PROJECT NOTIFICATION FORM

The Pinnacle at Central Wharf

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

Submitted by:
RHDC 70 East India LLC
c/o The Chiofaro Company
One International Place
Boston, MA 02110

Prepared by:
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In Association with:
Copley Wolff Design Group
Cosentini Associates
DLA Piper LLP (US)
Haley and Aldrich
Howard Stein Hudson
Kohn Pedersen Fox Associates PC
McNamara Salvia
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January 22, 2020

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Section 1.0

Project Information

1.0 PROJECT INFORMATION

1.1 Introduction

RHDC 70 East India LLC (the "Proponent") is pleased to submit this Project Notification Form ("PNF") for the Pinnacle at Central Wharf (the "Project"), which consists of the redevelopment of the 1.32-acre Boston Harbor Garage site, currently numbered as 70 East India Row, in Boston's Downtown Waterfront District (the "Project Site"). The Project Site, which is currently occupied by a nine-level structured parking garage (seven levels above grade and two below) with ground floor office and retail space, is bounded by Milk Street on historic Central Wharf to the north, Atlantic Avenue to the west, and East India Row to the south and east. The portion of East India Row to the south of the Project Site is a vehicular public way with a signalized intersection at Atlantic Avenue, while the portion of East India Row east of the Project Site is a fully pedestrianized public way that currently serves as an underutilized portion of the Harborwalk.

The Project will entail the demolition of the existing garage and the creation of over 28,000 square feet ("sf") of new, waterfront public open space, thereby realizing a principal objective of the Downtown Waterfront District Municipal Harbor Plan and Public Realm Activation Plan ("DWMHP"). With an emphasis on environmental sustainability and climate resilience, the Project consists of: (i) a destination outdoor gathering space, a substantial portion of which will be designed for seamless integration into the New England Aquarium's proposed "Blueway" vision for harbor access; (ii) an approximately 865,000 sf, architecturally distinctive tower element, 585 feet to the highest occupiable floor and no more than 600 feet in total height, containing retail, dining, office, and residential components and ringed with active uses on the lower levels; and (iii) a new, state-of-the-art below-grade parking facility consisting of approximately 1,100 spaces and serving both the Project and the surrounding neighborhood.

Redevelopment of the Project Site realizes an opportunity to revitalize a significant waterfront parcel at the center of the Downtown Waterfront District – Boston's "front door to the world." The existing unattractive parking garage will be replaced with a contemporary architectural landmark designed by Kohn Pedersen Fox Associates that is well-suited to this gateway location. In addition to the iconic tower element, the Project will feature a substantial increase and enhancement of public open space and public amenities that not only comply with the objectives of the Public Waterfront Act (Chapter 91) and the DWMHP, but in many ways represent a model waterfront project for this unique urban context. As the DWMHP states, "[t]he Harbor Garage occupies a unique site in the city, and the redevelopment of the site must be exceptional." The Project, in turn, has been designed to respond to this imperative and to do so in a resounding fashion.

Located at a hub of commercial, tourist and neighborhood activity, with its proximity to the Harbor, adjacency to the New England Aquarium, and frontage along some of the most well-used parcels of the Greenway, the Project Site currently represents an "activity gap" in an otherwise lively district. The completed Project will remedy this condition by delivering a vibrant transit oriented development that draws thousands of workers, residents, and visitors to the waterfront,

and replaces the deadening effect of a massive parking garage with a human-centered design that prioritizes people over automobiles. By combining residential and office components with significant new publicly accessible retail and amenity space, the Project will support existing residents and visitors, attract new ones, and serve as a substantial economic engine at the region's commercial core.

The Project Site's central location within the DWMHP planning area affords tremendous potential to improve public access along the waterfront, facilitate pedestrian circulation to the Harbor, and otherwise support a "user friendly" waterfront through the Project's ongoing placemaking efforts. To that end, in addition to providing physical access, the creation of new public open space on the Site provides greatly expanded sightlines toward the Harbor from the Greenway in a manner that emphasizes the relationship of one to the other. Perhaps most importantly, by means of its mix of uses, curated programming, and proximity to other well-loved cultural, historical and recreational assets, the Project is positioned to support waterfront access to a diverse cross-section of visitors, from Boston and beyond.

The Project will also provide meaningful improvements in pedestrian connectivity, not only east and west between city and Harbor, and north and south along a vastly improved Harborwalk, but also through a landmark building that will in and of itself serve as wayfinding for Central Wharf and will be enhanced by ground floor uses and orientations that respect both the Greenway and the adjacent waterfront. The Project's open space will be designed and programmed to function as a destination in its own right, but its ultimate integration into enhanced adjacent open spaces, including the Greenway and the New England Aquarium's proposed Blueway, unlocks the potential for a singularly remarkable whole that is far more than the sum of its parts. Part of this enhanced open space network will be an elevated Harborwalk, which will serve as a Porch for the city and the region, along the pedestrianized portion of East India Row, and is just one of the climate resiliency measures contemplated as part of the Project. In executing this public infrastructure improvement, the Project will serve as a catalyst for similar improvements toward the comprehensive district-wide approach to sea level rise contemplated as part of the Climate Ready Boston initiative. Sustainability and resiliency measures incorporated into the building itself will also serve as a model for future waterfront development.

In sum, the Project will represent the culmination of a comprehensive and inclusive planning process to define a vision worthy of the unique character of the Downtown Waterfront. In turn, through a combination of cutting-edge architecture and engaging open space, it will serve as a catalyst for a broader transformation of the district into a more active, accessible, connected, resilient and diverse mixed-use neighborhood.

This PNF is being submitted to the Boston Redevelopment Authority ("BRA") doing business as the Boston Planning & Development Agency (herein, the "BPDA") to initiate review of the Project under Article 80B, Large Project Review, of the Boston Zoning Code (the "Code").

1.2 Project Description

1.2.1 Project Site

The Project Site is currently numbered as 70 East India Row, also known as 270 Atlantic Avenue, in Boston's Downtown Waterfront District, at the intersection of historic Central Wharf and the Greenway. Consisting of 57,346 sf of land area as depicted on Figure 1-1, the Project Site is bounded by Atlantic Avenue, Milk Street, and East India Row, and is situated between the New England Aquarium ("Aquarium") and the Harbor Towers condominiums. The harbor's edge is located approximately 90 feet east of the Project Site.

The entirety of the Project Site is currently occupied by an aging and visually unattractive seven-story 418,626 sf building, with an additional two levels of parking below grade and approximately 29,800 sf of mixed-use space at the ground level (of which approximately 17,300 sf is currently leased by the Aquarium). The site is currently licensed for 1,475 parking spaces, which serve, among other users, the residents of the two Harbor Towers buildings, visitors to the Aquarium, and the general public.

1.2.2 Area Context

The Project Site is centrally located within the Downtown Waterfront District on Boston's inner harbor, one of the most notably mixed-use communities in the City, including office, residential, hospitality, government, retail, educational and cultural uses. Positioned for exceptional visibility from the Harbor and Logan Airport, the Project Site is also within close proximity to some of the City's most active areas, including the Seaport District to the southeast, Downtown Boston to the west, Faneuil Hall marketplace to the northwest, and the North End to the north. Both North Station and South Station are located within walking distance of the Project Site, providing convenient access to the MBTA Red, Green, Orange and Silver lines, Commuter Rail, Amtrak, regional bus lines and multiple BlueBikes stations. There are also several MBTA bus stops in the vicinity of the Project Site and an MBTA Blue Line station (Aquarium) immediately adjacent to the Project Site. Multiple commuter ferries, serving Boston's outer neighborhoods and suburban destinations, are within steps of the Site, and Logan Airport is a short subway or water taxi ride across the Harbor. Directly west of the Project Site is the Greenway, including its signature "Rings Fountain," and the Harborwalk traverses the easterly side of the Project Site. Refer to Figures 1-2 to 1-4 for an aerial locus map and photographs of the surrounding area.

1.2.3 Project Plan

In addition to extensive new public open space, consisting of over 28,000 sf of open space on the Site and significant improvements to the adjacent Harborwalk, the Project features the construction of a single tower totaling approximately 865,000 sf and comprised of the following uses:

- An approximately 284,600 sf residential component with approximately 200 residential units (currently anticipated to be rental);

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

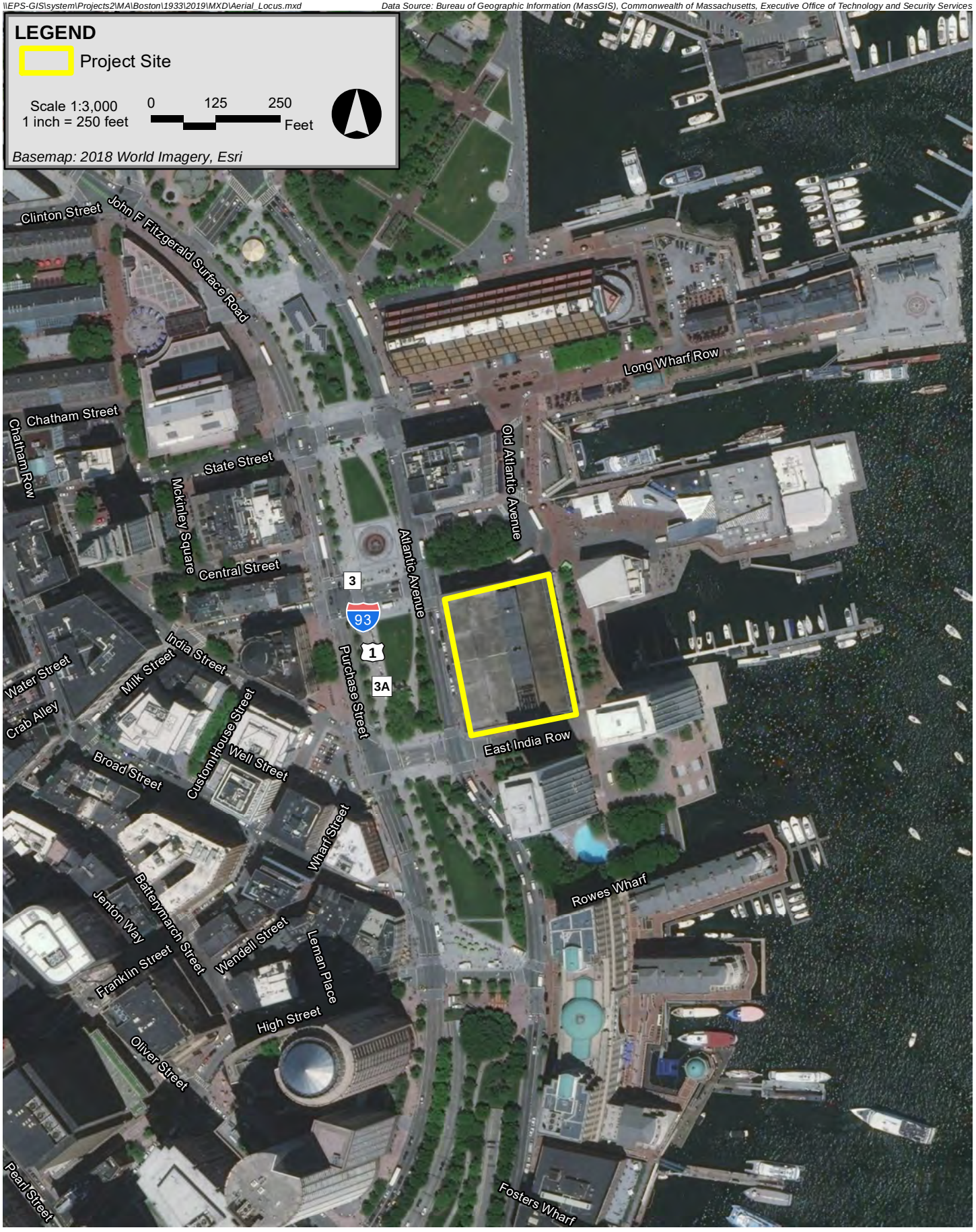
The Pinnacle at Central Wharf Boston, Massachusetts

Epsilon Associates Inc.

Figure 1-1

Site Locus Map

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



The Pinnacle at Central Wharf Boston, Massachusetts

Epsilon Associates Inc.

Figure 1-2
Aerial Locus Map

The Pinnacle at Central Wharf Boston, Massachusetts

Epsilon ASSOCIATES INC.

Figure 1-3
Existing Site from Greenway

The Pinnacle at Central Wharf Boston, Massachusetts

Epsilon ASSOCIATES INC.

Figure 1-4
Existing Site from Boston Harbor

- An approximately 538,000 sf office component; and
- Approximately 42,000 sf of publicly accessible amenity space (e.g., retail, restaurant, and other uses to activate the streetscape).

Spaces for the building's mechanical equipment are located at floors 3, 4, 5, 25 and the roof. There are six levels of below-grade parking encompassing a total area of approximately 432,900 sf. A loading dock servicing the building is located below grade at Level B2.

Table 1-1 Project Program

Project Element	Approximate Dimension
Residential	284,600 sf
Rental units	200 units
Office	538,000 sf
Public Amenity[1]	42,000 sf
Total Square Footage	**864,600 sf**
Height	585 feet to the highest occupiable floor and no more than 600 feet in total height
Parking	1,100 spaces
[1] Public amenity space includes, but is not limited to, retail other uses to activate the streetscape.	

Public Realm Improvements

The footprint of the tower is positioned to maximize space for pedestrian circulation, both to the north (consistent with the Aquarium's proposed "Blueway" vision), and along the Harborwalk to the East. With 30% of the Site open space concentrated on the north, a strong east-west connection between the Greenway and the Harbor is created, with a pedestrian-friendly plaza design that is accessible through steps and ramps at various locations. The new public plaza will function in complimentary fashion to the proposed future Blueway, widening as it approaches the water and wrapping to the east, to form a seamless connection with The Porch, the reimagined and expanded section of the Harborwalk adjacent to the Project Site. The new plaza, along with the Harborwalk, will be elevated approximately 4' (from 17.0-feet BCB to 21.0-feet BCB) above the current elevation to improve resiliency against climate change and storm surge, not only for the Project Site, but also as the first link in a district-wide approach to addressing these challenges. In addition, the Proponent will coordinate with abutters to explore the incorporation of a "living shoreline" landward of the existing seawall.

In addition, the public realm surrounding the proposed tower is carried into the building by means of a public corridor that flows through the ground floor plan and connects the southwest corner of the site at the office component lobby to the activity of a transformed Central Wharf to the north and east. The interior public areas will be activated with various amenitized spaces that

wrap upward to the building's second level, above the garage access ramp, through a series of steps with integrated seating areas. Public interior space continues to the building's second level. The integrated seating areas in the steps also offer elevated views of the Greenway to the West.

1.2.4 Consistency with Area Planning

The Project is subject to the DWMHP, which harmonizes with the state's Waterways Regulations the prior planning recommendations for the Downtown Waterfront District covered by the DWMHP. The DWMHP encompasses approximately a half mile of Boston's Downtown Waterfront extending from, and including, Christopher Columbus Park, southward to the Evelyn Moakley Bridge/Seaport Boulevard. The DWMHP advances previous planning efforts, including the Harborpark Plan: City of Boston Municipal Harbor Plan (1991), the Inner Harbor Passenger Water Transportation Plan (2000), the Fort Point Channel Watersheet Activation Plan (2002), the City of Boston Open Space Plan 2015-2021, the Greenway District Planning Study Use and Development Guidelines (2010), the Boston Zoning Code Greenway Overlay (2013), and the ongoing work of Climate Ready Boston. The DWMHP also builds on the significant investments made in the Downtown Waterfront District covered by the DWMHP over the past three decades, including the completion of the Central Artery/Tunnel Project, the construction of the Greenway, and the cleanup of Boston Harbor.

The Municipal Harbor Planning regulations (301 CMR 23.00) allow municipalities to establish long-term, comprehensive municipal harbor plans ("MHP") to inform and guide state agency actions affecting the implementation of waterway management programs at the local level. A MHP may include alternative use limitations or numerical standards that are less restrictive than Chapter 91 standards, provided that the MHP includes other requirements that, considering the balance of effects on an area wide basis, will mitigate, compensate, or otherwise offset adverse effects on water-related public interests. The MHP must be consistent with state tidelands policy objectives and associated regulatory principles.

The DWMHP planning process commenced in March 2013; the DWMHP was published in April 2017 and supplemented by the BPDA in February 2018; and the associated Secretary of Energy and Environmental Affairs ("Secretary") decision approving the plan was issued April 30, 2018. Six goals served as guiding principles for, and form the basis of the DWMHP and, in turn, have driven Proponent's Project design:

1. Continue to develop the District as an Active, Mixed Use Area that is an Integral Part of Boston's Economy.

2. Promote Access to Boston Harbor, the Harbor Islands and Water Transportation.

3. Improve Waterfront Wayfinding and Open Space Connections.

4. Enhance Open Space Resources and the Public Realm.

5. Create a Climate Resilient Waterfront.

6. Implement the Greenway District Planning Study Wharf District Guidelines (e.g., access to waterfront and Seaport; reinforce openness; facilitate accessibility; further diversify abutting uses).

Together, the DWMHP and the Secretary's decision established a number of amplifications and substitute provisions for the Chapter 91 standards at 310 CMR 9.00 et seq. Amplifications include:

- Elevating exterior areas, as feasible, as a non-structural alternative to increase coastal resiliency;
- Exterior private tideland areas planned for public access shall be held to the public activation standard used for Commonwealth Tidelands; and
- Clarification of the Aquarium as the primary Special Public Destination Facility ("SPDF") in the DWMHP planning area, the protection and promotion of which is to be implemented by means of a Memorandum of Understanding by and among the City of Boston, the Aquarium and the Proponent.

Substitute provisions created by a MHP may, in some cases, require implementation of additional public benefits beyond the standard provisions, known as "offsetting provisions." Specific to the Project Site, the DWMHP and the Secretary's decision established a single substitution, authorizing a maximum building height of 585 feet to the highest occupiable floor and no more than 600 feet in total, as well as related offsets and other provisions as described in greater detail below.

The Proponent is working with the City, its neighbors, and other stakeholders to ensure that the Project exceeds the goals of the DWMHP in providing substantial public benefits, amenities, and area-wide activation of the Downtown Waterfront District.

1.2.5 Schedule

Construction is anticipated to commence in the 4th quarter of 2021.

1.3 Public Participation

The Proponent files this PNF over 12 years after its acquisition of the Project Site and approximately seven years after the commencement of the DWMHP planning process. The process was particularly comprehensive, encompassing over five years of analysis and discussion, an extensive consultation period, and more than 40 public meetings. As a result, the proposed Project benefits from a level of public participation from a range of stakeholders that greatly exceeds what is typically associated with a development project at the commencement of Article

80 review. In addition to the wide-ranging outreach Proponent conducted during the DWMHP planning period, the following is a cross-section of the outreach that has been conducted to date following the Secretary's approval of the DWMHP.

- Pre-filing meetings with the BPDA
- Input from independent design professionals
- Ongoing meetings with representatives of the Aquarium
- Ongoing meetings with the Trustees of Harbor Towers
- Ongoing discussions with advocacy groups and other stakeholders
- Ongoing participation as a member of the Wharf District Council

In addition to the formal presentations and filings associated with the Article 80 and MEPA processes, Proponent anticipates a robust discussion including neighbors; advocacy groups; elected officials; the office, retail and residential brokerage communities; prospective tenants; and other stakeholders from the surrounding community and beyond.

1.4 Public Benefits

The Project will generate a wealth of public benefits for the surrounding neighborhood, the City of Boston, and the Commonwealth of Massachusetts, both during construction and on an ongoing basis upon its completion. The benefits include, but are not limited to, the following:

1.4.1 Removal of the Existing Above-Grade Parking Garage

Perhaps no development in Boston better illustrates the principle of "addition by subtraction" than this Project, such that the removal of the existing garage may very well be characterized as the Project's single most important public benefit. At present, the Harbor Garage occupies the entirety of its site, representing a visual and physical barrier to the waterfront, the legacy of an antiquated vision of urban renewal that prioritized the automobile over the pedestrian experience. As noted in the DWMHP, "[t]he redevelopment of the Harbor Garage project site has certain inherent public benefits, such as a reduction in lot coverage from the existing 100% level to a maximum of 50%." Beyond the creation of nearly 30,000 sf of new open space on some of the most valuable real estate in the densest area of the Commonwealth, the removal of the existing garage will enable the delivery of a Project that exemplifies all of the core goals of the DWMHP (see below), while also eliminating a use that is contrary to every core objective of tidelands development under Chapter 91. Recognizing that, for the foreseeable future, substantial parking demand will exist among Project tenants, residents and visitors, as well as from Aquarium visitors, Harbor Towers residents and the general public, a new garage will be rebuilt below grade and will be sized to accommodate these users with an eye toward future conversion to alternative uses as and when appropriate.

