sitting	17	-32%	Acceptable
160	A	Spring	14		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	10	-29%	Sitting	16	-24%	Acceptable
		Summer	8	-27%	Sitting	12	-29%	Acceptable
		Fall	9	-31%	Sitting	14	-26%	Acceptable
		Winter	11	-31%	Sitting	17	-26%	Acceptable
		Annual	10	-29%	Sitting	15	-29%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
161	A	Spring	14		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	10	-29%	Sitting	16	-24%	Acceptable
		Summer	8	-27%	Sitting	12	-29%	Acceptable
		Fall	9	-31%	Sitting	14	-26%	Acceptable
		Winter	11	-31%	Sitting	17	-26%	Acceptable
		Annual	10	-29%	Sitting	15	-29%	Acceptable
162	A	Spring	15		Standing	23		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	14		Standing	22		Acceptable
	B	Spring	12	-20%	Sitting	20	-13%	Acceptable
		Summer	9	-25%	Sitting	15	-17%	Acceptable
		Fall	11	-21%	Sitting	18	-14%	Acceptable
		Winter	13	-19%	Standing	21	-16%	Acceptable
		Annual	12	-14%	Sitting	19	-14%	Acceptable
163	A	Spring	19		Walking	27		Acceptable
		Summer	14		Standing	21		Acceptable
		Fall	17		Walking	25		Acceptable
		Winter	19		Walking	28		Acceptable
		Annual	17		Walking	26		Acceptable
	B	Spring	19		Walking	27		Acceptable
		Summer	14		Standing	21		Acceptable
		Fall	18		Walking	25		Acceptable
		Winter	21	+11%	Uncomfortable	31	+11%	Acceptable
		Annual	19	+12%	Walking	27		Acceptable
164	A	Spring	12		Sitting	19		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12		Sitting	19		Acceptable
	B	Spring	13		Standing	20		Acceptable
		Summer	9		Sitting	15		Acceptable
		Fall	11		Sitting	18		Acceptable
		Winter	13		Standing	20		Acceptable
		Annual	12		Sitting	19		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
165	A	Spring	15		Standing	22		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	13	-13%	Standing	20		Acceptable
		Summer	10	-23%	Sitting	15	-17%	Acceptable
		Fall	12	-14%	Sitting	18	-10%	Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	12	-14%	Sitting	19	-10%	Acceptable
166	A	Spring	12		Sitting	18		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	11		Sitting	17		Acceptable
	B	Spring	12		Sitting	19		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	13	+18%	Standing	21	+24%	Acceptable
		Annual	12		Sitting	19	+12%	Acceptable
167	A	Spring	8		Sitting	14		Acceptable
		Summer	7		Sitting	12		Acceptable
		Fall	8		Sitting	13		Acceptable
		Winter	8		Sitting	13		Acceptable
		Annual	8		Sitting	13		Acceptable
	B	Spring	19	+138%	Walking	26	+86%	Acceptable
		Summer	14	+100%	Standing	20	+67%	Acceptable
		Fall	17	+112%	Walking	24	+85%	Acceptable
		Winter	21	+162%	Uncomfortable	29	+123%	Acceptable
		Annual	19	+138%	Walking	26	+100%	Acceptable
168	A	Spring	15		Standing	21		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	15		Standing	21		Acceptable
	B	Spring	11	-27%	Sitting	18	-14%	Acceptable
		Summer	9	-18%	Sitting	13	-19%	Acceptable
		Fall	10	-23%	Sitting	17	-11%	Acceptable
		Winter	12	-25%	Sitting	19	-17%	Acceptable
		Annual	11	-27%	Sitting	18	-14%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
169	A	Spring	11		Sitting	17		Acceptable
		Summer	10		Sitting	15		Acceptable
		Fall	10		Sitting	15		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	7	-36%	Sitting	12	-29%	Acceptable
		Summer	6	-40%	Sitting	9	-40%	Acceptable
		Fall	7	-30%	Sitting	11	-27%	Acceptable
		Winter	8	-20%	Sitting	13	-19%	Acceptable
		Annual	7	-30%	Sitting	12	-25%	Acceptable
170	A	Spring	14		Standing	22		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	16		Walking	24		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	12	-14%	Sitting	19	-14%	Acceptable
		Summer	9	-18%	Sitting	15	-12%	Acceptable
		Fall	11	-15%	Sitting	17	-15%	Acceptable
		Winter	14	-12%	Standing	21	-12%	Acceptable
		Annual	12	-14%	Sitting	19		Acceptable
171	A	Spring	10		Sitting	16		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	15		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	10		Sitting	16		Acceptable
	B	Spring	11		Sitting	16		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	10	+11%	Sitting	15		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	16		Acceptable
172	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	11		Sitting	17		Acceptable
		Annual	11		Sitting	16		Acceptable
	B	Spring	10		Sitting	15	-12%	Acceptable
		Summer	8	-11%	Sitting	12	-14%	Acceptable
		Fall	9	-18%	Sitting	15		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	9	-18%	Sitting	15		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
173	A	Spring	10		Sitting	15		Acceptable
		Summer	7		Sitting	12		Acceptable
		Fall	9		Sitting	14		Acceptable
		Winter	10		Sitting	16		Acceptable
		Annual	9		Sitting	15		Acceptable
	B	Spring	9		Sitting	14		Acceptable
		Summer	7		Sitting	11		Acceptable
		Fall	8	-11%	Sitting	13		Acceptable
		Winter	9		Sitting	15		Acceptable
		Annual	9		Sitting	14		Acceptable
174	A	Spring	12		Sitting	19		Acceptable
		Summer	9		Sitting	15		Acceptable
		Fall	11		Sitting	17		Acceptable
		Winter	13		Standing	20		Acceptable
		Annual	12		Sitting	18		Acceptable
	B	Spring	11		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17		Acceptable
175	A	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	11		Sitting	16		Acceptable
	B	Spring	9	-18%	Sitting	15	-12%	Acceptable
		Summer	7	-22%	Sitting	12		Acceptable
		Fall	9		Sitting	14	-12%	Acceptable
		Winter	10	-17%	Sitting	16	-11%	Acceptable
		Annual	9	-18%	Sitting	15		Acceptable
176	A	Spring	12		Sitting	16		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	11		Sitting	15		Acceptable
		Winter	13		Standing	18		Acceptable
		Annual	12		Sitting	16		Acceptable
	B	Spring	12		Sitting	16		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	11		Sitting	15		Acceptable
		Winter	13		Standing	18		Acceptable
		Annual	11		Sitting	16		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations	Mean Wind Speed Criteria		Effective Gust Criteria	
A – No Build	Comfortable for Sitting:	≤ 12 mph	Acceptable:	≤ 31 mph
B – Full Build	Comfortable for Standing:	> 12 and ≤ 15 mph	Unacceptable:	> 31 mph
	Comfortable for Walking:	> 15 and ≤ 19 mph		
	Uncomfortable for Walking:	> 19 and ≤ 27 mph		
	Dangerous Conditions:	> 27 mph		