1.4.2 Downtown Waterfront Municipal Harbor Plan Objectives

As noted in Section 1.2.4 above, the BPDA articulated six goals which form the basis of the DWMHP. In light of those goals and in the context of the Project Site, the Project has been specifically designed and programmed to foster activity, access, connectivity, climate resiliency, an enhanced public realm, and consistency with the planning goals for the Wharf District.

The Project Site's strategic location, fronting on both the Harbor and the Greenway, allows for the proposed active ground levels and public realm to enhance the surrounding neighborhood with new commercial, retail, residential, and cultural uses that will become an integral part of Boston's economy, attract a diverse array of visitors and residents to the Project Site, provide amenities to the community at large, and support the continued year-round activation of the waterfront and Greenway.

The Project's improvements to pedestrian connectivity through the Site and building also create a more cohesive design theme and integrated public realm. The distinctive tower element will instantly become a Boston landmark, serving a wayfinding function that will signal, even at a distance, the location of a revitalized Central Wharf. The new public plaza, widening as it approaches the water and wraps to the east, will form a seamless connection with the Harborwalk and will function in complimentary fashion to the proposed future Blueway, thereby enhancing the public realm for the entire Downtown Waterfront District. These improvements in pedestrian circulation, combined with significant investments in district-wide and building-specific climate change resiliency, will create a more "user friendly" waterfront that will bring to life the Wharf District planning goals as originally outlined in the Greenway District Use and Development Guidelines in 2010.

Project Offsets

The DWMHP offsets specific to the Project Site, as designed, are $10 million in funding to be provided by the Proponent for the design and construction of the public realm improvements associated with the Aquarium's proposed "Blueway" vision and $300,000 for planning, feasibility assessment, design, engineering and permitting for a signature waterfront park and water transportation gateway at the BPDA-owned Chart House parking lot. Per the Secretary's decision, the $10 million contribution toward the Blueway would represent the largest value of an MHP offsetting measure anywhere in the Commonwealth to date.

Protection and Promotion of the New England Aquarium

The application of the amplifications in the DWMHP for the Project Site requires that a legally binding agreement ("MOU") be signed by the Proponent, the Aquarium, and the City. The MOU will include provisions that address the following principles:

- Interim Parking. During construction, the Proponent shall commit to provide parking within reasonable proximity to the Aquarium on weekends (500 spaces) and weekdays (250 spaces) and at a price point consistent with the existing program;

- Future Parking. The developer of the Harbor Garage site shall commit to providing parking in the same amounts and timing for the Aquarium in the proposed development; and

- Indemnification. The developer of the Harbor Garage site shall commit to ensure the viability of the Aquarium during construction of the proposed development in a manner consistent with the Secretary's decision, which details a $30,000,000 indemnification framework over the estimated three-year construction period.

1.4.3 Economic Benefits

Linkage Funding

The Project will be a "Development Impact Project" as defined by the Code. Accordingly, the Proponent anticipates making contributions to the City of Boston's Neighborhood Housing Trust and the City's Neighborhood Jobs Trust in accordance with linkage provisions of Article 80, as described in Section 1.5.6, below

Affordable Housing

In addition to the linkage payments into the Neighborhood Housing Trust, the Project will comply with the applicable Inclusionary Development Policy by providing a to-be-determined combination of on-site affordable units, off-site affordable units in the surrounding neighborhood, and/or a monetary contribution to an affordable housing fund to support affordability city-wide.

Increased Employment

The Project will create over 2,000 construction jobs and approximately 3,000 permanent jobs upon stabilization.

New Tax Revenues

In addition to the substantial income tax revenues generated as a result of the aforementioned job creation, the Project will also generate tens of millions of dollars in sales and employment taxes for the Commonwealth and significantly greater property tax revenues compared to the existing condition, which, in turn, will result in a substantial increase in City of Boston borrowing capacity.

1.4.4 Environmental Benefits

Smart Growth/Transit-Oriented Development

The Project is consistent with smart-growth and transit-oriented development principles. The Project Site is well served by existing public transportation, including major regional rapid transit, commuter rail, commuter ferry and bus lines that provide easy access to the Project Site from the Greater Boston region.

The redevelopment of this site into an attractive mixed-use development will help bridge the "activity gap" in what is otherwise an increasingly thriving urban community in Boston's Downtown Waterfront District. The addition of residential uses to an underutilized site that is adjacent to more active uses will support the expansion of the vibrant live/work/play model amplified by other recently completed and planned projects nearby, including the Greenway and its seasonal programming, Dock Square, and Hook Wharf. In addition, this mixed-use Project is adjacent to the MBTA Blue Line, approximately mid-way between the South Station and North Station bus and rail terminals, and walking distance to water taxis and commuter ferries. In stark contrast to the auto-centric function of the existing garage, the Project embodies the major tenets of a transit-oriented development (TOD) and will provide residents, employees and visitors with a variety of transportation options. In addition, the Project's setting adjacent to Boston's commercial employment core and several of the City's main tourist attractions makes it ideal for promoting walking and bicycling as means of transportation.

Improved Street and Pedestrian Environment

The Project will activate an underutilized site with enhanced streetscapes that include landscaped sidewalks, programmed public open space, and improved pedestrian access and view corridors to Boston Harbor. The site and tower design also prioritize pedestrian access through the Project Site in order to provide new connections between the Greenway and the Harbor that do not currently exist because of the massing of the existing parking garage.

As noted in Section 2.1.8, the Proponent will continue to work with the City of Boston to create a Project that vastly improves the pedestrian environment, and encourages transit and bicycle use. As part of the Project, the Proponent will reconstruct and widen the sidewalks where possible, install new, accessible ramps, improve street lighting where necessary, plant street trees, and provide bicycle storage facilities at appropriate locations at and around the site.

Sustainable Design/Green Building

The Proponent is committed to building a LEED® certifiable project with a current target of the Gold level, incorporating sustainable design features into the Project to preserve and protect the environment. The Project will meet, and in some cases exceed, the requirements of Article 37 of

the Code, which ensures that major building projects are planned, designed, constructed, and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston.

Public Realm Improvements, Programming and Climate Resiliency

The Project will provide substantial public realm improvements that contribute to an active and vibrant Downtown Waterfront District and Harborwalk. To maximize public benefit, contribute to on-site and district resiliency, and improve connections to recreational, cultural and historic attractions, as well as access to public transit, including water transportation facilities, the Project will incorporate the following design and programming elements.

- In addition to numerous building-specific climate change resiliency measures discussed in greater detail in Section 2.4 and 2.5 below, the Project will incorporate an elevated public realm, both on site, as well as on the adjacent Harborwalk, which will reflect sea level rise and storm surge projections consistent with Climate Ready Boston planning.

- Along the Central Wharf plaza, consistent with the proposed Blueway vision, views and wayfinding will take priority, guiding users from the Greenway toward the Aquarium. The edges of the plaza will offer raised seating, allowing for passive uses such as people-watching and enjoyment of views to and across the Harbor.

- The open spaces immediately surrounding the Building will require the most flexibility in use. Programming here will respond to daily and seasonal changes, allowing transformation into a large event space and supporting temporary installations to activate the plaza during morning and evening hours, and even during cold weather months, without feeling vacant or vast on an average day. Movable site furniture, planting elements, and opportunities for public art will be utilized to adjust the scale of the space, so it feels appropriate for every occasion. Infrastructure needed to support the variety of programming will be incorporated into the plaza design to provide maximum functionality; for example, dynamic site lighting, utilities for music events or art installations, appropriate access for food trucks and event setup, and multimedia capabilities will all be supported by the final design.

- As further described in Section 2.3.5.2 below, the Project envisions reimagining and invigorating the adjacent section of the Harborwalk to honor its location at Boston's "front door to the world." Through elevation, upgrades, and activation, this public asset will be transformed into a Porch for the City and the region.

- Subject to collaboration and coordination with abutters, a waterfront overlook at the water's edge will invite users to get close to the water and enjoy views across the Harbor. The overlook can be populated with moveable furniture of different types and configurations, so users can sit and read a book, lunch with coworkers, or take a break from walking tours to chat with their travel companions. Furniture can be removed for

large events or gatherings. It also provides an opportunity for school groups or tour groups to gather and view the tower, the Aquarium, other activity in the plaza, and the living shoreline; as such, it will be a key location for interpretive signage. This overlook is envisioned as an integrated feature of a new, resilient "living shoreline" to be installed landward of the existing seawall.

- Detailed design of the ground plane will emphasize the connection of outdoor programming to interior spaces and also provide opportunities for subtle wayfinding and interpretive elements. Commercial activity within the building will be supported by flexible seating and event space outside, and spaces suitable for use as outdoor classrooms will support educational programming.

- Building on decades of experience programming and activating the public realm at International Place, Proponent will utilize a combination of dedicated personnel, including property management employees and/or contracted placemaking staff to ensure a steady stream of cultural, educational, philanthropic and recreational offerings. In particular, the Proponent will explore opportunities for collaboration with the neighboring Aquarium to amplify its position as the district's primary SPDF while making optimal use of enhance and expanded public space resources.

1.5 Zoning and Regulatory Controls

1.5.1 Zoning District

The Project Site is located within the Downtown Waterfront Subdistrict of the Harborpark District, which is governed by Article 42A of the Code, and the Greenway Overlay District, which is governed by Article 49A of the Code. The entire Harborpark District is within the Restricted Parking Overlay District.

A planned development area ("PDA") is permitted at the Project Site. A PDA is a type of special purpose overlay district that is designed to accommodate a project that may be otherwise appropriate but does not fit within the requirements of the underlying zoning district. To the extent a PDA and corresponding PDA development plan is adopted for the Project Site, such PDA development plan can modify, with respect to the Site, the requirements otherwise applicable pursuant to underlying zoning, subject to certain limitations set forth in Sections 42A-16A through 42A-16G of the Code, including consistency with the use and dimensional provisions of the Downtown Waterfront District Municipal Harbor Plan & Public Realm Activation Plan as determined in Large Project Review. In addition, in conjunction with any PDA, Proponent intends to comply with the General Design and Environmental Standards set forth in Section 49A-4 of the Code, to the extent applicable to the Project.

1.5.2 Permitted Uses

Office, local retail/service, general retail (if less than 75,000 sf), restaurant (other than take-out in excess of 2,500 square feet) and multi-family residential uses in the Downtown Waterfront Subdistrict are allowed as-of-right. All of the primary uses of the proposed Project fall within the as-of-right categories under the Code. In the Downtown Waterfront Subdistrict, parking is a conditional use to the extent not accessory to residential use. In the Greenway Overlay District, certain limitations for ground floor uses are imposed on portions of parcels fronting on the Greenway

The Code has additional requirements for Day Care Facilities and Facilities of Public Accommodation within the Downtown Waterfront Subdistrict. It is the Proponent's intention to meet the Facilities of Public Accommodation requirements as affected by the Chapter 91 licensing process for the Project,

1.5.3 Site Development Dimension

Table 1-2 identifies the development dimensions applicable to the Project Site per the Code. Existing and proposed conditions are also listed for comparative purposes.

Table 1-2 Site Development Restrictions

	Underlying Code	PDA	Existing	Proposed
Maximum Height[1]	155 feet	585 feet to highest occupied floor (and in no case shall any structure exceed the FAA height limits or 600 feet, whichever is lower)[2]	95 feet	585 feet to the highest occupiable floor and no more than 600 feet in total height.
Maximum FAR/Floor Area/Volume	4.0 FAR	15.7 FAR, 900,000 square feet, 9,500,000 – 10,500,000 cubic feet[2]	7.3 FAR	864,600 square feet, and 10,500,000 cubic feet.
Shoreline Setbacks	35 feet (shorelines) 12 feet (sides of piers) 50 feet (ends of piers)	Determined by Development Plan	90	The Site is 90 feet from the shoreline and is not within the shoreline setback. The Project is not on a pier.
Landscaping/ Open Space	At least 50% of the Lot area for new construction at grade	50%[2]	0	50%

[1] Per the Code, maximum height is to the top of the highest occupiable floor.
[2] Per DWMHP and subject to additional limitations such as maximum of 30% being located on the north side of the site adjacent to Milk Street

1.5.4 Off-Street Parking and Loading

The Project, as proposed, will reduce the number of parking spaces located at the Site from approximately 1,475 enclosed spaces within the existing parking garage to 1,100 enclosed spaces within the reconfigured garage.

As noted above, the Project is located in the Restricted Parking Overlay District. If a PDA designation is not obtained by the Proponent, then a conditional use permit from the Boston Zoning Board of Appeals will be required to allow off-street parking at the site.

Loading requirements will be determined by the BPDA during the Article 80 Process.

In the absence of a PDA designation, Article 23 of the Code governs off-street parking in the Downtown Waterfront Subdistrict. Under Article 23, the minimum number of off-street parking space required for the Project Site is one for each 1,200 sf of gross floor area of retail on the ground floor, one for each 2,400 sf of gross floor area of office and retail (other than ground floor retail), one for every 20 seats in a restaurant, and one-half for each residential unit. Notwithstanding the foregoing, Section 42A-10(e) of the Code provides that "[f]or any Proposed Project subject to Large Project Review and for which a Transportation Access Plan is required, the Boston Redevelopment Authority may determine that so-called "shared parking" arrangements, in which parking spaces may be counted for different uses whose peak parking use periods are not coincident, will adequately meet parking demand associated with such Proposed Project , in which event the number of parking spaces otherwise required shall be correspondingly reduced." Accordingly, the precise number of parking spaces to be provided at the Project, and the mix of users of such parking spaces, will be determined in Large Project Review.

1.5.5 Zoning Relief

Based on a preliminary zoning review, if a PDA designation is not obtained, the Project requires relief to allow the additional FAR and height necessary to accommodate the proposed Project dimensions, and to permit parking as a conditional use.

The Proponent intends to petition the BPDA to recommend designation of the Project Site as a PDA, which would then require an amendment to the Code by petition to the Zoning Commission. In connection with such designation, the Proponent will develop a PDA development plan to govern the PDA and provide the necessary zoning relief for the Project.

1.5.6 Estimated Linkage Payments

The Project will be a "Development Impact Project" as defined by the Code. Accordingly, the Proponent anticipates making contributions to the City of Boston's Neighborhood Housing Trust and the City's Neighborhood Jobs Trust in accordance with linkage provisions of Article 80 of the Code. Housing exaction payments for the Project are currently estimated to be approximately

$4.36 million, and jobs exaction payments are currently estimated to be approximately $855,000. These payments for housing exaction and jobs exaction are based on rates of $9.03 and $1.78 per square foot (after deducting the first 100,000 square feet), respectively, as set forth in Article 80.

1.6 Legal Information

1.6.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments or pending legal actions concerning the Project other than the ongoing litigation brought by (a) the abutters of the neighboring Harbor Towers (Katherine Armstrong, et al. v. Kathleen Theoharides, in her Official Capacity as Secretary of the Executive Office of Energy and Environmental Affairs, et al., Case No. 1884-CV-02132, in the Business Litigation Session of the Suffolk Superior Court) and (b) the Conservation Law Foundation (Conservation Law Foundation, et al. v. Kathleen Theoharides, in her Official Capacity as Secretary of the Executive Office of Energy and Environmental Affairs, et al., Case No. 1884CV02144-BLS1 in the Business Litigation Session of the Suffolk Superior Court) (together, "the Project Litigation"). In the Project Litigation, the plaintiffs contend that the Project, if it proceeds, will result in damage to the environment and seek to restrain it. The plaintiffs also seek a declaration that the DWMHP involves an improper delegation of the Department of Environmental Protection's authority over tidelands under Chapter 91. The State Parties dispute the plaintiffs' claims and are defending the legality of the DWMHP and the Proponent disputes that the proposed Project will result in damage to the environment and is vigorously defending that claim.

1.6.2 History of Tax Arrears on Property

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

1.6.3 Evidence of Site Control/Nature of Public Easements

The entire Project Site is owned and controlled by the Proponent. One potential garage layout which is currently being considered by the Proponent, includes a portion that would extend below the pedestrianized portion of East India Row, which is a public way, to properly stage the provision of parking and loading, and to accommodate the proposed resiliency improvements. An alternative garage layout will only utilize the footprint of the existing structure at the Project Site.

1.7 Anticipated Permits and Approvals

Table 1-3 sets forth a preliminary list of permits and approvals from governmental agencies and authorities that are expected to be required for the Project. It is possible that only some of these permits and approvals will be required, or that additional permits or approvals will be required. The Proponent may seek state and federal funding for the Project.

Table 1-3 Anticipated Permits and Approvals

Agency Name	Permit, Approval, or Amendment
FEDERAL	
Environmental Protection Agency	NPDES Construction General Permit NPDES Dewatering General Permit
Federal Aviation Administration	Determination of No Hazard to Air Navigation
STATE	
Department of Environmental Protection, Division of Wetlands and Waterways	Chapter 91 License
Executive Office of Energy and Environmental Affairs, MEPA Office	MEPA Certificate
Department of Environmental Protection, Division of Air Quality Control	Fossil Fuel Equipment Approvals (boilers and generators) (if necessary) Construction/Demolition Notification (if necessary)
Massachusetts Water Resources Authority	Sewer Use Discharge Permit; Construction Dewatering Permit
Massachusetts Historical Commission	Determination of No Adverse Effect
Massachusetts Aeronautics Commission	Determination of Permit Not Required
Massachusetts Highway Department, Outdoor Advertising Board	Signage Approvals for Non-tenant Signs Visible from Greenway (if any)
Department of Transportation	Highway Access Permit, if applicable License or other approval for construction above or adjacent to Central Artery Tunnel, as applicable
CITY	
Boston Redevelopment Authority	Article 80 Review; PDA Development Plan Approval
Boston Conservation Commission	Order of Conditions
Boston Zoning Commission	PDA Designation
Boston Civic Design Commission	Design Review
Boston Air Pollution Control Commission	Modification Permit
Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Dewatering Discharge Permit; Sewer Connection Permit; Stormwater Connection Cross Connection/Backflow Prevention Permit; Hydrant Meter Permit
Boston Inspectional Services Department	Building and Occupancy Permits
Boston Interagency Green Building Committee	Determination of Article 37 Compliance
Boston Inspectional Services Department, Committee on Licenses	Amendment of Fuel Storage License; Garage Permit
Boston Transportation Department	Construction Management Plan; Transportation Access Plan
Boston Fire Department	Fuel Storage Tank Removal Permit; Fuel Storage Tank Permit (to the extent required for fuel serving boilers and generators, if any)

Table 1-3 Anticipated Permits and Approvals (Continued)

Agency Name	Permit, Approval, or Amendment
CITY	
Boston Public Improvement Commission	Street Opening Permit(s); Street Discontinuance; Street, Sidewalk Repair; Projection Permit (all as applicable)
Boston Parks and Recreation Commission	Project Approval
Boston Department of Public Works	Curb cut permit(s), as applicable
Boston Landmarks Commission	Determination of no significance

1.8 Project Identification and Team

Name /Location: The Pinnacle at Central Wharf
Downtown Waterfront District, Boston

Proponent: RHDC 70 East India LLC
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as development agent
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Transportation and Parking Consultant:	Howard Stein Hudson 11 Beacon Street, Suite 1010 Boston, MA 02108 (617) 482-7080 Guy D. Busa, Jr. Brian J. Beisel, PTP
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Section 2.0

Assessment of Development Review Components

2.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

2.1 Transportation

The Project team has conducted an evaluation of the transportation impacts of the Project in Downtown Boston. This transportation study adheres to the Boston Transportation Department ("BTD") Transportation Access Plan Guidelines and BPDA Article 80 Large Project Review process. This study includes an evaluation of existing conditions, future conditions without and with the Project (based upon the vehicular circulation pattern as discussed with the City in pre-filing meetings) projected parking demand, loading operations, transit services, and pedestrian activity. The Proponent will continue to work with the City of Boston to create a Project that efficiently serves vehicle trips, improves the pedestrian environment, and encourages public transit and bicycle use, with the broader goal of creating a state-of-the-art development, while also meeting the parking needs of the New England Aquarium and any commitments to Harbor Towers.

The Proponent is responsible for preparation of the Transportation Access Plan Agreement ("TAPA"), a formal legal agreement between the Proponent and the BTD that formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, travel demand management measures, and any other responsibilities that are agreed to by both the Proponent and the BTD. Because the TAPA must incorporate the results of the transportation study, mitigation commitments, and elements of design, it must be executed after these other processes have been completed. The proposed measures described in Section 2.1.8 and any additional transportation improvements to be undertaken as part of this Project will be defined and documented in the TAPA.

2.1.1 Project Description

The proposed Project will demolish the existing ~1,475 space parking garage largely serving commuter and transient users, and provide a total of approximately 865,000 sf of development, which will include approximately 538,000 sf of office space, 42,000 sf of retail and other public amenity space, and approximately 200 residential units. Approximately 1,100 parking spaces will be provided on-site in an underground garage (including approximately 850 for non-Project uses). Parking will be provided for building residents, commercial tenants, the general public, and the New England Aquarium, as well as the residents of the adjacent Harbor Towers (pending completion of a mutually acceptable long-term parking agreement).

As part of the Project, the Proponent will reconstruct and widen the sidewalks along the site frontage where possible, install new Americans with Disabilities Act ("ADA") accessible ramps, improve street lighting where necessary, plant street trees, and provide publicly accessible bicycle storage at appropriate locations within the Project Site. The Milk Street public realm will be improved resulting in an enhanced experience for all users within the Central Wharf area. The improvements include the removal of the parking garage entrance and exit, which will greatly improve the pedestrian experience along Milk Street by removing the vehicle and pedestrian interaction along the sidewalk. The removal of the driveway also allows for Milk Street to be

converted east of Atlantic Avenue to one-way, creating a counterclockwise loop with Old Atlantic Avenue and Central Street. The one-way operation will allow for the narrowing of the vehicular way, resulting in wider sidewalks and an increase in curb use length for more efficient pick-up and drop-off operations within Central Wharf. These pedestrian-prioritized improvements will be located adjacent to the open space pedestrian plaza on the northern portion of the site and will entirely transform the public gateway from the Greenway into Central Wharf.

The impact of these improvements in the immediate proximity of the Project would have maximum impact on general circulation if accomplished in tandem with other improvements in the surrounding area. These additional measures could include pedestrian prioritized shared streets and more time-dynamic parking restrictions for better curb usage to accommodate the the continually changing demand of the space, including existing metered spaces being converted to be short term pick-up and drop-off for cabs/Transportation Network Companies ("TNCs") and tour operators.

2.1.1.1 Study Area

The transportation study area runs along Atlantic Avenue and Surface Road and consists of the following 32 intersections, also shown on Figure 2-1:

- Milk Street/Site Driveway;
- East India Row/Site Driveway;
- Milk Street/Atlantic Avenue;
- India Street/East India Row/Atlantic Avenue;
- India Street/Surface Road;
- Milk Street/Surface Road;
- State Street/Surface Road;
- State Street/Atlantic Avenue;
- Broad Street/Surface Road;
- High Street/Surface Road;
- High Street/Atlantic Avenue;
- Seaport Boulevard/Atlantic Avenue/I-93 Northbound On-Ramp;
- Oliver Street/Seaport Boulevard/Purchase Street/I-93 Southbound Off-Ramp;
- Pearl Street/Purchase Street;
- Pearl Street/Atlantic Avenue;
- Congress Street/Purchase Street;
- Congress Street/Atlantic Avenue;

Harbor Garage Redevelopment / Boston, Massachusetts

HOWARD STEIN HUDSON
Engineers + Planners

Figure 2-1
Study Area Intersections

- Summer Street/Atlantic Avenue;
- Walk to the Sea/Surface Road;
- Walk to the Sea/Atlantic Avenue;
- Mercantile Street/Surface Road;
- Mercantile Street/Atlantic Avenue/Cross Street;
- Clinton Street/I-93 Southbound Off-Ramp/Surface Road;
- Commercial Street/Cross Street;
- North Street/I-93 Northbound Off-Ramp/Surface Road;
- I-93 Northbound Off-Ramp/North Street/Cross Street;
- Hanover Street/Cross Street;
- Salem Street/Cross Street;
- Sudbury Street/Cross Street/I-93 Northbound On-Ramp;
- Atlantic Avenue/Central Street;
- Central Street/Old Atlantic Avenue; and
- State Street/Old Atlantic Avenue.

2.1.1.2 Study Methodology

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

The Existing Condition analysis includes an inventory of the existing transportation conditions that was undertaken in the summer of 2018, 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 future transportation conditions analysis evaluates potential transportation impacts associated with the Project. The long-term transportation impacts are evaluated for the year 2026, based on an eight-year horizon from the year of the filing of this traffic study.

The No-Build (2026) Condition analysis includes general background traffic growth, traffic growth associated with specific developments (not including this Project), and transportation improvements that are planned in the vicinity of the Project Site.

The Build (2026) Condition analysis includes a net change in traffic volume due to the addition of Project-generated trip estimates, to the traffic volumes developed as part of the No-Build (2025) Condition analysis. The transportation study identified expected 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 Project-related impacts, and to address any traffic, pedestrian, bicycle, transit, safety, or construction related issues that are necessary to accommodate the Project.

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

2.1.2 Existing Conditions

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.

2.1.2.1 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:

Atlantic Avenue/Cross Street is classified as an urban principal arterial under MassDOT jurisdiction and is located adjacent to the west side of the Project Site. Atlantic Avenue runs one-way northbound from south of the study area to Mercantile Street to the north. At this intersection, Atlantic Avenue turns to the right. The corridor continues through the intersection one-way northbound as Cross Street. The roadway generally consists of three travel lanes and an exclusive bicycle lane between Summer Street and Seaport Boulevard. North of Seaport Boulevard, the roadway generally consists of two travel lanes, an exclusive bicycle lane, and a parking/loading lane. Sidewalks are generally provided along both sides of Atlantic Avenue/Cross Street, although near the I-93 ramps there are no sidewalks on the west side of the roadway.

John F. Fitzgerald Surface Road (Surface Road)/Purchase **Street** is classified as an urban principal arterial roadway under MassDOT jurisdiction. The corridor is located to the west of the Project Site and runs southbound through the study area. Surface Road is separated from the Atlantic Avenue/Cross Street corridor by the Rose Kennedy Greenway. For roughly 2,000 feet of its length, between High Street and Summer Street, the road is named Purchase Street. Between North Washington Street and Clinton Street the corridor consists of two travel lanes, a bike lane, and a parking lane. Between Clinton Street and Summer Street the corridor consists of three travel lanes and a bike lane.

Milk Street is classified as an urban minor arterial west of Atlantic Avenue and as a local roadway east of Atlantic Avenue adjacent to the north side of the Project Site. Milk Street is one-way in the eastbound direction west of Atlantic Avenue and is a two-way street east of Milk Street. At

its widest, Milk Street consists of three travel lanes, a bike lane, and a parking lane. At its narrowest, adjacent to the Project Site, Milk Street consists of one travel lane in each direction. Sidewalks are provided along both sides of Milk Street along its entire length.

India Street/East India Row is classified as an urban minor arterial west of Surface Road and a local roadway east of Surface Road. It runs one-way in the westbound direction west of Atlantic Avenue. East of Atlantic Avenue and adjacent to the south side of the Project Site, the roadway is named East India Row and runs in both directions, with the public vehicular street concluding adjacent to the Harbor Towers security booth. A pedestrianized public way continues along the entirety of the east side of the Project Site. India Street primarily consists of a single travel lane with parking along both sides. Parking is not allowed east of Surface Road with the exception of three handicap-accessible spaces that are provided along the eastbound side of East India Row. No special provisions are made for bicycles. Sidewalks are provided along both sides of India Street/East India Row.

State Street is classified as an urban principal arterial and is located north of the Project Site. It runs one-way westbound from the waterfront to Washington Street. There is a short, two-way section of State Street between Atlantic Avenue and Long Wharf that is classified as a local roadway. State Street primarily consists of two to three travel lanes with on street parking or loading zones. No special provisions are made for bicycles. Sidewalks are provided along both sides of State Street.

Hanover Street is classified as an urban minor arterial located north of the Project Site. Hanover Street generally runs in an east-west direction between Congress Street to the southwest and through the North End to Commercial Street to the northeast. Hanover Street consists of a single lane of travel in each direction, with additional turn lanes provided near the Greenway. Sidewalks are provided along both sides of Hanover Street. Parking is not allowed along either side of Hanover Street between Cross Street and Congress Street. However, parking is allowed along Hanover Street northeast of Cross Street in the North End neighborhood.

Seaport Boulevard is an urban principal arterial roadway located south of the Project Site. It is primarily a two-way, four-lane roadway which runs in an east-west direction from Purchase Street to the Seaport neighborhood. West of Purchase Street, the westbound roadway continues as a local one-way named Oliver Street. Buffered bike lanes are provided in both directions. On street parking is not permitted in the study area. Sidewalks are provided along both sides of Seaport Boulevard.

2.1.2.2 Existing Intersection Conditions

The existing study area intersections are described below. Intersection characteristics such as traffic control, lane usage, pedestrian facilities, pavement markings, and adjacent land use are described.

Milk Street/Site Driveway is a three-legged, unsignalized intersection with the Site Driveway Garage exit operating under stop control. The site driveway is the main public entrance and exit to the existing Harbor Garage. The Milk Street eastbound approach consists of a single through/right-turn lane. The Milk Street westbound approach consists of a single left-turn/through lane. Old Atlantic Avenue is located directly to the east of this intersection. Parking is not permitted on either side of Milk Street at this intersection. Sidewalks are provided along both sides of Milk Street. An unsignalized crosswalk with curb ramps is provided across Milk Street to the east of this intersection between this intersection and the Old Atlantic Avenue intersection.

East India Row/Site Driveway is a three-legged, unsignalized intersection with the Site Driveway Garage exit operating under stop control. The East India Row eastbound approach consists of a single left-turn/through lane. Handicap-accessible parking is available along this side of the street. The East India Row westbound approach consists of a single through/right-turn lane. The Site Driveway consists of the Harbor Towers resident entrance and exit to the Harbor Garage as well as a loading dock used primarily by the Aquarium for its leased facilities currently located at the Project Site. On the southbound approach, vehicles can turn left or right onto East India Row. Parking is not permitted on this side of the road. Sidewalks are provided along both sides of East India Row. Pedestrians enter and exit the Harbor Garage through a separate way.

Milk Street/Atlantic Avenue is a four-legged, signalized intersection with three approaches. Milk Street is one-way eastbound west of the intersection and consists of a left-turn only lane, a left-turn/through lane, and a through-only lane. The Milk Street westbound approach consists of a right-turn lane. Atlantic Avenue is one-way northbound and consists of a through-only lane and a shared through/right-turn lane. A five-foot wide bicycle lane with a two-foot door zone buffer is also provided. Parking is not permitted along the Milk Street approaches. A parking lane is provided to the right side of the bike lane buffer. Sidewalks are provided along both sides of Milk Street and Atlantic Avenue, with the paths of the Rose Kennedy Greenway serving as sidewalks on the west side of Atlantic Avenue. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

India Street/East India Row/Atlantic Avenue is a four-legged, signalized intersection with two approaches. The East India Row westbound approach consists of a shared through/right-turn lane. West of the intersection, India Street is one-way westbound and has three receiving lanes at this intersection. Atlantic Avenue is one-way northbound and consists of a shared left-turn/through lane and a shared through/right-turn lane. A five-foot wide bicycle lane with a 1.5-foot door zone buffer is also provided. A parking lane is provided on the right side of the bike lane buffer. On-street parking is not permitted along the India Street/East India Row approach. Sidewalks are provided along both sides of East India Row/India Street and Atlantic Avenue, with the paths of the Rose Kennedy Greenway serving as sidewalks on the west side of Atlantic Avenue. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

India Street/Surface Road is a slightly offset four-legged, signalized intersection with two approaches. India Street is one-way westbound and consists of two exclusive left-turn lanes and one exclusive through lane. Parking is not permitted along this approach. Surface Road is one-way southbound and consists of three through-only lanes. Right turns onto India Street are prohibited. A five-foot wide bicycle lane is also provided. Parking is not permitted along any approach. Sidewalks are provided along both sides of India Street and Surface Road. Along the east side of Surface Road, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

Milk Street/Surface Road is a four-legged, signalized intersection with two approaches. Milk Street is one-way eastbound and consists of an exclusive through lane and a shared through/right-turn lane. There are three receiving lanes for traffic on the eastbound departure from the intersection. Surface Artery is one-way southbound and consists of a shared left-turn/through lane and two exclusive through lanes. A five-foot wide bicycle lane is also provided. Parking is not permitted along either approach. Sidewalks are provided along both sides of Milk Street and Surface Road. Along the east side of Surface Road, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

State Street/Surface Road is a four-legged, signalized intersection with two approaches. State Street is one-way westbound and consists of a left-turn only lane, a shared left-turn/through lane, and an exclusive through lane. Surface Road is one-way southbound and consists of two exclusive through lanes and a shared through/right-turn lane. Right turns on red are not permitted from this approach. A five-foot wide bicycle lane is provided. Parking is not permitted along either approach. Sidewalks are provided along both sides of State Street and Surface Road. Along the east side of Surface Road, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

State Street/Atlantic Avenue is a four-legged, signalized intersection with two approaches. The State Street westbound approach consists of an unmarked, shared through/right-turn lane. Parking along the State Street westbound approach is limited to licensed tour buses. Atlantic Avenue is one-way northbound and consists of one shared left-turn/through lane and one shared right-turn/through lane. A four-foot bike lane with a two-foot door zone buffer is provided. A parking lane for licensed tour buses is provided east of the bike lane buffer. Sidewalks are provided along both sides of State Street and Atlantic Avenue. Along the west side of Atlantic Avenue, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

Broad Street/Surface Road is a three-legged, signalized intersection with two approaches. The Broad Street eastbound approach consists of an exclusive right-turn lane. Sharrows are marked and a bike box is provided on the Broad Street approach. Parking is not permitted on this approach

although the lane is used for loading by commercial vehicles with minimal effect on traffic flow. Surface Road is one-way southbound and consists of two exclusive through lanes and a shared through/right-turn lane. A five-foot wide bicycle lane is also provided. Parking is not permitted on this approach. Sidewalks are provided along both sides of Broad Street and Surface Road. Along the east side of Surface Road, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. Crosswalks with handicap-accessible ramps and pedestrian signal equipment are provided across all legs of the intersection.

High Street/Surface Road is a four-legged, signalized intersection with two approaches. The High Street eastbound approach is comprised of one exclusive through lane and one shared through/right-turn storage lane. The storage lane is about 70 feet long (1-2 vehicles). A left-side bike lane as well as a bike box is provided on this approach. Parking lanes are provided along both sides of the roadway up to about 70 feet before the intersection. The Surface Road southbound approach consists of three through lanes with the left lane also serving left turns. After the intersection, Surface Road becomes Purchase Street. A five-foot wide bike lane along Surface Road and Purchase Street is marked through the intersection. No parking is allowed along either side of Purchase Street at this intersection. Sidewalks are provided along both sides of Surface Road/Purchase Street and High Street. Along the east side of Surface Road, the paths of the Rose Kennedy Greenway effectively serve as sidewalks.

High Street/Parking Garage/Atlantic Avenue is a four-legged, signalized intersection with three approaches. The High Street eastbound approach consists of two left-turn only lanes. A sharrow in the right lane marks the turning lane bikes should take. Street parking is not permitted on either side of this approach. The Atlantic Avenue northbound approach consists of a two through-only lanes. A five-foot wide bike lane is marked along the right side of the travel lanes through the intersection. To the right of the bike lane, a parking lane allows for short-term valet parking. On the northbound departure only, the bike lane is separated from the parking lane by a two-foot buffer. The third approach is the entrance and exit to the Rowes Wharf Parking Garage and the Residences at Rowes Wharf pick-up/drop-off area. This approach is affected by operations at the intersection because of its location at the northeast corner of Atlantic Avenue and High Street. However, traffic in and out of this driveway is not signal-controlled. Sidewalks are provided along both sides of Atlantic Avenue and High Street. On the west side of Atlantic Avenue, the paths through the Rose Kennedy Greenway effectively function as a sidewalk. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection.

Seaport Boulevard/Atlantic Avenue/I-93 Northbound On-Ramp is a five-legged, signalized intersection with three approaches. The Seaport Boulevard eastbound approach consists of one exclusive through lane and a shared left-turn/through lane. The Seaport Boulevard westbound approach consists of a shared through/bear right lane, a shared bear right-turn/right-turn lane, and a right-turn only lane. Right turns on red are not permitted on this approach. Two travel lanes are provided on the westbound departure as the roadway continues to become Oliver Street. Right-side bike lanes in both directions are provided on Seaport Boulevard east of Atlantic Avenue. A bike box is also provided on the westbound Seaport Boulevard approach. Parking is not provided

in either direction along Seaport Boulevard at this intersection. The Atlantic Avenue northbound approach consists of a shared left-turn/bear left-turn lane, a shared bear left-turn/through lane, and a shared through/right lane. Right turns on red are not permitted on this approach. A right-side bike lane as well as a bike box across the rightmost lane is provided on this approach. The Atlantic Avenue northbound departure leg is comprised of two travel lanes. Space for bus stops is provided on the northbound departure leg. The I-93 NB On-Ramp forms the northwest departure leg at this intersection. It is comprised of two travel lanes which descend into a tunnel beneath the Rose Kennedy Greenway in order to merge with the subsurface John F. Fitzgerald Expressway ("I-93"). Sidewalks are provided along both sides of Seaport Boulevard and Atlantic Avenue. On the northwest side of Atlantic Avenue, the pathway through the Rose Kennedy Greenway effectively functions as a sidewalk. The I-93 On-Ramp does not allow pedestrians or cyclists. Crosswalks are marked across all intersection legs and pedestrian signals are provided at all corners. The northwest and north intersection legs are treated as a single pedestrian crossing. Handicap-accessible ramps are provided at every point a crosswalk meets a curb.

Oliver Street/Seaport Boulevard/Purchase Street/I-93 Southbound Off-Ramp is a five-legged, signalized intersection with three approaches. The Seaport Boulevard westbound approach consists of a two through lanes with the left lane also serving left turns. Although there is an eastbound departure leg comprised of two travel lanes which continues to become Seaport Boulevard, Oliver Street is one-way westbound west of the intersection. Sharrows are marked in the right lane of Seaport Boulevard westbound on the approach legs. The Purchase Street southbound approach consists of three through lanes with the right lane also serving right turns. Left turns to eastbound Oliver Street are not permitted. A bike lane is also marked along Purchase Street through the intersection. No stopping is permitted along either side of Purchase Street near the intersection. The I-93 SB off-ramp forms the southwestbound approach at this intersection. It consists of a left-turn only lane onto Oliver Street eastbound and a through/right-turn lane to either Purchase Street southbound or Oliver Street westbound. Turns on red are not permitted on this approach. Sidewalks are provided along both sides of Oliver Street and Purchase Street. On the east side of Purchase Street, the paths through the Rose Kennedy Greenway effectively function as a sidewalk. Pedestrians and cyclists are prohibited from the I-93 SB off-ramp. Crosswalks and pedestrian signals are provided for all crossings. The north and northeast intersection legs are treated as two separate pedestrian crossings. Handicap-accessible ramps are provided at every point a crosswalk meets a curb.

Pearl Street/Purchase Street is a four-legged, signalized intersection with two approaches. The Pearl Street westbound approach consists of three lanes, a left-turn only lane, a through/left-turn lane, and a through lane. On the westbound departure however, there is only one receiving lane for through traffic. Sharrows are marked for left-turn and through movements on the westbound approach. A five-foot bike lane is provided only on the westbound departure. Parking is not allowed on the westbound approach. The westbound departure provides room for metered parking on the south side and for Brazilian consulate parking only on the north side. The Purchase Street southbound approach consists of three through lanes with the right lane also serving right turns onto Pearl Street. A five-foot bike lane is marked along Purchase Street through the

intersection. Sightseeing and MBTA buses are permitted to stop on this approach. Sidewalks are provided along both sides of Pearl Street and Purchase Street. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection.

Pearl Street / Atlantic Avenue is a three-legged, signalized intersection with one approach. The Atlantic Avenue northbound approach consists of three through lanes with the left lane also serving left-turns onto Pearl Street. A five-foot bike lane is marked along Atlantic Avenue through the intersection. Parking is not allowed along Atlantic Avenue near this intersection. The Pearl Street westbound departure consists of three receiving lanes. Sharrows are marked on this leg. Parking is not allowed on this segment of Pearl Street between Atlantic Avenue and Purchase Street. Sidewalks are provided along both sides of Pearl Street and Atlantic Avenue. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection.

Congress Street / Purchase Street / I-93 Southbound/I-90 Westbound On-Ramp is a five-legged, signalized intersection with two approaches. The Congress Street eastbound approach consists of two through lanes, one bear-right lane (to I-93/I-90 On-Ramp), and one right-turn only lane (to Purchase Street). Right turns on red are not permitted. Four receiving lanes for traffic are provided on the eastbound departure leg. Sharrows for through and right-turn movements are marked on both the approach and departure legs. Parking is not allowed on either the eastbound approach or departure legs. The Purchase Street southbound approach consists of one left-turn only lane, one bear-left/through lane, and one through lane. Field observations showed that actual lane usage of the left lane consisted of both left turns onto Congress Street and bear-left movements onto the I-93/I-90 On-Ramp. The Purchase Street southbound departure leg consists of two travel lanes. The I-93/I-90 On-Ramp southeastbound departure leg consists of one travel lane which provides access to either I-93 southbound or I-90 westbound. Commercial vehicle parking is permitted along the west side of the Purchase Street southbound approach from 10:00 am – 3:30 pm on weekdays. Otherwise, no stopping is allowed along this approach. Stopping is not permitted anytime on the southbound or southeastbound departure legs. A sharrow is marked on the southbound approach. A five-foot bike lane is provided on the southbound departure leg. Sidewalks are provided along both sides of Congress Street and Purchase Street. Pedestrians and cyclists are prohibited from the I-93/I-90 On-Ramp. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection. The south and southeast intersection legs are treated as a single pedestrian crossing.