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
177	A	Spring	14		Standing	19		Acceptable
		Summer	11		Sitting	16		Acceptable
		Fall	13		Standing	18		Acceptable
		Winter	14		Standing	21		Acceptable
		Annual	13		Standing	19		Acceptable
	B	Spring	15		Standing	22	+16%	Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	20	+11%	Acceptable
		Winter	16	+14%	Walking	24	+14%	Acceptable
		Annual	15	+15%	Standing	22	+16%	Acceptable
178	A	Spring	8		Sitting	13		Acceptable
		Summer	7		Sitting	11		Acceptable
		Fall	8		Sitting	12		Acceptable
		Winter	8		Sitting	13		Acceptable
		Annual	8		Sitting	12		Acceptable
	B	Spring	13	+62%	Standing	20	+54%	Acceptable
		Summer	10	+43%	Sitting	15	+36%	Acceptable
		Fall	12	+50%	Sitting	18	+50%	Acceptable
		Winter	14	+75%	Standing	21	+62%	Acceptable
		Annual	13	+62%	Standing	19	+58%	Acceptable
179	A	Spring	11		Sitting	16		Acceptable
		Summer	9		Sitting	13		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	12		Sitting	17		Acceptable
		Annual	11		Sitting	16		Acceptable
	B	Spring	10		Sitting	15		Acceptable
		Summer	8	-11%	Sitting	13		Acceptable
		Fall	10		Sitting	15		Acceptable
		Winter	10	-17%	Sitting	16		Acceptable
		Annual	10		Sitting	15		Acceptable
180	A	Spring	9		Sitting	14		Acceptable
		Summer	8		Sitting	12		Acceptable
		Fall	9		Sitting	14		Acceptable
		Winter	10		Sitting	15		Acceptable
		Annual	9		Sitting	14		Acceptable
	B	Spring	10	+11%	Sitting	16	+14%	Acceptable
		Summer	9	+12%	Sitting	13		Acceptable
		Fall	10	+11%	Sitting	15		Acceptable
		Winter	11		Sitting	17	+13%	Acceptable
		Annual	10	+11%	Sitting	15		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting:	≤ 12 mph
Comfortable for Standing:	> 12 and ≤ 15 mph
Comfortable for Walking:	> 15 and ≤ 19 mph
Uncomfortable for Walking:	> 19 and ≤ 27 mph
Dangerous Conditions:	> 27 mph