Congress Street/Atlantic Avenue is a four-legged, signalized intersection with three approaches. The Congress Street eastbound approach consists of two left-turn only lanes and two through lanes. The Congress Street westbound approach consists of two right-turn only lanes. Right turns on red are not permitted. There is no westbound departure leg. Sharrows are marked for left-turn and through movements on the eastbound approach. A lane for valet, pick-ups, and drop-offs is provided on the Congress Street westbound approach. Otherwise, stopping is not permitted along the other curbside approaches of Congress Street. The Atlantic Avenue northbound approach consists of three through lanes with the right-most lane also serving right turns. Right turns on

red are permitted for this approach. A five-foot bike lane is marked along Atlantic Avenue through the intersection. Stopping is not permitted along either the Atlantic Avenue northbound approach or departure leg. Sidewalks are provided along both sides of Congress Street and Atlantic Avenue. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection.

Summer Street/Atlantic Avenue is a four-legged, signalized intersection with three approaches. The Summer Street eastbound approach consists of one shared left-turn/through lane and one through lane. The Summer Street westbound approach consists of three through lanes with the right-most lane also serving right turns. There are no provisions for bicycles along Summer Street at this intersection. The Atlantic Avenue northbound approach consists of one left-turn only lane, one shared left-turn/through lane, one through-only lane, and one right-turn only lane. There are three receiving lanes for traffic on the northbound departure leg. A five-foot pocket bike lane is provided on this approach and is marked along Atlantic Avenue through the intersection. A left-side lane for metered parking is also provided on the northbound approach. Sidewalks are provided along both sides of Summer Street and Atlantic Avenue. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all legs of the intersection.

South Market Street/Surface Road is a signalized pedestrian crossing with one vehicle approach. The Surface Road southbound approach consists of three through lanes. A five-foot bike lane is provided at this intersection. Stopping is not permitted along either the Surface Road southbound approach or departure leg. The 40-foot wide crosswalk allows for pedestrians and other non-motorized users to cross Surface Road between Faneuil Hall and the Rose Kennedy Greenway. The crosswalk is equipped with handicap-accessible ramps and pedestrian signals in both directions. Sidewalks are also provided along both sides of Surface Road.

Christopher Columbus Park Path/Atlantic Avenue is a signalized pedestrian crossing with one vehicle approach. The Atlantic Avenue northbound approach consists of two through lanes, a five-foot bike lane with a one-foot buffer, and a parking lane for sightseeing buses. The northbound departure leg consists of three travel lanes and a five-foot bike lane. Stopping is not permitted along Atlantic Avenue besides the sightseeing buses in the parking lane. The 35-foot wide crosswalk allows for pedestrians and other non-motorized users to cross Atlantic Avenue between the Rose Kennedy Greenway and Christopher Columbus Park. The crosswalk is equipped with handicap-accessible ramps and pedestrian signals in both directions. Sidewalks are also provided along both sides of Atlantic Avenue. On the west side of Atlantic Avenue, the path through the Rose Kennedy Greenway effectively functions as a sidewalk.

Mercantile Street/Surface Road is a three-legged, signalized intersection with two approaches. The Mercantile Street westbound approach consists of two left-turn lanes. Sharrows are marked on this approach. The Mercantile Street eastbound departure leg consists of two travel lanes. A median separates the two travel directions on Mercantile Street. Stopping is not permitted on either the westbound approach or eastbound departure. The Surface Road southbound approach consists of three through lanes with the left-most lane also serving left turns. A five-foot bike lane is marked along Surface Road through the intersection. Stopping is not permitted on either the

southbound approach or departure leg. Sidewalks are provided along both sides of Mercantile Street and Surface Road. A crosswalk with handicap-accessible ramps and pedestrian signals is provided only across the Mercantile Street leg because of the close proximity of crosswalks across Surface Road at Clinton Street and Walk to the Sea.

Mercantile Street/Atlantic Avenue/Cross Street is a four-legged, signalized intersection with three approaches. The Mercantile Street eastbound approach consists of two through lanes with the left-most lane also serving left turns. No provisions for bicycles are available on this approach although a five-foot bike lane is available on the Atlantic Avenue eastbound departure leg. Stopping is not permitted on this approach. The Atlantic Avenue westbound approach consists of one through/right-turn lane, a six-foot bike lane. A parking lane for residents only is also provided. Field observations showed that some vehicles use the wide bike lane as a right-turn lane in order to bypass the queue for the through movement. The Mercantile Street westbound departure leg consists of two receiving lanes for traffic. The right-most lane is marked with bicycle sharrows. The Atlantic Avenue northbound approach consists of one shared left-turn/through lane, one through-only lane, and one right-turn only lane. The Cross Street northbound departure leg consists of two through lanes. A right-side five-foot bike lane is marked on the northbound approach and pavement markings at the intersection direct cyclists to turn right to continue on Atlantic Avenue. Cyclists moving through to Cross Street are directed with sharrows to use the through lanes in order to avoid right hooks. A right-side five-foot bike lane begins again on the Cross Street northbound departure leg. Stopping is not permitted along either the northbound approach or departure legs. Sidewalks are provided along both sides of Atlantic Avenue, Mercantile Street, and Cross Street. Along Mercantile Street and on the west sides of Cross Street and Atlantic Avenue, the paths of the Rose Kennedy Greenway effectively serve as sidewalks.

Clinton Street/I-93 Southbound Off-Ramp/Surface Road is a four-legged, signalized intersection with two approaches. The Surface Road southbound approach consists of two through lanes and a shared through/right-turn lane. The right-most lane also serves as a parking lane for tour buses from 10:00 am to midnight. A sharrow marked on the left side of the right-most lane directs cyclists to avoid right hooks. A bike lane is marked through the intersection and on the southbound departure leg. The I-93 Southbound Off-Ramp southwestbound approach consists of a left-turn lane onto Surface Road, and a shared left-turn/through lane. Stopping is not permitted along the I-93 off-ramp approach. Clinton Street is a one-way, two-lane roadway that proceeds west from the intersection. Commercial vehicle parking is allowed along the south side of Clinton Street. Sidewalks are provided along both sides of Surface Road and Clinton Street. Pedestrians and cyclists are prohibited from the I-93 Southbound Off-Ramp. Crosswalks with handicap-accessible ramps and pedestrian signals are provided for all crossings.

Commercial Street/Cross Street is a three-legged, signalized intersection with two approaches. The Commercial Street westbound approach consists of a single right-turn only lane. There are no special provisions for bicycles on this approach. The unmarked roadway does provide room for a right-side lane of resident parking and a left-side lane of 2-hour visitor parking. The Cross Street northbound approach consists of two through-only lanes. A five-foot bike lane is marked through

the intersection. Stopping is not permitted on either the northbound approach or departure legs. Sidewalks are provided along both sides of Cross Street and Commercial Street except along the west side of the Cross Street northbound departure leg. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across the south and east intersection legs.

North Street/I-93 Northbound Off-Ramp/Surface Road is a four-legged, signalized intersection with three approaches. The Surface Road southbound approach consists of a through lane and a shared through/right-turn lane. A five-foot wide bicycle lane is also marked along Surface Road through this intersection. In addition, a parking lane for tour buses is provided along the southbound approach. The North Street eastbound approach consists of a single channelized right-turn only lane. No special provisions for bicycles are made on this approach. Stopping is not permitted along this approach. The I-93 Northbound Off-Ramp westbound approach consists of one shared left-turn/through lane and one through lane. Sidewalks are provided along both sides of Surface Road and North Street. Pedestrians and cyclists are prohibited from the I-93 Northbound Off-Ramp. Crosswalks with handicap-accessible ramps and pedestrian signals are provided for all crossings except across the south intersection leg.

I-93 Northbound Off-Ramp/North Street/Cross Street is a four-legged, signalized intersection with two approaches. The I-93 Northbound Off-Ramp westbound approach consists of one left-turn only lane and one shared left-turn/through lane. The Cross Street northbound approach consists of two through lanes with the right-most lane also serving right turns. A five-foot bike lane is marked along Cross Street through the intersection. A lane for daytime metered parking and overnight resident parking is provided on the northbound approach. The North Street eastbound departure leg consists of one travel lane. Resident parking is allowed on both sides of the roadway. Sidewalks are provided along both sides of Cross Street and North Street except the west side of the Cross Street northbound approach leg. Pedestrians and cyclists are prohibited from the I-93 Northbound Off-Ramp. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across the north and east intersection legs.

Hanover Street/Cross Street is a four-legged, signalized intersection with three approaches. The Hanover Street eastbound approach consists of one left-turn only lane and one through-only lane. Sharrows are marked for both left-turn and through movements for bicycles on this approach. The Hanover Street westbound approach consists of a single shared through/right-turn lane. However, the westbound departure leg has two lanes for receiving traffic and both are marked with sharrows. Stopping is not permitted on Hanover Street west of Cross Street. 2-hour and commercial parking is allowed on Hanover Street east of Cross Street. The Cross Street northbound approach consists of a shared left/through lane and a shared through/right-turn lane. A five-foot bike lane is provided on both the northbound approach and departure legs. A parking lane is also provided on both the northbound approach and departure legs. Sidewalks are provided along both sides of Hanover Street and Cross Street. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across all intersection legs.

Salem Street/Cross Street is a three-legged, signalized intersection with one approach. The Cross Street northbound approach consists of two through lanes with the right-most lane also serving right turns. A five-foot bike lane is marked along Cross Street through the intersection. A parking lane for 2-hour and commercial parking is provided on both the northbound approach and departure legs. A sidewalk-grade, unmarked loading/parking roadway runs parallel to Cross Street at this intersection. It can be classified as a shared street as all users share the same space. The Salem Street eastbound departure leg consists of a single travel lane with parking permitted along one side of the roadway. Sharrows indicate that bicycles may use the full lane. Sidewalks are provided along both sides of Salem Street and Cross Street. Along the west side of Cross Street, the paths of the Rose Kennedy Greenway effectively serve as sidewalks. A crosswalk with handicap-accessible ramps and pedestrian signals is provided across Cross Street at the south intersection leg. Pedestrians cross Salem Street in the raised shared street zone.

Sudbury Street/Cross Street/I-93 Northbound On-Ramp is a four-legged, signalized intersection with three approaches. The Sudbury Street eastbound approach consists of a shared hard right/right-turn lane and a right-turn only lane (onto Cross Street). No special provisions for bicycles are present on this approach. Stopping is not permitted along this approach. The Cross Street northbound approach consists of a two through lanes with the left-most lane also serving bear-left movements onto the I-93 Northbound On-Ramp. A five-foot bike lane is marked along Cross Street through the intersection. A lane for 2-hour and commercial parking is also provided on the northbound approach leg. The third approach is the unmarked Cross Street loading/parking zone as it meets the main Cross Street route. This approach is stop-controlled rather than signal-controlled; traffic operations in the other approach legs should be affected very minimally by vehicles from this approach. Sidewalks are provided along both sides of Sudbury Street and Cross Street except the west side of the Cross Street northbound departure leg. Pedestrians and cyclists are prohibited from the I-93 Northbound On-Ramp. The unmarked Cross Street loading/parking zone is effectively a shared street where all road users, including pedestrians and cyclists, share the same space. Crosswalks with handicap-accessible ramps and pedestrian signals are provided across the west and south intersection legs.

Atlantic Avenue/Central Street is a two-legged, unsignalized intersection with the Central Street approach operating under stop control. The Central Street westbound approach consists of two exclusive right-turn lanes. Atlantic Avenue is one-way northbound and consists of three through lanes and a five-foot wide bicycle lane. Parking is not permitted along any approach. Sidewalks are provided along both sides of Atlantic Avenue and Central Street. A Crosswalk with handicap-accessible ramps is provided across Central Street.

Central Street/Old Atlantic Avenue is a three-legged, unsignalized intersection with two approaches. The Old Atlantic Avenue northbound approach consists of a shared left-turn/through lane. The Old Atlantic Avenue southbound approach consists of a shared through/right-turn lane. This approach operates as a stop-controlled, even though there is no signage on the field. Parking is restricted to City licensed sightseeing trolleys only along the east side of Old Atlantic Avenue

and commercial vehicles along the north side of Central Street. Sidewalks are provided along both sides of Old Atlantic Avenue and Central Street. Crosswalks with handicap-accessible ramps are provided across the west and north intersection legs.

State Street/Long Wharf/Old Atlantic Avenue is a three-legged, unsignalized intersection with three approaches. The State Street eastbound approach consists a shared through/right-turn lane. The Long Wharf westbound approach consists of a shared left-turn/through lane. The Old Atlantic Avenue northbound approach operates under stop control and consists of a shared left-turn/right-turn lane. Parking is restricted to City licensed sightseeing trolleys along the east side of Old Atlantic Avenue and the north side of State Street, commercial parking along the south side of State Street, and a taxi stand along the north side of Long Wharf. Sidewalks are provided along both sides of Old Atlantic Avenue, State Street and Long Wharf. Crosswalks with handicap-accessible ramps are provided across the west and south intersection legs.

2.1.2.3 Existing Parking

An inventory of the existing on-street and off-street parking, as well as car sharing services in the vicinity of the Project, was collected. A description of each follows.

On-Street Parking and Curb Usage

On-street parking surrounding the Project Site consists of 2-hour metered parking along Atlantic Avenue immediately adjacent to the Project Site as well as four handicap-accessible parking spaces along East India Row. The segment of Atlantic Avenue immediately adjacent to the Project Site also serves as a commercial loading zone from 7 a.m. – 11 a.m. A pick-up and drop-off loop exists at the corner of Milk Street and Old Atlantic Avenue. Other curb uses within the Project Site vicinity include other loading zones, tour bus stops, an MBTA bus stop, and valet parking. The on-street parking regulations within the study area are shown in Figure 2-2.

Off-Street Parking

There are six parking lots and 15 parking garages located within a quarter-mile of the Project Site, including the existing parking garage at the Project Site itself. A detailed summary of all parking lots and garages are shown in Table 2-1. The Off-street lots and garage locations are shown in Figure 2-3. There are a total of 1,669 private parking spaces and 6,476 public spaces within a quarter-mile radius of the Site.

Table 2-1 Off-Street Parking within a Quarter-Mile of the Site

Map #	Address	Facility	Private Capacity	Public Capacity
Parking Lots				
1	Wendell Street	Wendell Street Lot	24	0
2	47 Broad Street	Broad & Water Street Lot	0	16
3	Commercial Wharf	Commercial Wharf	100	0
4	60 Long Wharf	Chart House Restaurant Lot	50	0
5	15–17 Northern Avenue	James Hook & Co. Lot	10	4
6	53 India Street	India Street Lot	0	13
Parking Lots – Subtotal			**184**	**33**
Parking Garages				
A	New Atlantic Ave. at State St.	Long Wharf Hotel	195	0
B	30 Rowes Wharf	Rowes Wharf Garage	150	535
C	21 Custom House Street	Custom House Garage	51	0
D	200 State Street	Marketplace Center Garage	112	0
E	One International Place	International Place	36	753
F	125 High Street	125 High St Garage	41	674
G	265 Franklin Street	Paine Webber Building	124	0
H	225 Franklin Street	State Street Bank Building	0	210
I	260 Franklin Street	Franklin Street Garage	80	0
J	1 Post Office Square[1]	One Post office Square Garage	318	82
K	Post Office Square	Post Office Garage	0	1,036
L	75 State Street	75 State Street Garage	0	681
M	60 State Street	60 State Street Associates	78	227
N	50 Clinton Street	Dock Square Garage	0	704
O	Harbor Garage	Harbor Garage	300	1,175
P	500 Atlantic Avenue	Intercontinental Hotel	0	366
Parking Garages – Subtotals			**1,485**	**6,443**
Parking Lots + Garages – Total			**1,669**	**6,476**

[1] Garage currently under construction, parking spaces might differ.

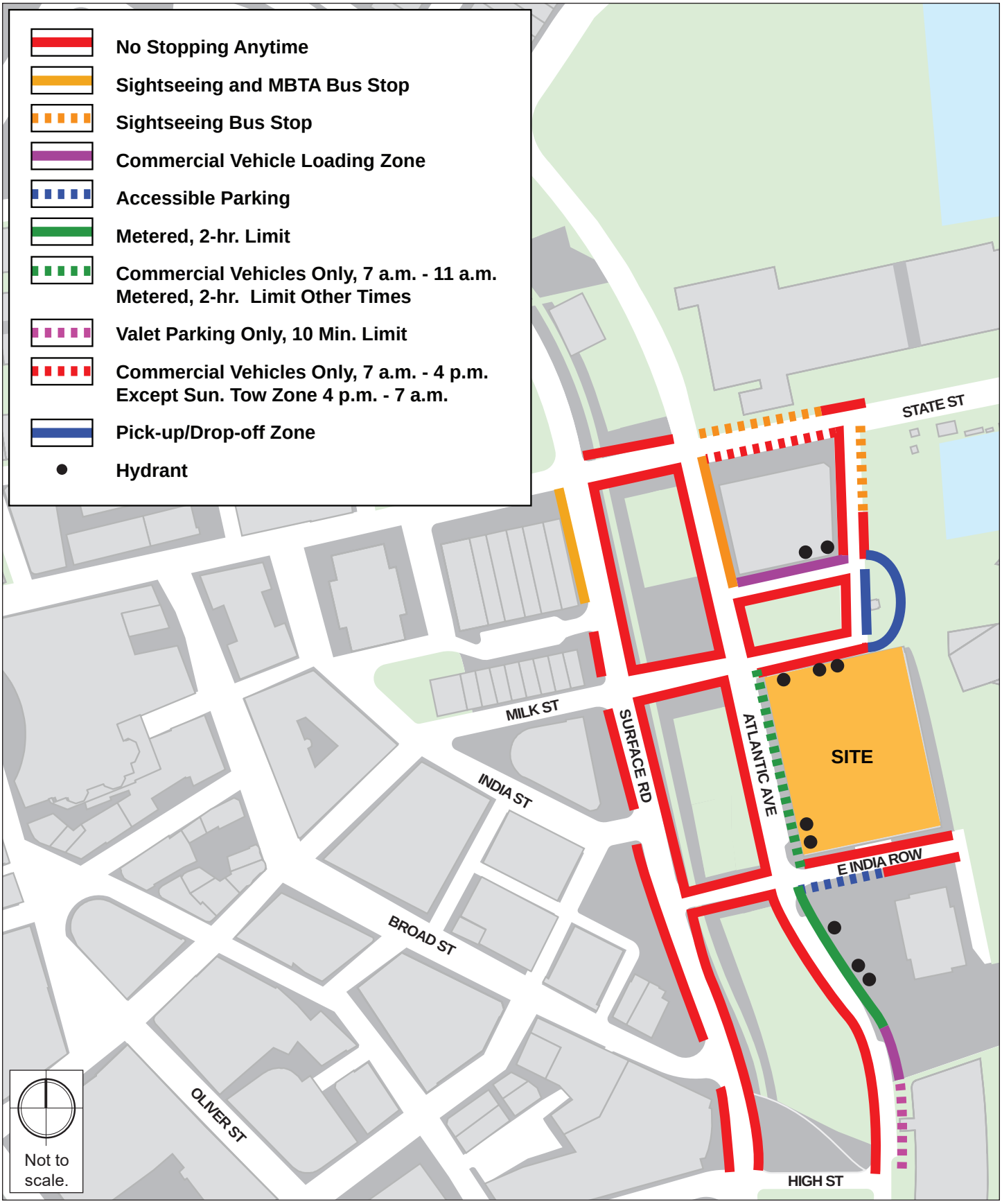

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Figure 2-2
On-street Parking

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Figure 2-3
Off-street Parking Within a Quarter-Mile of the Site

Car Sharing Services

Car sharing services enable easy access to short-term vehicular transportation. Vehicles are rented on an hourly or daily basis, and all 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. Pick-up/drop-off locations are typically in existing parking lots or other parking areas throughout neighborhoods as a convenience to users of the services. Nearby car sharing services provide an important transportation option and reduce the need for private vehicle ownership.

Zipcar is the primary car share company in the Boston car sharing market; however, other companies such as Turo and Getaround also operate within the city. There are approximately five Zipcar locations, one Turo location, and one Getaround location within a quarter mile of the Project Site. The nearby car sharing locations of the Project Site are shown in Figure 2-4.

2.1.2.4 Existing Condition Traffic Data

Traffic volume data was collected in the study area intersections on June 19, 2018. Turning Movement Counts ("TMCs") were conducted during the weekday a.m. and p.m. peak periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m., respectively) at the study area intersections. The TMCs collected vehicle classification including car, heavy vehicle, pedestrian, and bicycle movements. The detailed traffic counts for the study area intersections are provided in Appendix B.

In order to account for seasonal variation in traffic volumes throughout the year, data provided by MassDOT were reviewed. The most recent (2011) MassDOT Weekday Seasonal Factors were used to determine the need for seasonal adjustments to the June 2018 TMCs. The seasonal adjustment factor for roadways similar to the study area (Group 6 – Urban Arterials) during the month of June is 0.90. This indicates that average month traffic volumes are approximately 10% lower than the traffic volumes that were collected. The traffic counts were not adjusted to reflect average month condition in order to provide a conservatively high analysis consistent with the peak season traffic volumes. The MassDOT 2011 Weekday Seasonal Factors table is provided in Appendix B.

Existing Condition Traffic Volumes

Existing traffic volumes were balanced, where necessary, to develop the Existing Condition vehicular traffic volumes. The Existing Condition weekday a.m. and p.m. peak hour traffic volumes are shown in Figure 2-5A/Figure 2-5B and Figure 2-6A/Figure 2-6B, respectively.

Existing Pedestrian Volumes and Accommodations

With the few exceptions identified above, sidewalks are provided along both sides of all the roadways in the study area. In general, the sidewalks provided along nearby roadways are in good condition with few cracks and level grades. The closest crosswalks across Atlantic Avenue are

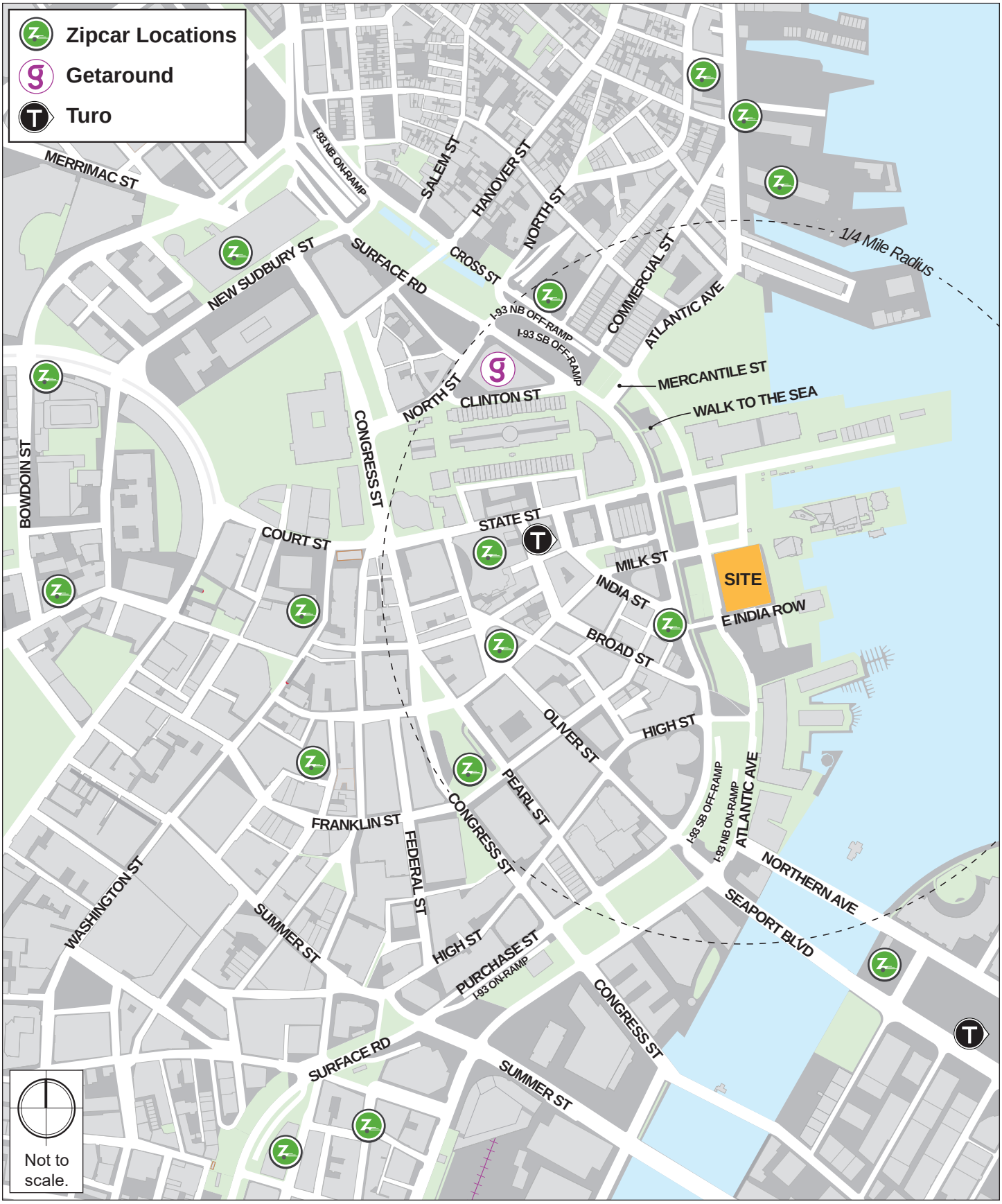

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Figure 2-4
Car Sharing Locations

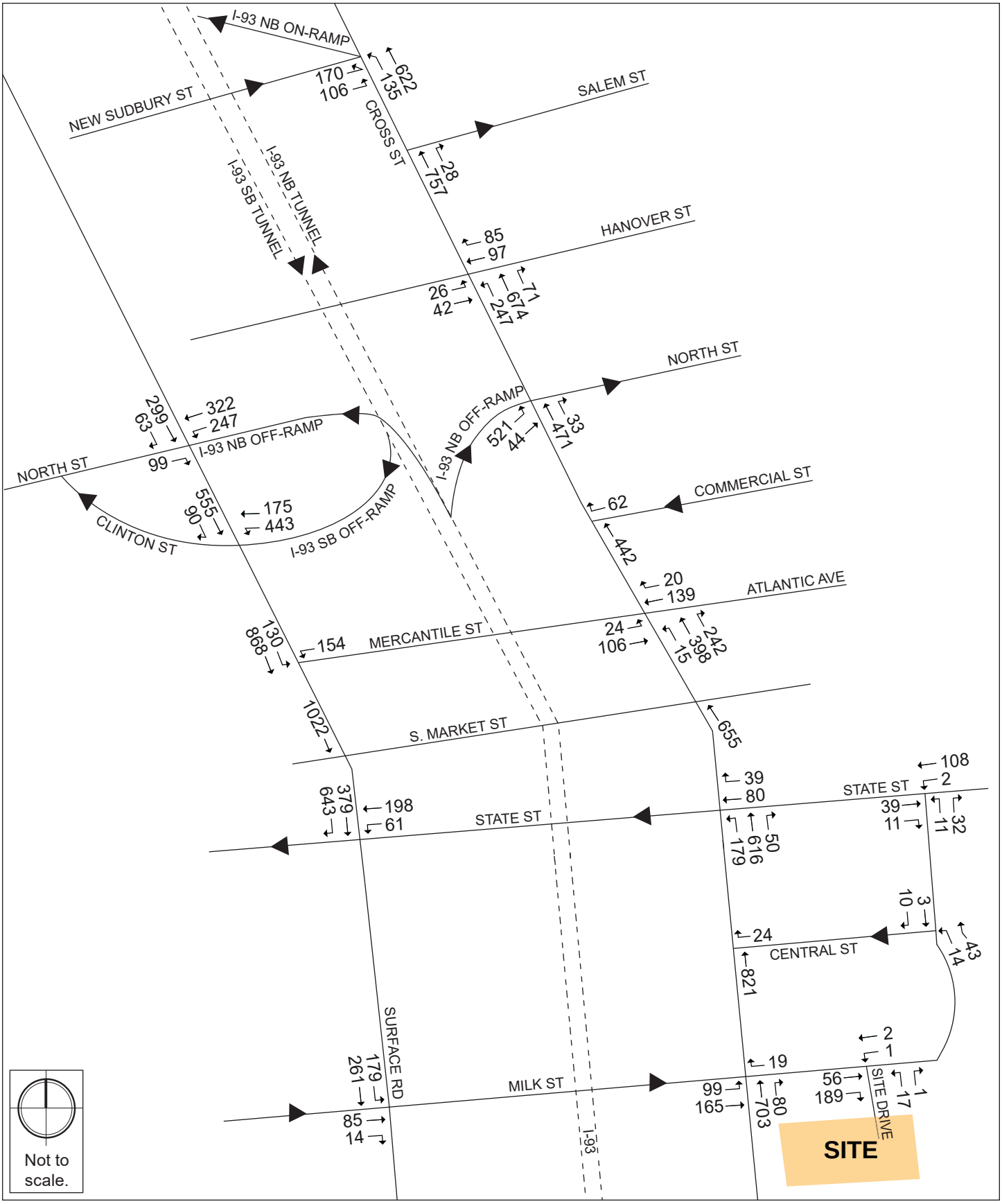

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Figure 2-5A

Existing Condition Traffic olumes, Weekday a.m. Peak Hour

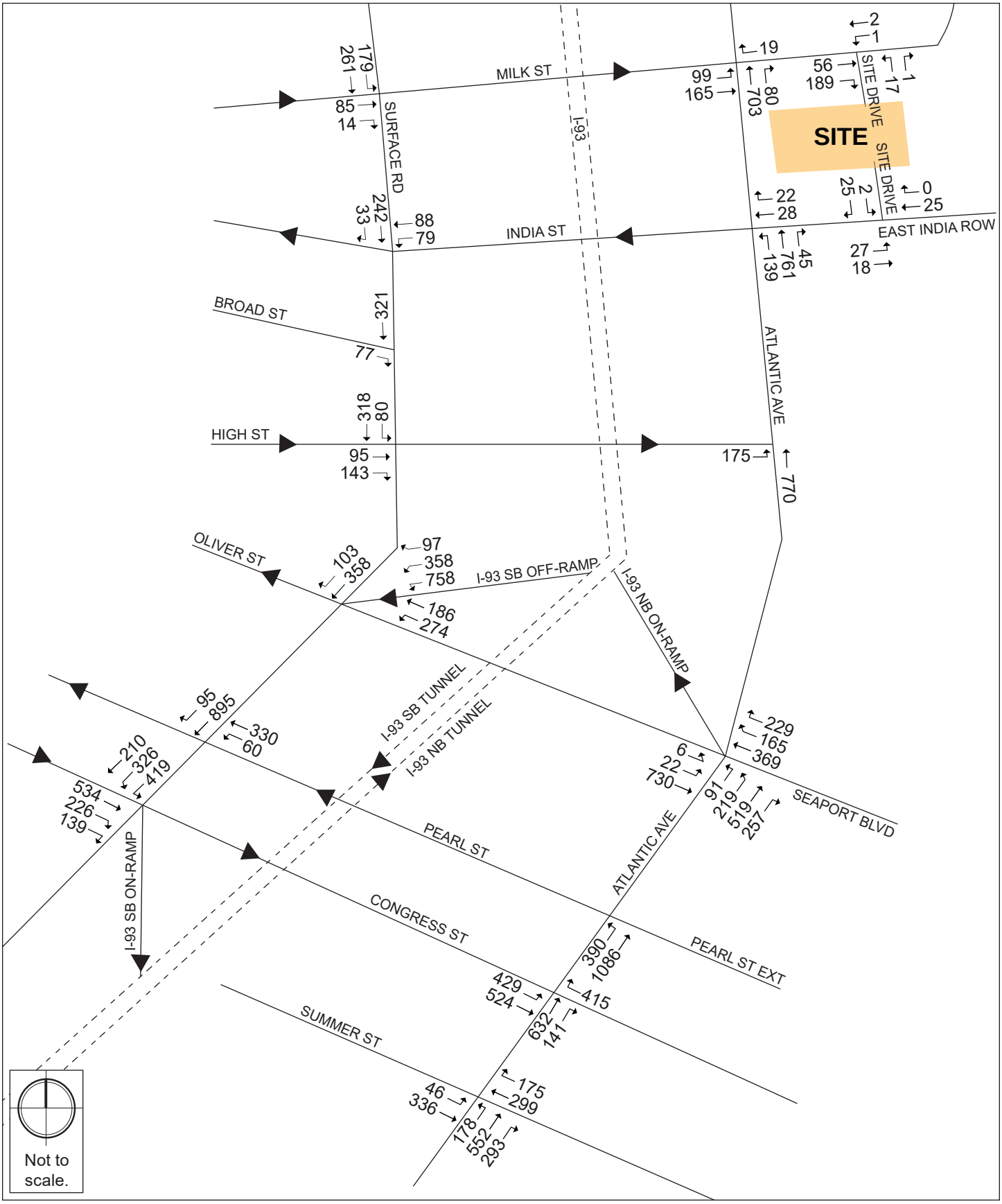

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Figure 2-5B
Existing Condition Traffic olumes, Weekday a.m. Peak Hour

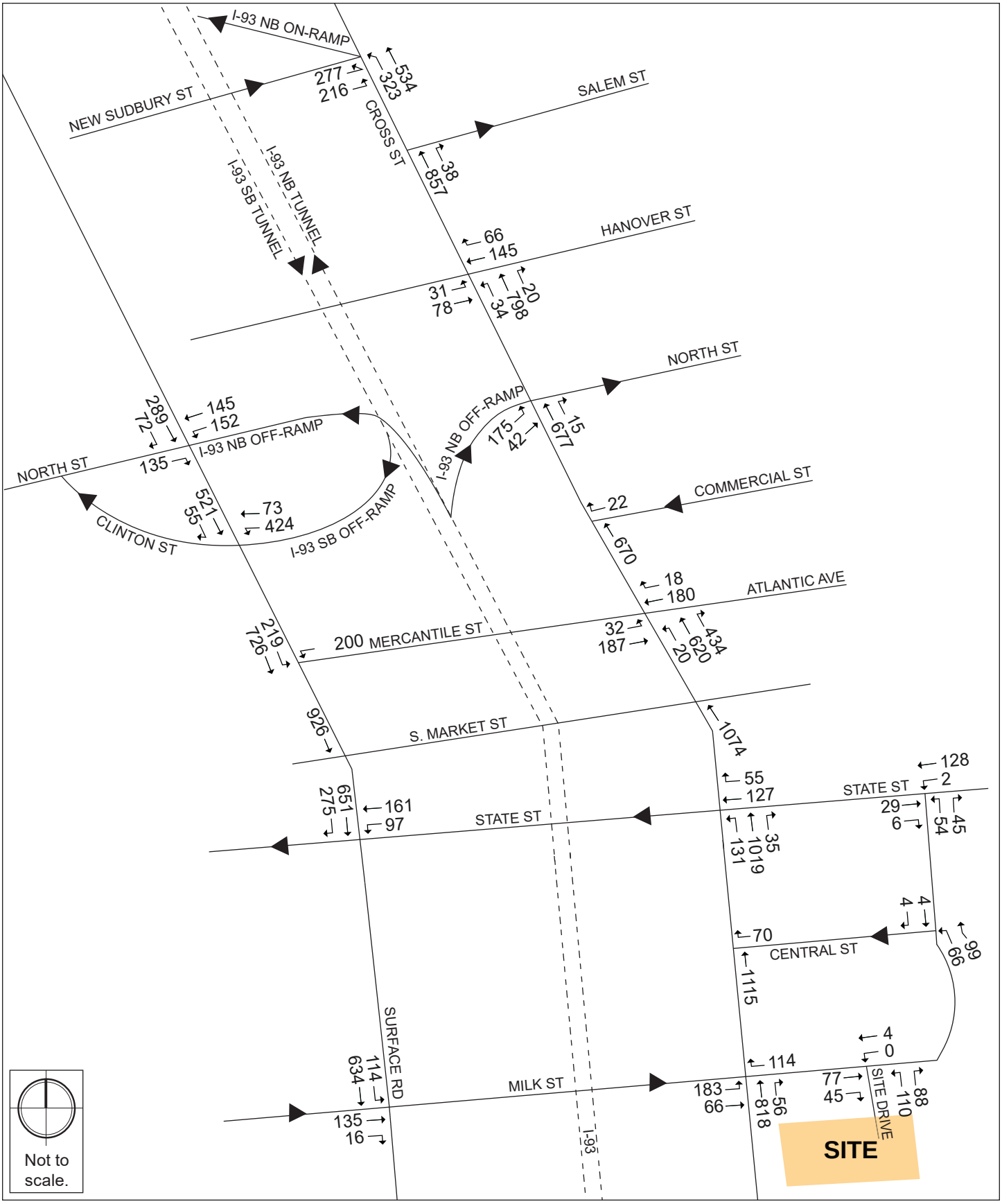

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Figure 2-6A

Existing Condition Traffic olumes, Weekday p.m. Peak Hour

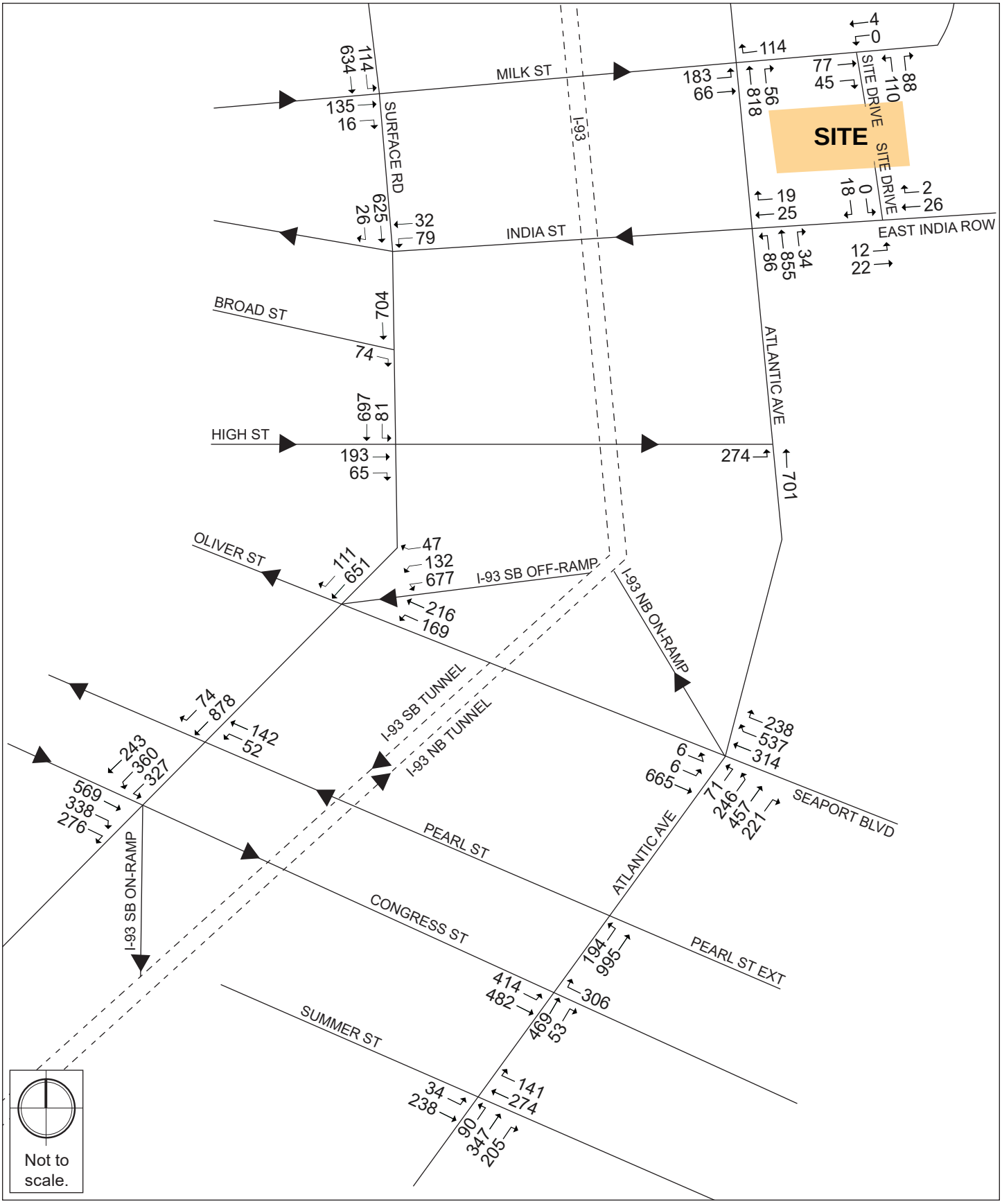

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Figure 2-6B

Existing Condition Traffic olumes, Weekday p.m. Peak Hour

located at the signalized intersection with Milk Street (adjacent to the Site) or at the unsignalized intersection of Milk Street/Site Driveway. Wheelchair ramps are typically provided along all intersections and many in the area have recently been reconstructed by MassDOT as part of mitigation for the Big Dig.

To determine the amount of pedestrian activity within the study area, pedestrian counts were conducted concurrent with the TMCs on Tuesday, June 19, 2018 at the study area intersections and are presented in Figure 2-7A and Figure 2-7B.