Effective Gust Criteria

Acceptable:	≤ 31 mph
Unacceptable:	> 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
181	A	Spring	12		Sitting	18		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	13		Standing	19		Acceptable
		Annual	12		Sitting	17		Acceptable
	B	Spring	11		Sitting	17		Acceptable
		Summer	9		Sitting	14		Acceptable
		Fall	10		Sitting	16		Acceptable
		Winter	11	-15%	Sitting	17	-11%	Acceptable
		Annual	11		Sitting	16		Acceptable
182	A	Spring	13		Standing	18		Acceptable
		Summer	11		Sitting	15		Acceptable
		Fall	12		Sitting	17		Acceptable
		Winter	12		Sitting	18		Acceptable
		Annual	12		Sitting	17		Acceptable
	B	Spring	12		Sitting	17		Acceptable
		Summer	9	-18%	Sitting	13	-13%	Acceptable
		Fall	11		Sitting	16		Acceptable
		Winter	13		Standing	18		Acceptable
		Annual	12		Sitting	17		Acceptable
183	A	Spring	15		Standing	23		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	14		Standing	20	-13%	Acceptable
		Summer	10	-17%	Sitting	15	-12%	Acceptable
		Fall	12	-20%	Sitting	19		Acceptable
		Winter	14	-12%	Standing	20	-13%	Acceptable
		Annual	13	-13%	Standing	19	-14%	Acceptable
184	A	Spring	22		Uncomfortable	29		Acceptable
		Summer	19		Walking	25		Acceptable
		Fall	21		Uncomfortable	28		Acceptable
		Winter	22		Uncomfortable	28		Acceptable
		Annual	21		Uncomfortable	28		Acceptable
	B	Spring	18	-18%	Walking	25	-14%	Acceptable
		Summer	15	-21%	Standing	21	-16%	Acceptable
		Fall	16	-24%	Walking	23	-18%	Acceptable
		Winter	18	-18%	Walking	25	-11%	Acceptable
		Annual	17	-19%	Walking	24	-14%	Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
185	A	Spring	20		Uncomfortable	29		Acceptable
		Summer	15		Standing	22		Acceptable
		Fall	19		Walking	27		Acceptable
		Winter	20		Uncomfortable	29		Acceptable
		Annual	19		Walking	27		Acceptable
	B	Spring	18		Walking	26	-10%	Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	17	-11%	Walking	25		Acceptable
		Winter	19		Walking	27		Acceptable
		Annual	18		Walking	25		Acceptable
186	A	Spring	13		Standing	21		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	12		Sitting	19		Acceptable
		Winter	13		Standing	21		Acceptable
		Annual	12		Sitting	20		Acceptable
	B	Spring	11	-15%	Sitting	18	-14%	Acceptable
		Summer	9	-18%	Sitting	15	-12%	Acceptable
		Fall	10	-17%	Sitting	17	-11%	Acceptable
		Winter	12		Sitting	19		Acceptable
		Annual	11		Sitting	17	-15%	Acceptable
187	A	Spring	18		Walking	26		Acceptable
		Summer	14		Standing	20		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	19		Walking	26		Acceptable
		Annual	17		Walking	24		Acceptable
	B	Spring	18		Walking	25		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	17		Walking	24		Acceptable
		Winter	19		Walking	27		Acceptable
		Annual	17		Walking	25		Acceptable
188	A	Spring	16		Walking	24		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	15		Standing	22		Acceptable
		Winter	17		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable
	B	Spring	15		Standing	23		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	16		Walking	25		Acceptable
		Annual	15		Standing	23		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
189	A	Spring	18		Walking	25		Acceptable
		Summer	15		Standing	21		Acceptable
		Fall	17		Walking	23		Acceptable
		Winter	18		Walking	25		Acceptable
		Annual	17		Walking	24		Acceptable
	B	Spring	17		Walking	24		Acceptable
		Summer	13	-13%	Standing	19		Acceptable
		Fall	16		Walking	22		Acceptable
		Winter	18		Walking	25		Acceptable
		Annual	16		Walking	23		Acceptable
190	A	Spring	16		Walking	22		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	15		Standing	21		Acceptable
	B	Spring	11	-31%	Sitting	18	-18%	Acceptable
		Summer	9	-31%	Sitting	15	-21%	Acceptable
		Fall	10	-33%	Sitting	17	-19%	Acceptable
		Winter	12	-20%	Sitting	19	-17%	Acceptable
		Annual	11	-27%	Sitting	17	-19%	Acceptable
191	A	Spring	16		Walking	22		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	15		Standing	22		Acceptable
		Annual	15		Standing	21		Acceptable
	B	Spring	13	-19%	Standing	19	-14%	Acceptable
		Summer	11	-15%	Sitting	16	-11%	Acceptable
		Fall	12	-14%	Sitting	18	-14%	Acceptable
		Winter	13	-13%	Standing	20		Acceptable
		Annual	12	-20%	Sitting	19		Acceptable
192	A	Spring	16		Walking	23		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	15		Standing	21		Acceptable
	B	Spring	15		Standing	21		Acceptable
		Summer	12		Sitting	17	-11%	Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	16		Walking	22		Acceptable
		Annual	15		Standing	21		Acceptable

Notes:
1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

<u>Configurations</u>

A – No Build
B – Full Build

<u>Mean Wind Speed Criteria</u>

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

<u>Effective Gust Criteria</u>

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

Table 1: Mean Speed and Effective Gust Categories - Multiple Seasons

BPDA Criteria			Mean Wind Speed			Effective Gust Wind Speed		
Loc.	Config.	Season	Speed(mph)	%Change	RATING	Speed(mph)	%Change	RATING
193	A	Spring	14		Standing	21		Acceptable
		Summer	12		Sitting	18		Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	15		Standing	22		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	13		Standing	20		Acceptable
		Summer	11		Sitting	17		Acceptable
		Fall	13		Standing	19		Acceptable
		Winter	13	-13%	Standing	20		Acceptable
		Annual	13		Standing	19		Acceptable
194	A	Spring	15		Standing	22		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	14		Standing	21		Acceptable
		Summer	11	-15%	Sitting	17	-11%	Acceptable
		Fall	13		Standing	20		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	13		Standing	21		Acceptable
195	A	Spring	15		Standing	23		Acceptable
		Summer	13		Standing	19		Acceptable
		Fall	15		Standing	21		Acceptable
		Winter	16		Walking	23		Acceptable
		Annual	15		Standing	22		Acceptable
	B	Spring	15		Standing	22		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
196	A	Spring	15		Standing	22		Acceptable
		Summer	13		Standing	18		Acceptable
		Fall	14		Standing	21		Acceptable
		Winter	15		Standing	23		Acceptable
		Annual	14		Standing	21		Acceptable
	B	Spring	15		Standing	21		Acceptable
		Summer	12		Sitting	17		Acceptable
		Fall	14		Standing	20		Acceptable
		Winter	15		Standing	22		Acceptable
		Annual	14		Standing	21		Acceptable

Notes: 1) Wind speeds are for a 1% probability of exceedance; and,
2) % Change is based on comparison with Configuration A and only those that are greater than 10% are listed.

Configurations

A – No Build
B – Full Build

Mean Wind Speed Criteria

Comfortable for Sitting: ≤ 12 mph
Comfortable for Standing: > 12 and ≤ 15 mph
Comfortable for Walking: > 15 and ≤ 19 mph
Uncomfortable for Walking: > 19 and ≤ 27 mph
Dangerous Conditions: > 27 mph

Effective Gust Criteria

Acceptable: ≤ 31 mph
Unacceptable: > 31 mph

APPENDIX A

APPENDIX A: DRAWING LIST FOR MODEL CONSTRUCTION

The drawings and information listed below were received from WSDEVELOPMENT and were used to construct the scale model of the proposed Seaport Square development in Boston, MA. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

File Name	File Type	Date Received (dd/mm/yyyy)
Public Realm.pptx	PowerPoint	12/12/2016
1063_001.pdf	PDF	23/12/2016
Apple+P_161026.3dm	3dm	31/10/2016
2016.10.26_3DMODEL-BASE-MASSING-NO-ARCH-DETAIL.skp	SketchUp	26/10/2016
161006_STEPPED.skp	SketchUp	25/10/2016

Appendix C

Air Quality

AIR QUALITY APPENDIX

Introduction

This Air Quality Appendix provides modeling assumptions and backup for results presented in Section 4.5 of the report. Included within this documentation is a brief description of the methodology employed along with pertinent calculations and data used in the emissions and dispersion calculations supporting the microscale air quality analysis.

Motor Vehicle Emissions

The EPA MOVES computer program generated motor vehicle emissions used in the garage stationary source analysis along with the mobile source CAL3QHC modeling and mesoscale analysis. The model input parameters were provided by MassDEP. Emission rates were derived for 2016 and 2023 for speed limits of idle, 10, 15, and 30 mph for use in the microscale analyses.

MOVES CO Emission Factor Summary

Carbon Monoxide Only

		2016	**2023**
Free Flow	30 mph	2.697	1.844
Right Turns	10 mph	4.447	2.956
Left Turns	15 mph	3.823	2.586
Queues	Idle	9.997	4.102

Notes: Winter CO emission factors are higher than Summer and are conservatively used
Urban Unrestricted Roadway type used

CAL3QHC

For the intersection studied, the CAL3QHC model was applied to calculate CO concentrations at sensitive receptor locations using emission rates derived in MOVES. The intersection's queue links and free flow links were input to the model along with sensitive receptors at all locations nearby each intersection. The meteorological assumptions input into the model were a 1.0 meter per second wind speed, Pasquill-Gifford Class D stability combined with a mixing height of 1000 meters. For each direction, the full range of wind directions at 10 degree intervals was examined. In addition, a surface roughness (z_0) of 321 cm was used for the intersection. Idle emission rates for queue links were based on 0 mph emission rates derived in MOVES. Emission rates for speeds of 10, 15, and 30 mph were used for right turn, left turn, and free flow links, respectively.

Seaport Square NPC
Background Concentrations

POLLUTANT	AVERAGING TIME	Form	2013	2014	2015	Units	ppm/ppb to $\mu g/m^3$ Conversion Factor	2013-2015 Background Concentration ($\mu g/m^3$)	Location
SO_2 (1)(6)	1-Hour (5)	99th %	14	28	9.4	ppb	2.62	44.9	531A E. 1st St., Boston (7)
	3-Hour	H2H	16.3	24.3	8.7	ppb	2.62	63.7	531A E. 1st St., Boston (7)
	24-Hour	H2H	6.5	8.1	4.3	ppb	2.62	21.2	531A E. 1st St., Boston (7)
	Annual	H	1.53	1.74	0.8	ppb	2.62	4.6	531A E. 1st St., Boston (7)
PM-10	24-Hour	H2H	34	61	28	$\mu g/m^3$	1	61	Harrison Ave., Boston
	Annual	H	15.1	13.9	12.4	$\mu g/m^3$	1	15.1	Harrison Ave., Boston
PM-2.5	24-Hour (4)	98th %	19.9	14.5	16.8	$\mu g/m^3$	1	17.1	174 North St, Boston
	Annual (4)	H	8.8	7.1	7.4	$\mu g/m^3$	1	7.8	174 North St, Boston
NO_2 (3)	1-Hour (5)	98th %	47	62	53	ppb	1.88	101.5	531A E. 1st St., Boston (7)
	Annual	H	12.2	14	15.0	ppb	1.88	28.1	531A E. 1st St., Boston (7)
CO (2)	1-Hour	H2H	1.9	1.7	1.4	ppm	1146	2145.3	Harrison Ave., Boston
	8-Hour	H2H	1.2	1.3	0.9	ppm	1146	1489.8	Harrison Ave., Boston
Ozone (4)	8-Hour	H4H	0.059	0.054	0.056	ppm	1963	115.8	Harrison Ave., Boston
Lead	Rolling 3-Month	H	0.006	0.014	0.016	$\mu g/m^3$	1	0.016	Harrison Ave., Boston