Existing Bicycle Volumes and Accommodations

In recent years, bicycle use has increased dramatically throughout the City of Boston. Within the study area, there are separated bicycle lanes along Atlantic Avenue/Cross Street and Surface Road/Purchase Street. Bicycle counts, presented in Figure 2-8A and Figure 2-8B, were conducted concurrent with the vehicular TMCs. Based on these counts, bicycle activity is high along the main corridor adjacent to the Project Site, Atlantic Avenue/Cross Street and Surface Road/Purchase Street, during both the peak hours.

The Project Site is also located in proximity to three bicycle sharing stations provided by BLUEbikes ("Hubway"). BLUEbikes is the Boston area's largest bicycle sharing service, which was launched in 2011 and currently consists of more than 3,400 shared bicycles at more than 190 stations throughout Boston, Brookline, Cambridge, and Somerville. The nearest BLUEBike stations to the Project Site are located at Surface Road at India Street, Aquarium MBTA Stop – 200 Atlantic Avenue, and Rowes Wharf at Atlantic Avenue, which are located approximately less than a five-minute walk from the Project Site. The BLUEbikes stations located in proximity to the Project Site are shown in Figure 2-9.

2.1.2.5 Existing Crash Data

Motor vehicle crash data from the MassDOT IMPACT Crash Records System and Vision Zero Boston was compiled for the most recent four-year period for which they are available (2016-2018). Table 2-2 summarized the crash rate for all 32 study area intersections. The detailed crash data summary and intersection crash rate worksheets are included in Appendix B.

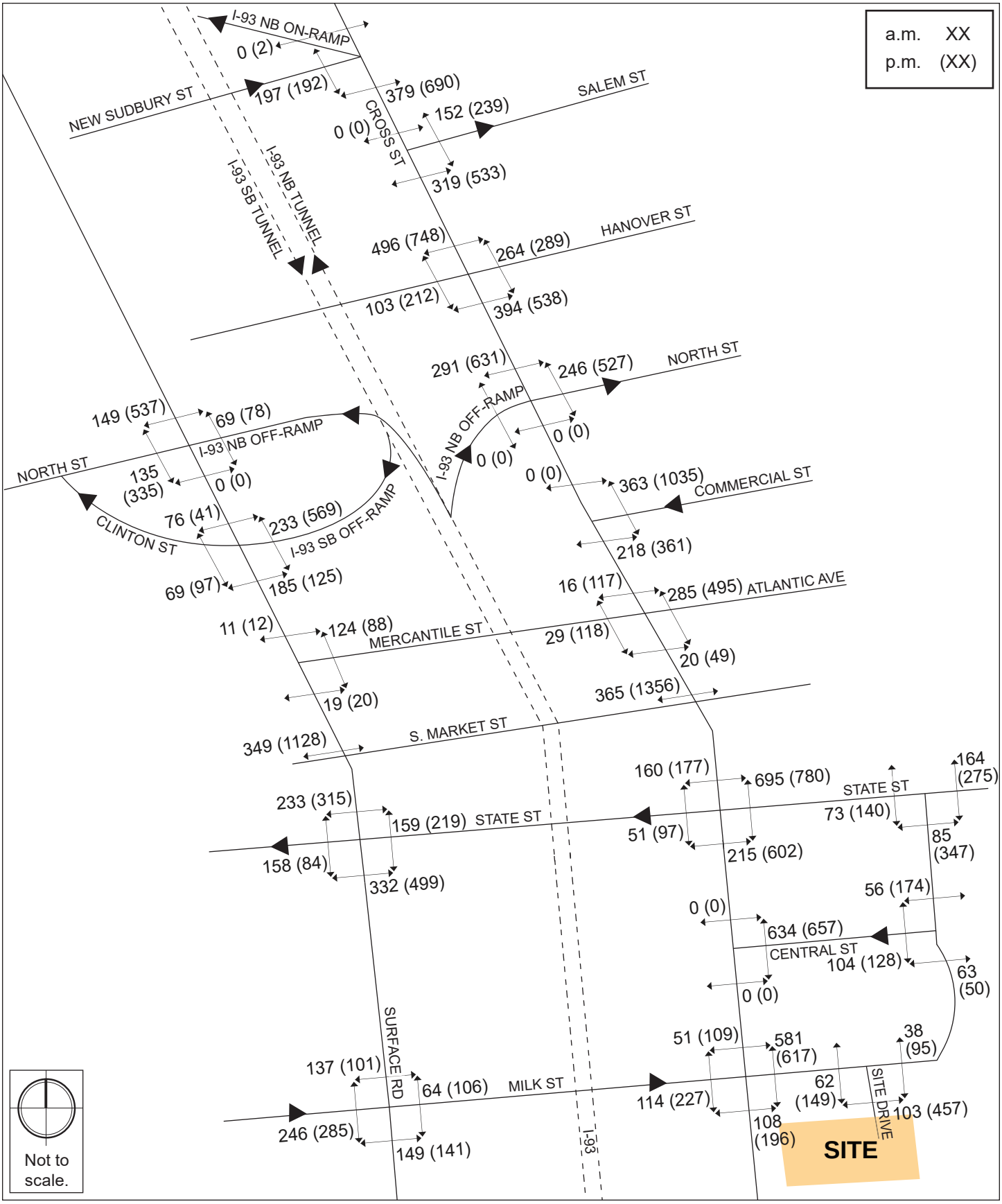

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Figure 2-7A
Existing Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hours

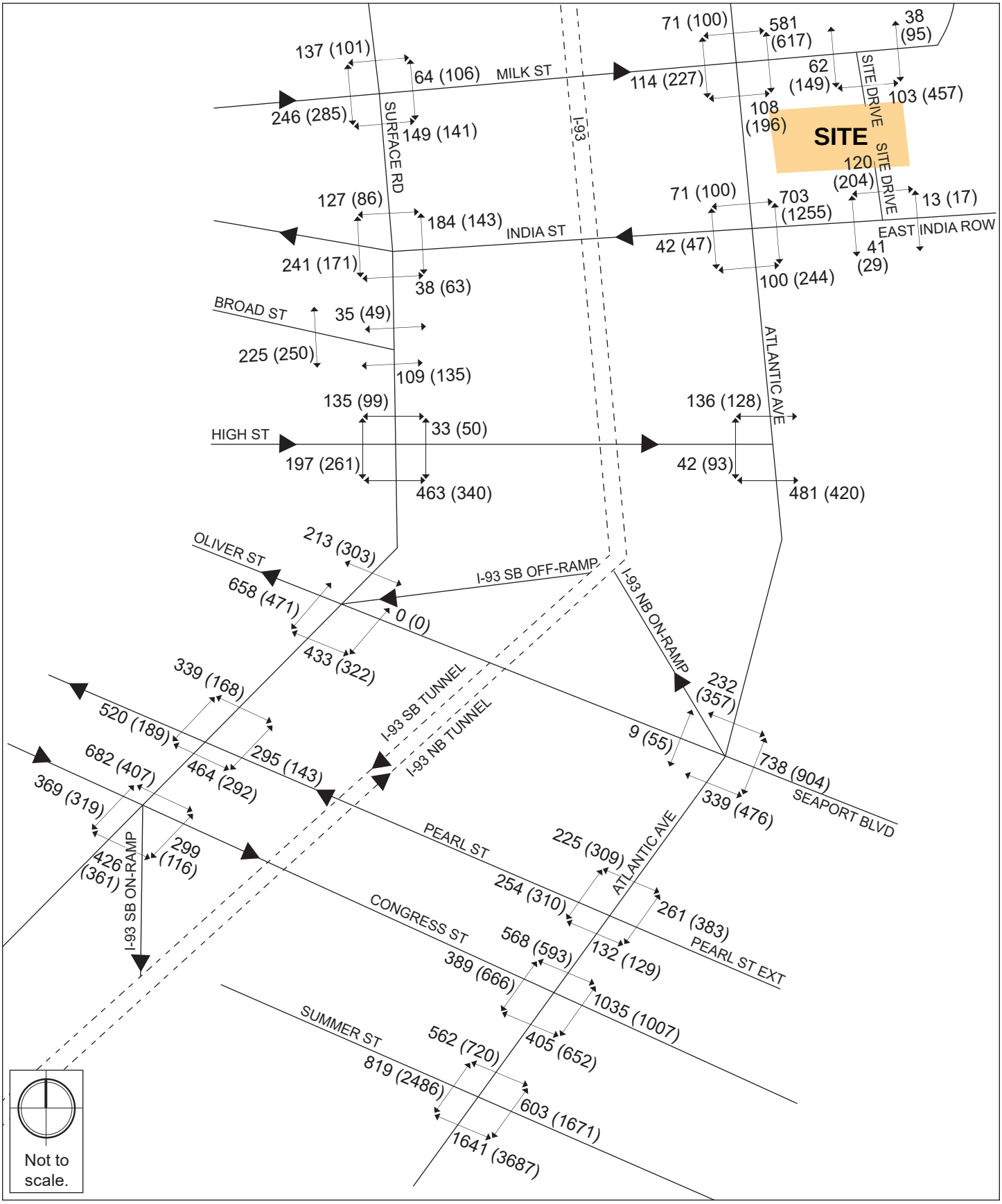

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Figure 2-7B
Existing Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hours

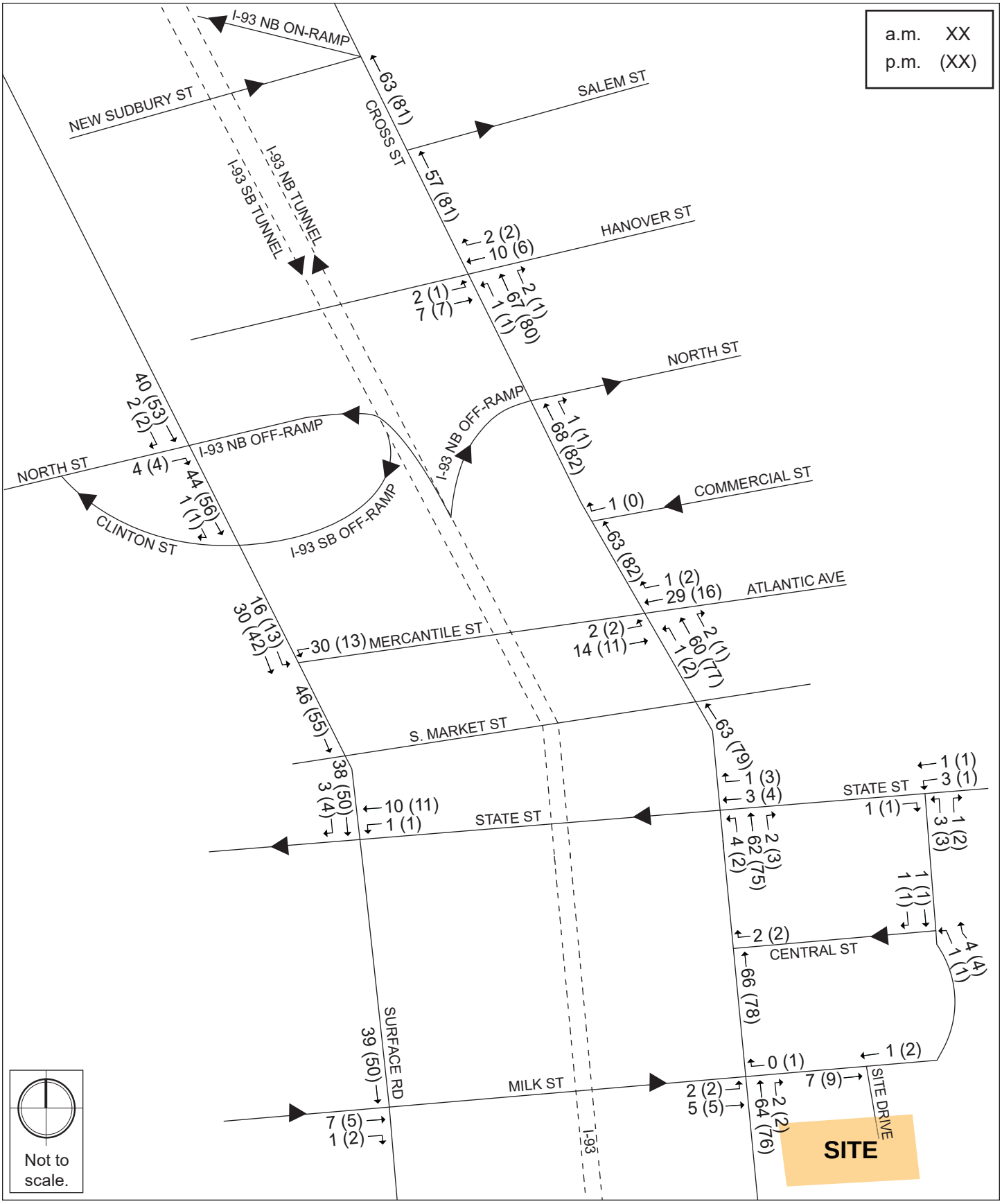

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Figure 2-8A
Existing Condition Bicycle Volumes, Weekday a.m. and p.m. Peak Hours

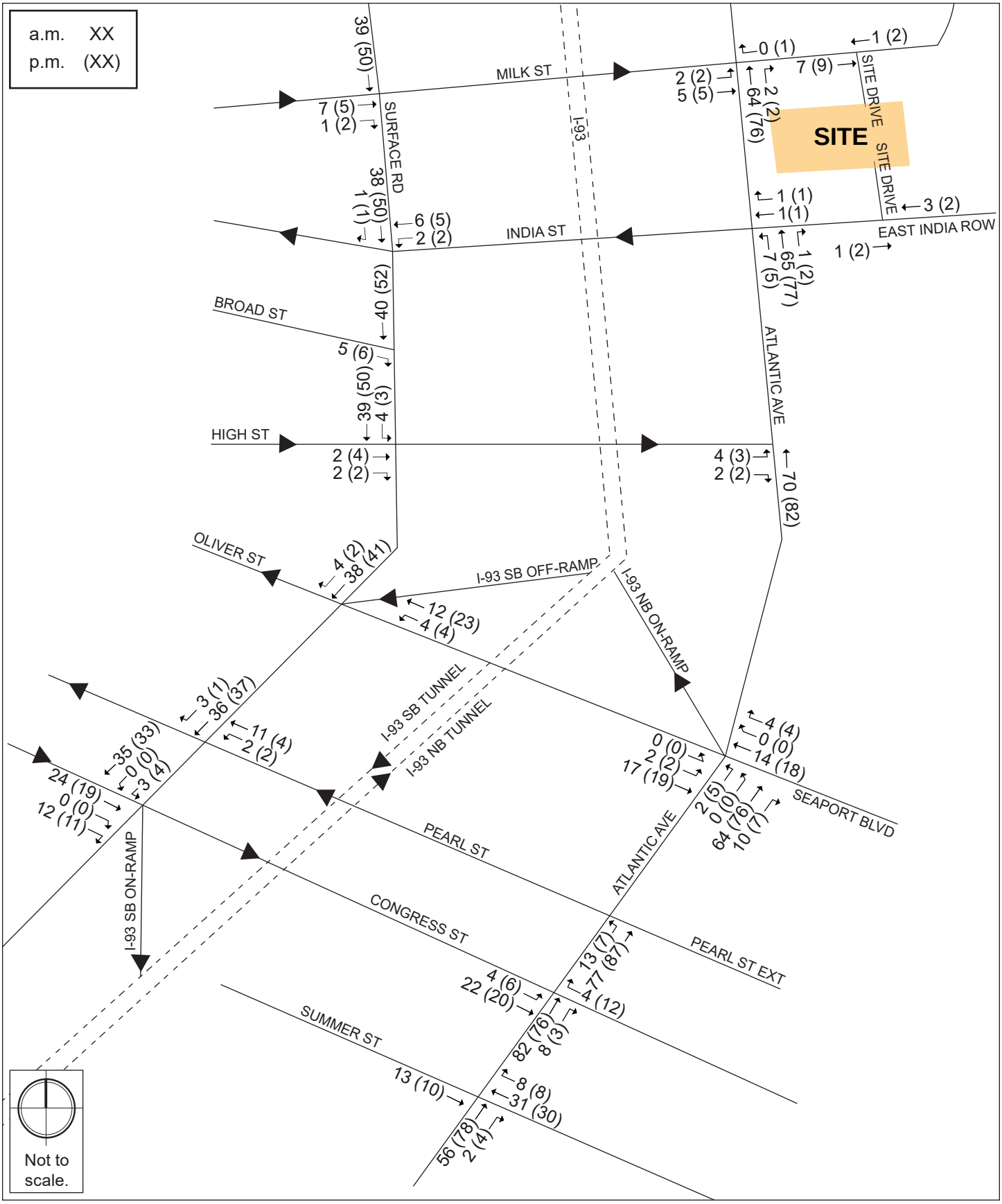

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Figure 2-8B
Existing Condition Bicycle Volumes, Weekday a.m. and p.m. Peak Hours

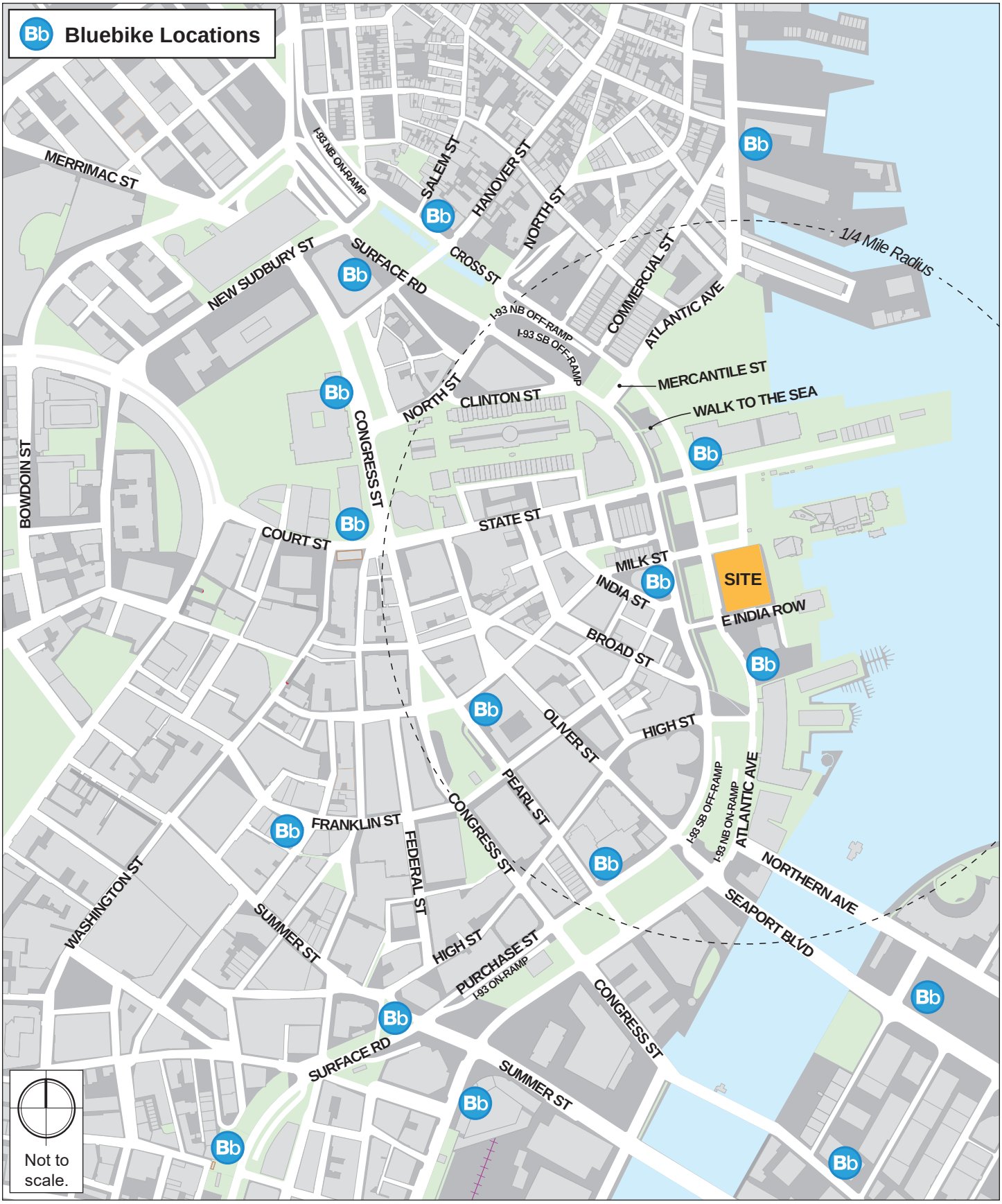

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Figure 2-9
Bicycle Sharing Locations