Notes:
From 2013-2015 EPA's AirData Website
(1) SO_2 reported ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 2.62 $\mu g/m^3$.
(2) CO reported in ppm. Converted to $\mu g/m^3$ using factor of 1 ppm = 1146 $\mu g/m^3$.
(3) NO_2 reported in ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 1.88 $\mu g/m^3$.
(4) O_3 reported in ppm. Converted to $\mu g/m^3$ using factor of 1 ppm = 1963 $\mu g/m^3$.
(5) Background level is the average concentration of the three years.
(6) The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.
(7) The E. 1st St. monitor was closed in 2014. Harrison Avenue data used for 2015 SO_2 and NO_2.

Seaport Square NPC

Intersections (Signalized Only)	2016 Existing Weekday AM Peak LOS RANK	2016 Existing Weekday AM Peak COMB. RANK	2016 Existing Weekday AM Peak Traffic Volume RANK	2016 Existing Weekday PM Peak LOS RANK	2016 Existing Weekday PM Peak COMB. RANK	2016 Existing Weekday PM Peak Traffic Volume RANK
6: Northern Avenue & Pier 4 Boulevard	12	26	14	13	27	14
7: Sleeper Street & Seaport Boulevard	1	3	2	2	5	3
8: Boston Wharf Road (WSR) & Seaport Boulevard	12	21	9	8	16	8
9: East Service Road & Seaport Boulevard	3	9	6	4	8	4
10: B Street & Seaport Boulevard	3	13	10	2	8	6
12: D Street & Seaport Boulevard	10	22	12	8	18	10
15: A Street/Thomson St & Congress Street	1	8	7	4	15	11
16: Boston Wharf Road (WSR) & Congress Street	3	8	5	8	15	7
17: Congress Street & East Service Road	3	7	4	8	20	12
18: B Street & Congress Street	3	6	3	4	6	2
19: D Street & Congress Street	3	11	8	1	6	5
20: D Street & Transitway	12	25	13	13	26	13
21: D Street & I-90 Ramp	10	21	11	8	17	9
22: D Street & Summer Street	3	4	1	4	5	1
23: Seaport Boulevard & Fan Pier Boulevard						

Seaport Square NPC

Intersections (Signalized Only)	2023 No-Build Weekday AM Peak LOS RANK	2023 No-Build Weekday AM Peak COMB. RANK	2023 No-Build Weekday AM Peak Traffic Volume RANK	2023 No-Build Weekday PM Peak LOS RANK	2023 No-Build Weekday PM Peak COMB. RANK	2023 No-Build Weekday PM Peak Traffic Volume RANK
6: Northern Avenue & Pier 4 Boulevard	9	24	15	10	25	15
7: Sleeper Street & Seaport Boulevard	9	10	1	2	3	1
8: Boston Wharf Road (WSR) & Seaport Boulevard	14	19	5	10	16	6
9: East Service Road & Seaport Boulevard	4	8	4	2	6	4
10: B Street & Seaport Boulevard	9	18	9	10	15	5
12: D Street & Seaport Boulevard	4	17	13	10	21	11
15: A Street/Thomson St & Congress Street	1	11	10	2	14	12
16: Boston Wharf Road (WSR) & Congress Street	4	11	7	2	12	10
17: Congress Street & East Service Road	4	7	3	10	24	14
18: B Street & Congress Street	1	3	2	2	5	3
19: D Street & Congress Street	1	9	8	1	9	8
20: D Street & Transitway	14	28	14	15	28	13
21: D Street & I-90 Ramp	9	20	11	2	11	9
22: D Street & Summer Street	4	15	11	2	4	2
23: Seaport Boulevard & Fan Pier Boulevard	9	15	6	2	9	7