Table 2-2 Study Area Intersections Crash Rates

Map ID *(Figure 2-1)*	Intersection	Crash Rate
1	Milk Street / Site Driveway	0.00
2	East India Row / Site Driveway	0.00
3	Milk Street / Atlantic Avenue	0.23
4	India Street / East India Row / Atlantic Avenue	0.09
5	India Street / Surface Road	0.14
6	Milk Street / Surface Road	0.23
7	State Street / Surface Road	0.55
8	State Street / Atlantic Avenue	0.23
9	Broad Street / Surface Road	0.00
10	High Street / Surface Road	0.11
11	High Street / Parking Garage / Atlantic Avenue	0.28
12	Seaport Boulevard / Atlantic Avenue / I-93 NB On-Ramp	0.51
13	Oliver Street / Purchase Street / I-93 SB Off-Ramp	0.48
14	Pearl Street / Purchase Street	0.13
Map ID *(Figure 2-1)*	**Intersection**	**Crash Rate**
1	Milk Street / Site Driveway	0.00
2	East India Row / Site Driveway	0.00
3	Milk Street / Atlantic Avenue	0.17
4	India Street / East India Row / Atlantic Avenue	0.13
5	India Street / Surface Road	0.10
6	Milk Street / Surface Road	0.18
7	State Street / Surface Road	0.41
8	State Street / Atlantic Avenue	0.17
9	Broad Street / Surface Road	0.00
10	High Street / Surface Road	0.16
11	High Street / Parking Garage / Atlantic Avenue	0.21
12	Seaport Boulevard / Atlantic Avenue / I-93 NB On-Ramp	0.55
13	Oliver Street / Purchase Street / I-93 SB Off-Ramp	0.43
14	Pearl Street / Purchase Street	0.10
15	Pearl Street / Atlantic Avenue	0.00
16	Congress Street / Purchase Street / I-93 SB On-Ramp	0.71
17	Congress Street / Atlantic Avenue	0.00
18	Summer Street / Atlantic Avenue	0.21
19	Walk to the Sea / Surface Road	0.00
20	Walk to the Sea / Atlantic Avenue	0.00
21	Mercantile Street / Surface Road	0.00
22	Mercantile Street / Atlantic Avenue / Cross Street	0.00

Table 2-2 Study Area Intersections Crash Rates (Continued)

Map ID *(Figure 2-1)*	Intersection	Crash Rate
23	Clinton Street / I-93 SB Off-Ramp / Surface Road	0.07
24	Commercial Street / Cross Street	0.00
25	North Street / I-93 NB Off-Ramp / Surface Road	0.09
26	I-93 NB Off-Ramp / North Street / Cross Street	0.09
27	Hanover Street / Cross Street	0.60
28	Salem Street / Cross Street	0.33
29	New Sudbury Street / Cross Street / I-93 NB On-Ramp	0.30
30	Atlantic Avenue/Central Street	0.00
31	Central Street/Old Atlantic Avenue	0.00
32	State Street/Old Atlantic Avenue	0.00

As shown in Table 2-2, the crash rates at the study area intersections are below the MassDOT District 6 average crash rates for signalized intersections (0.76) and unsignalized intersections (0.58). There were 85 crashes at the 32 study area intersections over the three-year period, with no fatalities. The intersections with the two highest crash totals are Congress Street/Purchase Street/I-93 Southbound On-Ramp with 17 crashes over the three-year period and Hanover Street/Cross Street with eight crashes over the three-year period. These two intersections have crash rates of 0.71 and 0.60 crashes per million entering vehicles, respectively. Both intersections are high-volume (between 12,000 and 22,000 entering vehicles daily) and have multiple lanes on each approach. These factors can contribute to sudden lane changes as well as stop-and-go traffic.

Actual lane utilization may differ from intended lane utilization, leading to increased driver confusion.

2.1.2.6 Existing Public Transportation

The Project Site is located in Boston's Downtown Waterfront District and is well situated to take advantage of Boston's public transportation system. The Project Site is one block away from the MBTA Aquarium Station, which provides access to Blue Line subway service. Within a quarter-mile radius of the Project Site is the MBTA State Street Station, which provides access to both the Orange Line and and the Blue Line. The MBTA bus routes 4, 92, and 93 have bus stops approximately one-third of a mile to west at the Congress Street/State Street intersection. Also, within one block of the Project site are two MBTA commuter ferries: the Charlestown Ferry and the Hingham/Hull Ferry.

South Station, which provides connections to the MBTA Red and Silver Lines, as well as commuter rail service to the south, west and southwestern suburbs, is slightly farther from the site but is within easy walking distance along the Rose Kennedy Greenway. North Station, located two stops

north on the Orange Line and is also within walking distance along the Greenway, provides access to the MBTA's Orange and Green Lines and regional commuter rail trains serving the northern and northwestern suburbs of Boston.

Figure 2-10 shows a map of all public transportation service located in close proximity of the Project Site, and Table 2-3 provides a brief summary of all routes.

Table 2-3 Existing Public Transportation

Route	Description	Peak-hour Headway (in minutes)	Weekday Service Duration
Rapid Transit			
Blue Line	Bowdoin – Wonderland	5	5:13 a.m. – 1:00 a.m.
Orange Line	Forest Hills – Oak Grove	6	5:16 a.m. – 12:30 a.m.
Local Bus Routes			
4	North Station – Tide Street	15-20	6:19 a.m. – 7:00 p.m.
92	Sullivan Station – Downtown via Main Street	15-21	5:05 a.m. – 10:10 p.m.
93	Sullivan Station – Downtown via Bunker Hill Street	8-12	4:50 a.m. – 1:10 a.m.
352	State Street – Burlington (Express)	20-30	5:50 a.m. – 9:02 a.m. 3:20 p.m. – 8:15 p.m.
354	State Street – Woburn (Express)	20-25	5:35 a.m. – 8:15 p.m.
Ferry Routes			
Charlestown	Boston (Long Wharf) – Charlestown	15	6:45 a.m. – 8:15 p.m.
Hingham/Hull	Hingham – Hull – Logan Airport – Boston (Long Wharf)	30	5:40 a.m. – 10:55 p.m.
Hingham/Hull	Boston (Long Wharf) – Hingham	20	6:00 a.m. – 8:30 p.m.
Headway is the time between service, Headways vary. Source: MBTA October 2019.			

2.1.2.7 Existing Transit Ridership

As previously noted, the Project Site is in close proximity to the MBTA Aquarium Station, which provides access to Blue Line subway service. The MBTA Blue Line is a rail transit that serves neighborhoods from Revere (Wonderland) to the east through Boston (Bowdoin) to the west. The specific station that the MBTA Blue Line serves for the Project is Aquarium. For the purpose of this analysis, the maximum hourly rail load of the Blue Line at the Project Site from both directions was analyzed.

To determine the existing ridership volumes along the Blue Line, the most recent available MBTA Rail Flow data (Spring 2018) was used. This is summarized in Section 3.6 and the detailed transit data is provided in Appendix B.

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Figure 2-10
Public Transportation

2.1.3 No-Build (2026) Condition

The No-Build (2026) 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 planned specific developments, and planned infrastructure improvements that will affect travel patterns throughout the study area. These infrastructure improvements include roadway, public transportation, pedestrian and bicycle improvements.

2.1.3.1 Background Traffic Growth

The methodology to account for future traffic growth, independent of the Project, consists of two parts. The first part of the methodology accounts for general background traffic growth that may be affected by changes in demographics, automobile usage, and automobile ownership. Based on a review of recent and historic traffic data collected for nearby projects and to account for any additional unforeseen traffic growth, a one-half percent per year annual traffic growth rate was used to develop the future conditions traffic volumes.

2.1.3.2 Specific Development Traffic Growth

The second part of the methodology identifies any specific planned developments that are expected to affect traffic patterns throughout the study area within the future analysis time horizon.

Figure 2-11 shows the specific development projects in the vicinity of the study area, which are summarized below:

150 Kneeland Street – This project is located to the south of the Project Site and will consist of the demolition of two one- and three- story buildings and the construction of an approximately 230-room hotel. This project is approved by the BPDA.

Dock Square Garage – This project is located to the northwest of the Project Site and is contemplated to consist of 195 residential units, a 7,000-sf reduction in retail/restaurant space, and a reduction in parking spaces from 698 to 682 parking spaces. This project has received BPDA Board approval.

125 Lincoln Street – This project is located to the southwest of the Project Site and will consist of the replacement of an existing parking garage with a new, approximately 625,000 sf office building with retail and publicly accessible ground floor uses. A PNF has been filed and this project is currently under Article 80 review.

Haymarket Hotel – This project is located to the northwest of the Project Site and will consist of the construction of an approximately 225-room hotel and 9,600 sf of retail/restaurant space. This project is approved by the BPDA.

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Figure 2-11
Background Projects

55 India – This project is located to the west of the Project Site and calls for the construction of 44 residential units with 4,000 square feet of ground-floor retail. This project has been approved by the BPDA.

115 Winthrop Square – This project is located to the southwest of the Project Site and proposes to construct approximately 750,000 sf of office space, 500 residential units, 31,000 sf of restaurant/retail, and 550 below-grade parking spaces. This project has been board approved, though a Notice of Project ("NPC") has been filed to address modest program changes.

South Station Air Rights – This project is located to the south of the Project Site and consists of the construction of approximately 435-550 residential units, 360 hotel rooms, 1.2 million sf office space, 35,000 sf of retail, and 895 parking spaces in a five-story parking garage. This project has been board approved and is scheduled to commence construction in 2020.

110 Broad Street – This project is located to the southwest of the Project Site and calls for the restoration of the historic Bulfinch Building, demolition of a five-story commercial building, and construction of a 12-story building containing approximately 52 residential units, 3,500 sf of commercial/retail space and 35 parking spaces. This project was under construction at the time of the traffic data collection and its impact is therefore not included in the Existing Condition.

Bulfinch Crossing – This project is located to the northwest of the Project Site and, at full build, will consist of the deconstruction of the existing garage and construction of 771 residential units, 204 hotel rooms, 1.3 million sf of office space, 82,500 sf of retail, and 1,159 parking spaces. This project is currently under construction.

Boston Garden Phase II (The Hub on Causeway) – This project is located to the northwest of the Project Site and will consist of the construction of a residential tower consisting of 440 residential units and a 269-room hotel. The project is currently under construction and was not occupied at the time of the traffic data collection.

Garden Garage – This project is located to the northwest of the Project Site and will consist of the construction of a 44-story residential building with 470 residential units, 2,300 sf of retail space and 830 parking spaces. The project is currently under construction

Seaport, South Boston Waterfront – This area is being redeveloped through multiple projects. There are 3 main PDA plans for the area north of historic Fort Point and east of Fort Point Channel including Seaport Square, Fan Pier, and Pier 4. These projects are located to the southeast of the Project Site and consists of approximately 11.5 million square feet MSF of mixed-use development, including residential space, office space, hotel space, and retail, restaurant, and entertainment space. These projects have been approved. Multiple buildings were occupied prior to the traffic data collection and therefore included in the Existing Condtion. A few buildings were then or now under construction and more still have yet to begin construction. The traffic associated with the buildings that were not occupied at the time of the traffic data collection are included in the No Build Condition.

2.1.3.3 Proposed Infrastructure Improvements

A review of planned improvements to roadway, transit, bicycle, and pedestrian facilities was conducted to determine if there are any nearby improvement projects in the vicinity of the study area. Based on this review, proposed infrastructure improvements that are mitigation measures for other approved developments were found to include changes to some of the study area intersections. These measures include signal equipment upgrades, signal timing improvements, and physical geometric improvements. The improvements will have a positive impact for all modes of travel in the area. These improvements have been incorporated into the future analysis, where appropriate.

2.1.3.4 No-Build (2026) Condition Traffic Volumes

The one-half percent per year annual growth rate, compounded annually, was applied to the Existing Condition traffic volumes, then the traffic volumes associated with the background development projects were added to develop the No-Build (2026) Condition traffic volumes. The No-Build (2026) Condition weekday a.m. peak hour and p.m. peak hour traffic volumes are shown on Figures 2-12A/Figure 2-12B and Figure 2-13A/Figure 2-13B, respectively.

2.1.3.5 No-Build (2026) Condition Transit Ridership

Growth rates for transit are published in the Central Transportation Planning Staff's ("CTPS") Long-range Transportation Plan ("LRTP") document, *Destination 2040*. In this document, yearly growth rate of transit ridership is projected for all transit trip types including local bus, bus rapid transit, and rapid rail transit. The yearly projected growth rate for rapid rail transit is 0.70 %. This growth rate was applied to the existing 2018 transit data for eight years to establish a future 2026 transit ridership No-Build Condition.

Future Transit Infrastructure Improvements

MBTA's *Focus40* document outlines planned improvements through 2023 and beyond to 2040 for all aspects of the transit system. MBTA outlines various capacity improvements for the Blue Line including signal improvements, increased train sets, and a Red-Blue connector. Since the timing and effect on capacity of these improvements is not yet known at this time, the future capacities were not increased to provide a conservative estimate for transit operations.

2.1.4 Build (2026) Condition

As previously summarized, the Project will consist of approximately 200 residential units, approximately 538,000 sf of office space, approximately 42,000 sf of retail and other public amenities, and approximately 1,100 parking spaces to be provided in an underground garage. Additionally, covered, secure storage for approximately 376 bicycles will be provided on the Project Site.