Seaport Square NPC

Intersections (Signalized Only)	2023 Build Weekday AM Peak LOS RANK	2023 Build Weekday AM Peak COMB. RANK	2023 Build Weekday AM Peak Traffic Volume RANK	2023 Build Weekday PM Peak LOS RANK	2023 Build Weekday PM Peak COMB. RANK	2023 Build Weekday PM Peak Traffic Volume RANK
6: Northern Avenue & Pier 4 Boulevard	10	25	15	12	27	15
7: Sleeper Street & Seaport Boulevard	10	14	4	3	7	4
8: Boston Wharf Road (WSR) & Seaport Boulevard	14	21	7	3	10	7
9: East Service Road & Seaport Boulevard	2	7	5	3	4	1
10: B Street & Seaport Boulevard	2	12	10	12	17	5
12: D Street & Seaport Boulevard	2	16	14	12	23	11
15: A Street/Thomson St & Congress Street	2	13	11	3	16	13
16: Boston Wharf Road (WSR) & Congress Street	2	10	8	3	13	10
17: Congress Street & East Service Road	2	5	3	3	17	14
18: B Street & Congress Street	2	4	2	3	6	3
19: D Street & Congress Street	1	10	9	1	7	6
20: D Street & Transitway	14	27	13	15	27	12
21: D Street & I-90 Ramp	10	22	12	3	12	9
22: D Street & Summer Street	2	3	1	2	4	2
23: Seaport Boulevard & Fan Pier Boulevard	10	16	6	3	11	8

Seaport Square NPC

Intersections (Signalized Only)		All Modeled Cases		
		Worst 3 By LOS	Worst 3 By Volume	Overall
6: Northern Avenue & Pier 4 Boulevard		66	88	154
7: Sleeper Street & Seaport Boulevard		27	15	42
8: Boston Wharf Road (WSR) & Seaport Boulevard		61	42	103
9: East Service Road & Seaport Boulevard		18	24	42
10: B Street & Seaport Boulevard		38	45	83
12: D Street & Seaport Boulevard		46	71	117
15: A Street/Thomson St & Congress Street		13	64	77
16: Boston Wharf Road (WSR) & Congress Street		22	47	69
17: Congress Street & East Service Road		30	50	80
18: B Street & Congress Street		15	15	30
19: D Street & Congress Street		8	44	52
20: D Street & Transitway		83	78	161
21: D Street & I-90 Ramp		42	61	103
22: D Street & Summer Street		17	18	35
23: Seaport Boulevard & Fan Pier Boulevard		24	27	51

Due to excessive size CAL3QHC, and MOVES input and output files are available on digital media upon request.

Appendix D

Climate Change Preparedness and Resiliency Checklist

Climate Change Preparedness and Resiliency Checklist for New Construction

In November 2013, in conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the Boston Redevelopment Authority adopted policy for all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding project resiliency, preparedness, and to mitigate any identified adverse impacts that might arise under future climate conditions.

For more information about the City of Boston's climate policies and practices, and the 2011 update of the climate action plan, *A Climate of Progress*, please see the City's climate action web pages at http://www.cityofboston.gov/climate

In advance we thank you for your time and assistance in advancing best practices in Boston.

Climate Change Analysis and Information Sources:

1. Northeast Climate Impacts Assessment (www.climatechoices.org/ne/)
2. USGCRP 2009 (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/)
3. Army Corps of Engineers guidance on sea level rise (http://planning.usace.army.mil/toolbox/library/ECs/EC11652212Nov2011.pdf)
4. Proceeding of the National Academy of Science, "Global sea level rise linked to global temperature", Vermeer and Rahmstorf, 2009 (http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf)
5. "Hotspot of accelerated sea-level rise on the Atlantic coast of North America", Asbury H. Sallenger Jr*, Kara S. Doran and Peter A. Howd, 2012 (http://www.bostonredevelopmentauthority.org/planning/Hotspot of Accelerated Sea-level Rise 2012.pdf)
6. "Building Resilience in Boston": Best Practices for Climate Change Adaptation and Resilience for Existing Buildings, Linnean Solutions, The Built Environment Coalition, The Resilient Design Institute, 2103 (http://www.greenribboncommission.org/downloads/Building_Resilience_in_Boston_SML.pdf)

Checklist

Please respond to all of the checklist questions to the fullest extent possible. For projects that respond "Yes" to any of the D.1 – Sea-Level Rise and Storms, Location Description and Classification questions, please respond to all of the remaining Section D questions.

Checklist responses are due at the time of initial project filing or Notice of Project Change and final filings just prior seeking Final BRA Approval. A PDF of your response to the Checklist should be submitted to the Boston Redevelopment Authority via your project manager.

Please Note: When initiating a new project, please visit the BRA web site for the most current Climate Change Preparedness & Resiliency Checklist.

A.1 - Project Information

Project Name:	Seaport Square
Project Address Primary:	Blocks D, F, G, L3, L4, L5, L6, N, P, Q
Project Address Additional:	
Project Contact (name / Title / Company / email / phone):	Yanni Tsipis, WS Development Vice President - Seaport Yanni.Tsipis@wsdevelopment.com 617-646-3180

A.2 - Team Description

Owner / Developer:	WS Development
Architect:	OMA
Engineer (building systems):	Vanderweil
Sustainability / LEED:	WS Development
Permitting:	Epsilon Associates, Inc.
Construction Management:	
Climate Change Expert:	

A.3 - Project Permitting and Phase

At what phase is the project – most recent completed submission at the time of this response? **TBD**

☐ PNF / Expanded PNF Submission	☐ Draft / Final Project Impact Report Submission	☐ BRA Board Approved	☑ Notice of Project Change
☐ Planned Development Area	☐ BRA Final Design Approved	☐ Under Construction	☐ Construction just completed:

A.4 - Building Classification and Description

List the principal Building Uses:	Office/Research/Innovation/Residential/Hotel/Civic
List the First Floor Uses:	*Primary Retail/Entertainment/Cultural*

What is the principal Construction Type – select most appropriate type? **TBD**

☐ Wood Frame	☐ Masonry	☐ Steel Frame	☐ Concrete

Describe the building?

Site Area:	*23 acres*	Building Area:	*3,783,340 SF*
Building Height:	*129-260 Ft.*	Number of Stories:	*19-23 Flrs.*
First Floor Elevation (reference Boston City	*Varies*	Are there below grade spaces/levels, if yes how many:	*Varies/up to 3 levels*

Base):		

A.5 - Green Building

Which LEED Rating System(s) and version has or will your project use (by area for multiple rating systems)?

Select by Primary Use:	☐ New Construction	☐ Core & Shell	☐ Healthcare	☐ Schools
	☐ Retail	☐ Homes Midrise	☐ Homes	☑ Other
Select LEED Outcome:	☐ Certified	☐ Silver	☐ Gold	☐ Platinum

Will the project be USGBC Registered and / or USGBC Certified?

Registered:	*Yes*	Certified:	*TBD*
	Each building will likely be registered under the appropriate LEED rating system at the time of design		

A.6 - Building Energy-

What are the base and peak operating energy loads for the building? **TBD. This will be addressed on a building-by-building basis as designed.**

Electric:	*TBD (kW)*	Heating:	*TBD (MMBtu/hr)*
What is the planned building Energy Use Intensity:	*TBD (kWh/SF)*	Cooling:	*TBD (Tons/hr)*

What are the peak energy demands of your critical systems in the event of a service interruption?

Electric:	*TBD (kW)*	Heating:	*TBD (MMBtu/hr)*
		Cooling:	*TBD (Tons/hr)*

What is nature and source of your back-up / emergency generators? **TBD. This will be addressed on a building-by-building basis as designed.**

Electrical Generation:	*TBD (kW)*		Fuel Source:	
System Type and Number of Units:	☐ Combustion Engine	☐ Gas Turbine	☐ Combine Heat and Power	*(Units)*

B - Extreme Weather and Heat Events

Climate change will result in more extreme weather events including higher year round average temperatures, higher peak temperatures, and more periods of extended peak temperatures. The section explores how a project responds to higher temperatures and heat waves.

B.1 - Analysis

What is the full expected life of the project?

Select most appropriate:	☐ 10 Years	☐ 25 Years	☑ 50 Years	☐ 75 Years

What is the full expected operational life of key building systems (e.g. heating, cooling, ventilation)?

Select most appropriate:	☐ 10 Years	☑ 25 Years	☐ 50 Years	☐ 75 Years

What time span of future Climate Conditions was considered?

Select most appropriate:	☐ 10 Years	☐ 25 Years	☑ 50 Years	☐ 75 Years

Analysis Conditions - What range of temperatures will be used for project planning – Low/High?

8/91 Deg.	Based on ASHRAE Fundamentals 2013 99.6% heating; 0.4% cooling

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

95 Deg.	*5 Days*	*6 Events / yr.*

What Drought characteristics will be used for project planning – Duration and Frequency?

30-90 Days	*0.2 Events / yr.*

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

45 Inches / yr.	*4 Inches*	*0.5 Events / yr.*

What Extreme Wind Storm Event characteristics will be used for project planning – Peak Wind Speed, Duration of Storm Event, and Frequency of Events per year?

130 Peak Wind	*10 Hours*	*0.25 Events / yr.*

B.2 - Mitigation Strategies

What will be the overall energy performance, based on use, of the project and how will performance be determined?

Building energy use below code:	This will be calculated during design
How is performance determined:	

What specific measures will the project employ to reduce building energy consumption?

Select all appropriate:	☐ High performance building envelop	☐ High performance lighting & controls	☐ Building day lighting	☐ EnergyStar equip. / appliances
	☐ High performance HVAC equipment	☐ Energy recovery ventilation	☐ No active cooling	☐ No active heating
Describe any added measures:	These measures will be determined as the buildings are designed.			

What are the insulation (R) values for building envelop elements?

Roof:	*R = TBD*	Walls / Curtain Wall Assembly:	*R = TBD*
Foundation:	*R = TBD*	Basement / Slab:	*R =TBD*
Windows:	*R = TBD*	Doors:	*R = TBD*

What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure?

	☐ On-site clean energy / CHP system(s)	☐ Building-wide power dimming	☐ Thermal energy storage systems	☐ Ground source heat pump
	☐ On-site Solar PV	☐ On-site Solar Thermal	☐ Wind power	☑ None
Describe any added measures:	CHP will be studied for some of the buildings during design			

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems?

Select all appropriate:	☐ Connected to local distributed electrical	☐ Building will be Smart Grid ready	☐ Connected to distributed steam, hot, chilled water	☐ Distributed thermal energy ready

Will the building remain operable without utility power for an extended period?

	No	If yes, for how long:	*Days*
If Yes, is building "Islandable?			
If Yes, describe strategies:	These measures will be determined as the buildings are designed.		

Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure:

Select all appropriate:	☐ Solar oriented – longer south walls	☐ Prevailing winds oriented	☐ External shading devices	☐ Tuned glazing,
	☐ Building cool zones	☐ Operable windows	☐ Natural ventilation	☐ Building shading
	☐ Potable water for drinking / food preparation	☐ Potable water for sinks / sanitary systems	☐ Waste water storage capacity	☐ High Performance Building Envelop
Describe any added measures:	These measures will be determined as the buildings are designed.			

What measures will the project employ to reduce urban heat-island effect?

Select all appropriate:	☐ High reflective paving materials	☐ Shade trees & shrubs	☐ High reflective roof materials	☐ Vegetated roofs
Describe other strategies:	These measures will be determined as the buildings are designed.			

What measures will the project employ to accommodate rain events and more rain fall?

Select all appropriate:	☐ On-site retention systems & ponds	☐ Infiltration galleries & areas	☐ Vegetated water capture systems	☐ Vegetated roofs
Describe other strategies:	The Project anticipates capturing and recharge/reuse of one-inch of rainfall to the extent practicable.			

What measures will the project employ to accommodate extreme storm events and high winds?

Select all appropriate:	☐ Hardened building structure & elements	☐ Buried utilities & hardened infrastructure	☐ Hazard removal & protective landscapes	☐ Soft & permeable surfaces (water infiltration)
Describe other strategies:	These measures will be determined as the buildings are designed.			

C - Sea-Level Rise and Storms

Rising Sea-Levels and more frequent Extreme Storms increase the probability of coastal and river flooding and enlarging the extent of the 100 Year Flood Plain. This section explores if a project is or might be subject to Sea-Level Rise and Storm impacts.

C.1 - Location Description and Classification:

Do you believe the building to susceptible to flooding now or during the full expected life of the building?

Portions of the site

Describe site conditions?

Site Elevation – Low/High Points: *Varies Boston City Base Elev.(Ft.)*

Building Proximity to Water: *Ft.*

Is the site or building located in any of the following?

Coastal Zone: *Yes*

Velocity Zone: *No*

Flood Zone: *Yes*

Area Prone to Flooding: *Yes*

Will the 2013 Preliminary FEMA Flood Insurance Rate Maps or future floodplain delineation updates due to Climate Change result in a change of the classification of the site or building location?

2013 FEMA Prelim. FIRMs: *Yes*

Future floodplain delineation updates: *Yes*

What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding?

0 Ft.

If you answered YES to any of the above Location Description and Classification questions, please complete the following questions. Otherwise you have completed the questionnaire; thank you!

C - Sea-Level Rise and Storms

This section explores how a project responds to Sea-Level Rise and / or increase in storm frequency or severity.

C.2 - Analysis

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

Sea Level Rise: *3 Ft.*

Frequency of storms: *0.25 per year*

C.3 - Building Flood Proofing

Describe any strategies to limit storm and flood damage and to maintain functionality during an extended periods of disruption.

What will be the Building Flood Proof Elevation and First Floor Elevation:

Flood Proof Elevation: *Boston City Base Elev.(Ft.)*

First Floor Elevation: *Boston City Base Elev. (Ft.)*

Will the project employ temporary measures to prevent building flooding (e.g. barricades, flood gates):

	Yes / No	If Yes, to what elevation	*Boston City Base Elev. (Ft.)*
If Yes, describe:	The buildings will be protected up to the 100-year flood plain elevation. Transformers will be kept up above the first floor and rapidly deployable barrier systems will be available for the first floor entrances in severe storm events.		

What measures will be taken to ensure the integrity of critical building systems during a flood or severe storm event:

☐ Systems located above 1st Floor.	☑ Water tight utility conduits	☑ Waste water back flow prevention	☑ Storm water back flow prevention

Were the differing effects of fresh water and salt water flooding considered:

Yes

Will the project site / building(s) be accessible during periods of inundation or limited access to transportation:

No	If yes, to what height above 100 Year Floodplain:	*Boston City Base Elev. (Ft.)*

Will the project employ hard and / or soft landscape elements as velocity barriers to reduce wind or wave impacts?

	Yes / No
If Yes, describe:	

Will the building remain occupiable without utility power during an extended period of inundation:

No	If Yes, for how long:	*days*

Describe any additional strategies to addressing sea level rise and or sever storm impacts:

C.4 - Building Resilience and Adaptability

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Will the building be able to withstand severe storm impacts and endure temporary inundation?

Select appropriate:	*Yes*	☐ Hardened / Resilient Ground Floor Construction	☑ Temporary shutters and or barricades	☐ Resilient site design, materials and construction

Can the site and building be reasonably modified to increase Building Flood Proof Elevation?

Select appropriate:	*No*	☐ Surrounding site elevation can be raised	☐ Building ground floor can be raised	☐ Construction been engineered
Describe additional strategies:				

Has the building been planned and designed to accommodate future resiliency enhancements?

Select appropriate:	*Yes / No*	☐ Solar PV	☐ Solar Thermal	☐ Clean Energy /

			CHP System(s)
	☐ Potable water storage	☐ Wastewater storage	☐ Back up energy systems & fuel
Describe any specific or additional strategies:			

Thank you for completing the Boston Climate Change Resilience and Preparedness Checklist!

For questions or comments about this checklist or Climate Change Resiliency and Preparedness best practices, please contact: John.Dalzell.BRA@cityofboston.gov