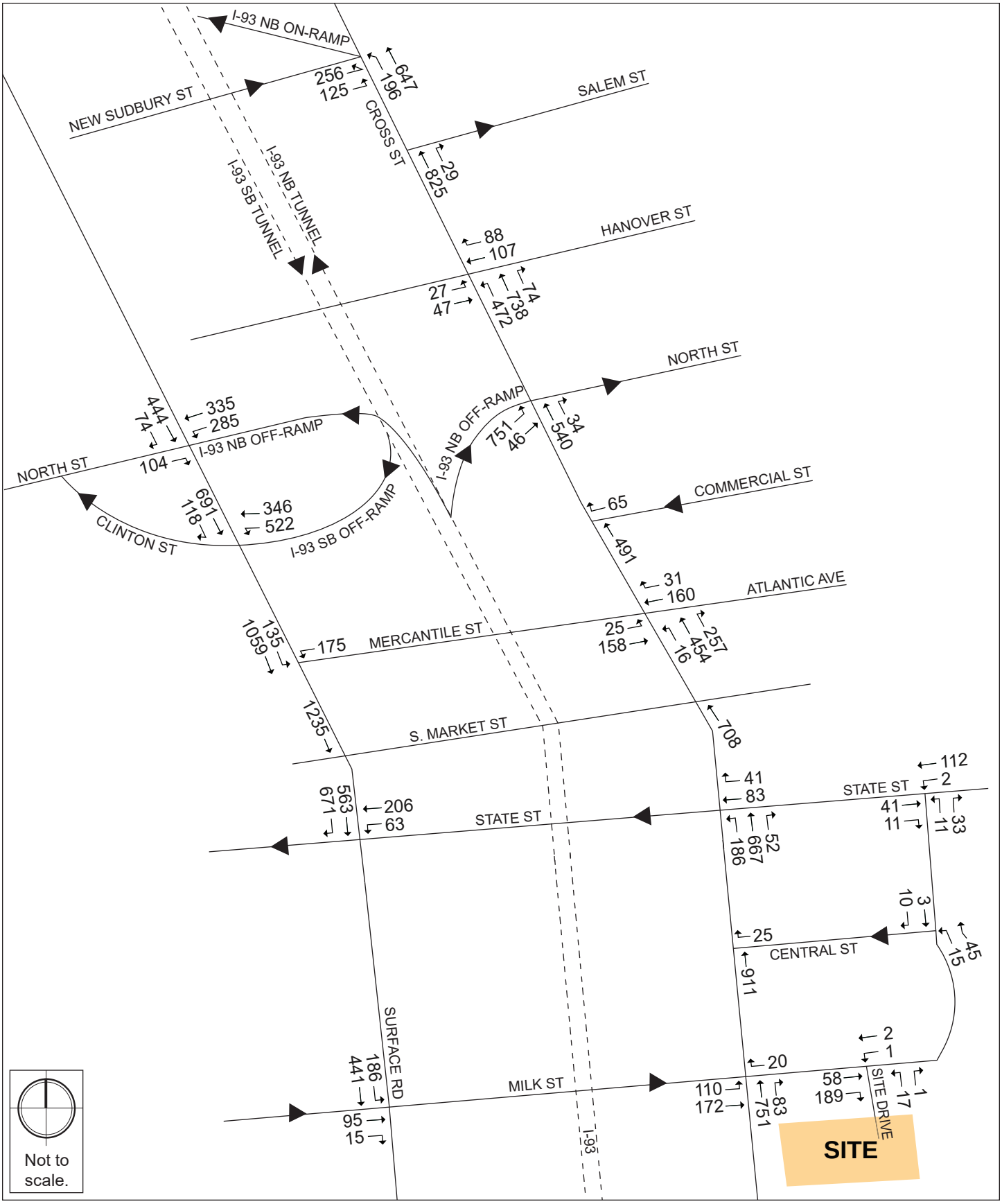

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Figure 2-12A

No-Build (2026) Condition Traffic olumes, Weekday a.m. Peak Hour

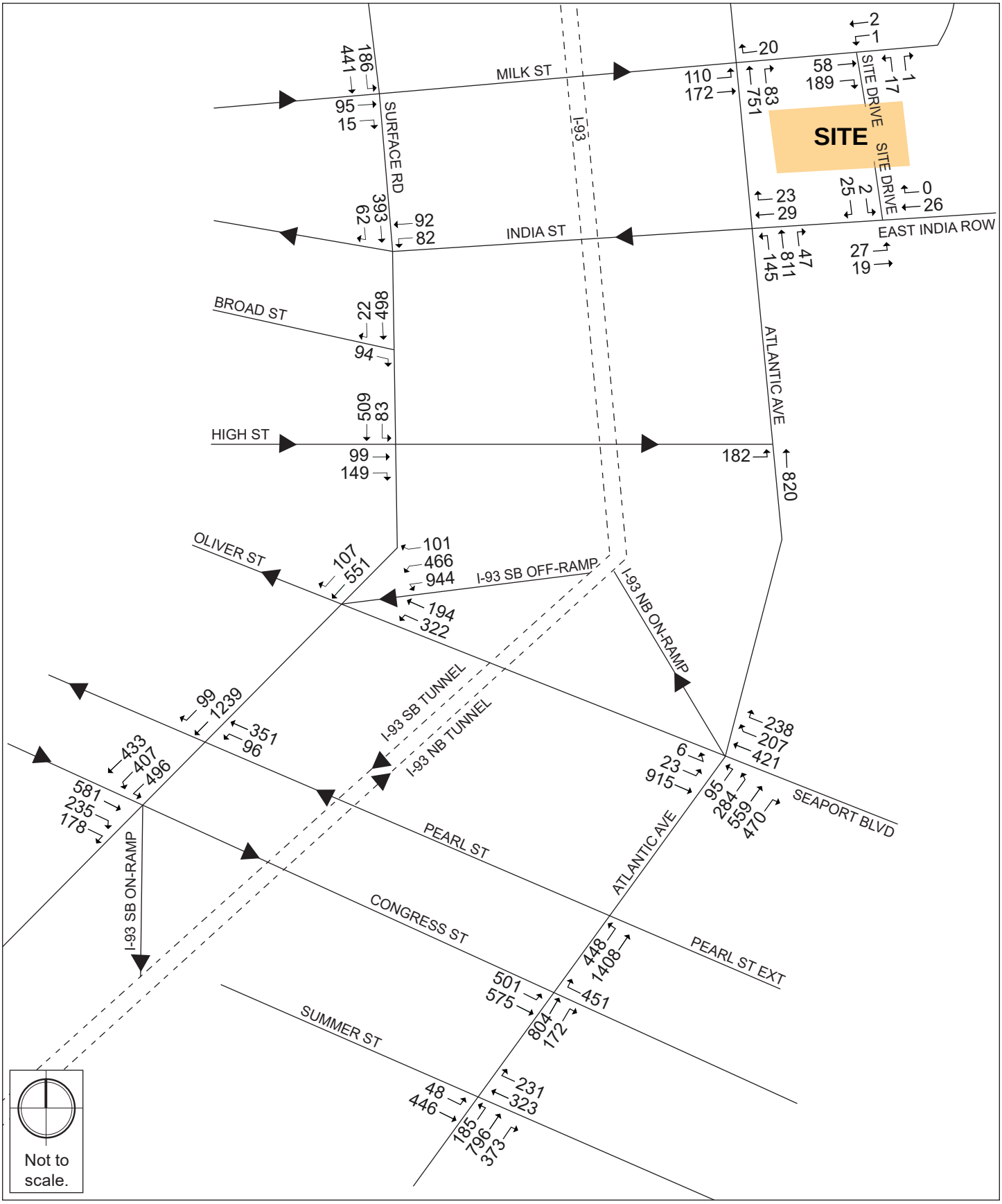

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Figure 2-12B

No-Build (2026) Condition Traffic olumes, Weekday a.m. Peak Hour

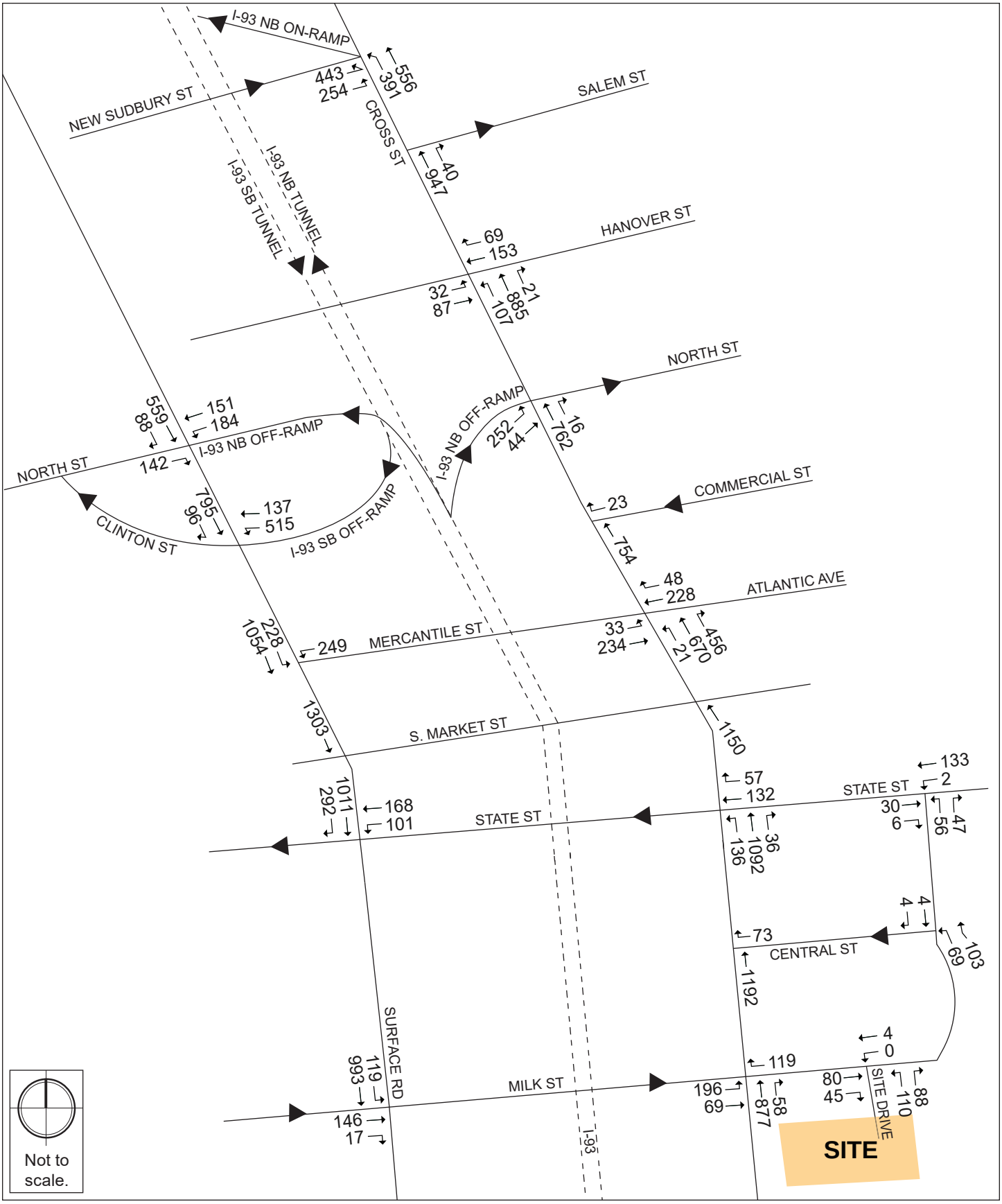

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Figure 2-13A

No-Build (2026) Condition Traffic olumes, Weekday p.m. Peak Hour

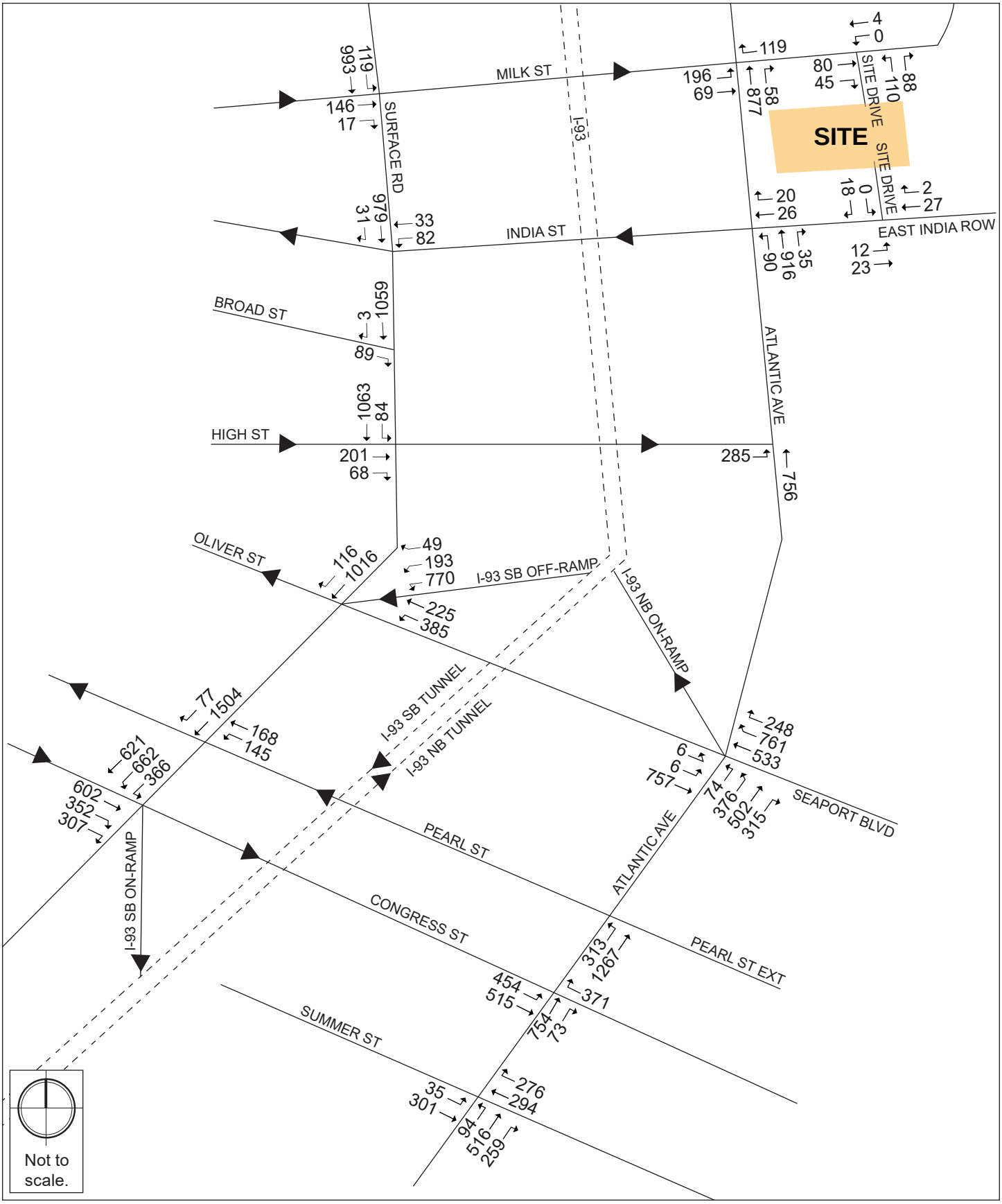

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Figure 2-13B

No-Build (2026) Condition Traffic olumes, Weekday p.m. Peak Hous

As noted in Sections 2.1.5.4 and 2.1.8, below, the mitigation measures will not only offset the the Project's traffic impacts but also improve existing traffic operations in the area. As shown on Table 2-12, under the "Build Mitigated (2026) Condition," all adjacent intersections will operate under acceptable levels of service during AM and PM peak hours, including improved conditions over the No Build Condition at the critical intersection of Atlantic Avenue and Milk Street.

2.1.4.1 Site Access and Vehicle Circulation

Pedestrian access will be provided on all sides of the building. The residential entry will be provided on the south side of the building, matching the existing uses of East India Row. Access to the office lobby will be located on the southwest corner. The main retail access will be provided from the plaza along the north side of the site, enhancing the public activity that already occurs on Central Wharf. The east side of the building will include additional retail access. Publicly accessible internal areas will connect the southwest corner to the north side allowing for public access through the building. This includes visitors that have parked in the garage, who will be able to access Central Wharf via the retail lobby on the north side of the building. The Site access plan is shown in Figure 2-14.

Based on discussions with City staff in pre-filing meetings, vehicular access to the Project Site will be provided via Atlantic Avenue and East India Row. The primary passenger vehicle access to the site will be located along Atlantic Avenue, accommodating all office, retail, Aquarium, and other public parking. All residential parking will enter the Site via an exclusive entry on East India Row. In its standard configuration, all passenger vehicles departing the Site will exit via the signalized East India Row intersection with Atlantic Avenue. However, the Atlanic Avenue driveway will be designed to accommodate exiting vehicles if deemed necessary or appropriate. The Proponent will continue to evaluate this option with input from City staff.

2.1.4.2 Project Parking

Parking for the Project will be located within the approximately 1,100-space garage. The parking resource will be managed under a shared parking arrangement. For a mixed-use development with a common parking garage, the most efficient use of the parking resource is to "share" parking rather than have assigned or dedicated parking for each land use.

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 intensify with the continued use of new mobility options (including TNCs and shuttle services, both public and private) and the advent of autonomous vehicles in the future.

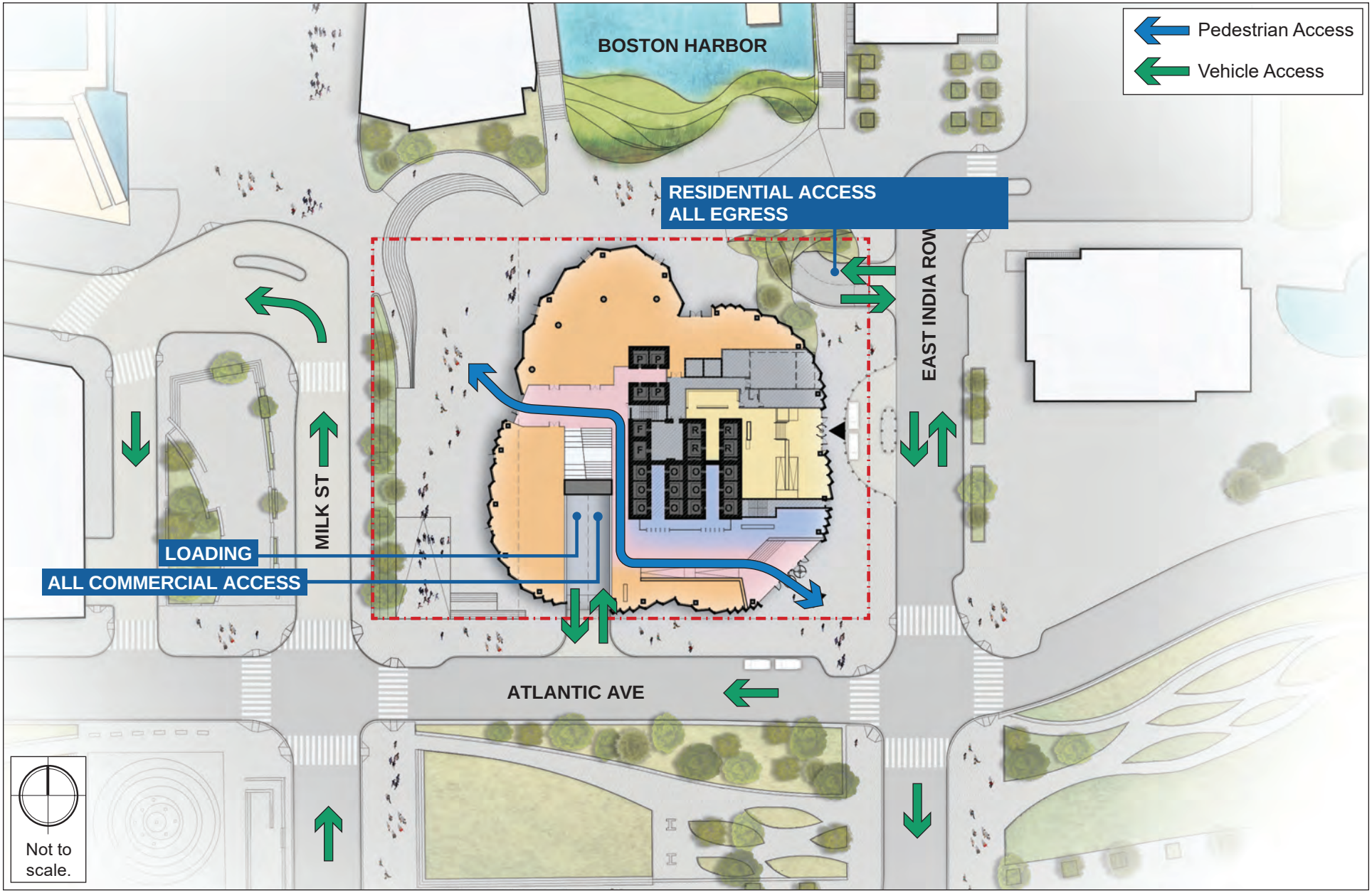

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Figure 2-14
Site Access Plan

Project Parking Demand

Parking demand for the Project has been determined based on current regulatory requirements and current and projected demand for the parking. The maximum parking ratios determined for the area by BTD in their district-based parking goals and guidelines are 0.40 spaces per 1,000 square feet of office and retail, and 1 space per residential unit. Based on current trends in parking demand in downtown Boston certain land uses exhibit lower ratios than the BTD maximum guidelines, including that for office space and residential units in the downtown core. In conformance with BTD guidelines, the proposed Project will provide 0.25 spaces/1,000 square feet of office and retail, and 0.75 spaces per residential unit.

The proposed Project's parking ratios per square foot or per unit are compared to BTD maximum guidelines in Table 2-4. These parking demands are the peak demands for each of the Project's individual land uses before shared, or managed, parking is allocated.

Table 2-4 Project Parking Demand

Land Use	Size	Max BTD Parking Ratio Guidelines	Proposed Project Parking Ratios	Proposed Project Parking Demand
Office	538,000 sf	0.40 per 1,000 sf	0.25 per 1,000 sf	135 spaces
Residential	200 units	0.50 – 1.0 per unit	0.75 per unit	150 spaces
Retail[1]	42,000 sf	0.40 per 1,000 sf	0.25 per 1,000 sf	12 spaces
Total Project Parking Demand				**297 spaces**

[1] Retail parkers are assumed to use available public parking.

2.1.4.3 Shared Parking

The parking will be shared amongst some of the land uses on site. Parking for retail uses, for example, will peak at night and on weekends, while parking demand for the office use will peak during the day.

The peak period occupancy factors used in the shared parking assessment are from multiple sources including; the Urban Land Institutes' Shared Parking, Second Edition, unpublished HSH parking surveys of residential buildings, and discussions HSH has had with office operators in the Downtown core.

As indicated in Table 2-4 above, peak parking demand for the Project would be approximately 297 dedicated spaces if not shared or managed. In addition to the Project parking demand, the garage also includes 300 spaces to accommodate Harbor Tower residents.

As presented in Table 2-5, shared or managed parking at the Project lowers the overall parking resource demand for combined land uses at the site to approximately 488 spaces during the peak weekday period, 467 spaces during the peak weeknight period, and 356 spaces for peak weekend demand. Shared parking will therefore free up parking for transient, overnight neighborhood, and commuter public parking.

Table 2-5 Project Parking Demand – Shared Parking

Land Use	Project Parking	Weekday		Weeknight		Weekend Day	
		Percent occupied	Spaces occupied	Percent occupied	Spaces occupied	Percent occupied	Spaces occupied
Office	135	95%	128	5%	7	5%	4
Residential	150	79%	119	100%	150	75%	113
Residential - HT[1]	300	79%	237	100%	300	75%	225
Retail[2]	12	40%	5	85%	10	100%	12
Total Project Parking Demand			**488**		**467**		**356**
Total Project Parking Supply			**1,100**		**1,100**		**1,100**
Available for Public Parking			**612**		**633**		**744**

[1] Unreserved parking spaces for Harbor Tower ("HT") users.

[2] Retail parkers are assumed to use available public parking.

The additional parking, approximately a minimum of 612 spaces, will be available for public parking for transient visitors to the area including Aquarium guests, other leisure visitors, and commuters. Pursuant to the DWMHP, 250 spaces will be available to Aquarium visitors specifically on weekdays between 9:00 a.m. and 6:00 p.m., and 500 spaces will be available to Aquarium visitors at all other times. In order to analyze the worst-case highest impact of the project, these parking requirements were not accounted for in the trip generation calculations. It is expected that the 250 spaces reserved for the Aquarium during a typical weekday, will not have the same peak hour traffic impact as a typical public parking space.

2.1.4.4 Loading and Service Accommodations

The loading area for the Project will be in the below grade garage. Access to and egress from the loading area will be provided via Atlantic Avenue. No access to or egress from the loading area will be provided to East India Row.

2.1.4.5 Bicycle Accommodations

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure bicycle parking for residents and employees and short-term bicycle racks for visitors. Based on BTD guidelines, the Project will supply a minimum of 200 secure bicycle parking/storage spaces for residential use within the building at a rate of one secure indoor bicycle parking space per residential unit. For commercial and office use, the Project will supply

a minimum of 176 secure bicycle parking/storage spaces within the building at a rate of 0.3 secure indoor bicycle parking spaces per 1,000 sf of development. Additional storage will be provided by outdoor bicycle racks accessible to visitors to the site in accordance with BTD guidelines.

2.1.4.6 Trip Generation Methodology

Determining the future trip generation of the 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 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 the 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 estimate the unadjusted number of vehicular trips for the Project, the following ITE land use code ("LUC") was used:

Land Use Code 222 – Multifamily Housing (High-Rise). The Multifamily Housing High-Rise LUC includes apartments, townhouses, and condominiums located within the same building with more than 10 floors. They are likely to have one or more elevators. Calculations of the number of trips use ITE's average rate per dwelling units.

Land Use Code 710 – General Office Building. A general office building houses multiple tenants and is a location where affairs of businesses, commercial, or industrial organizations are conducted. Calculations of the number of trips use ITE's average rate per 1,000 square feet.

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. A shopping center's composition is related to its market area in terms of size, location, and type of store and also provides on-site parking facilities sufficient to serve its own parking demands. Shopping center trip generation estimates are based on the gross leasable area ("GLA") of the center. Calculations of the number of trips use ITE's average rate per 1,000 square feet.

Travel Mode Share

The BTD provides vehicle, transit, and walking mode split rates for different areas of Boston. The Project is located in the easterly portion of designated Area 2 – Downtown. The unadjusted

[1] Trip Generation Manual, 10th Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.

vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration ("FHWA")[2]. The travel mode shares are shown in Table 2-6.

Table 2-6 Travel Mode Shares

Land Use	Direction	Walk/ Bicycle	Transit Share	Auto Share	Vehicle Occupancy Rate
Daily					
Residential	In	42%	30%	28%	1.18
	Out	42%	30%	28%	
Office	In	31%	43%	26%	1.18
	Out	31%	43%	26%	
Retail	In	59%	20%	21%	1.82
	Out	59%	20%	21%	
a.m. Peak Hour					
Residential	In	7%	52%	41%	1.18
	Out	51%	18%	31%	
Office	In	5%	63%	32%	1.18
	Out	26%	18%	56%	
Retail	In	14%	46%	40%	1.82
	Out	58%	10%	32%	
p.m. Peak Hour					
Residential	In	51%	18%	31%	1.18
	Out	7%	52%	41%	
Office	In	26%	18%	56%	1.18
	Out	5%	63%	32%	
Retail	In	58%	10%	32%	1.82
	Out	14%	46%	40%	

2.1.4.7 Project Trip Generation

The mode share percentages shown in Table 2-6 were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates for the Project. The trip generation for the Project by mode is shown in Table 2-7. The detailed trip generation information is provided in the Appendix B.

[2] Summary of Travel Trends: 2017 National Household Travel Survey; FHWA; Washington, D.C.; July 2018.

As shown in Table 2-7, there are 6,702 pedestrian/bicycle trips, 3,394 transit trips, and 3,838 vehicle trips throughout the day. During the a.m. Peak Hour, there are 345 pedestrian/bicycle trips (248 in and 97 out), 445 transit trips (418 in and 27 out), and 409 vehicle trips (307 in and 102 out). During the p.m. Peak Hour, there are 483 pedestrian/bicycle trips (176 in and 307 out), 492 transit trips (38 in and 454 out), and 496 vehicle trips (139 in and 357 out).

Table 2-7 Project Trip Generation

Land Use	Direction	Walk/ Bicycle	Transit Trips	Vehicle Trips
Daily				
Residential[1]	In Out	152 152	108 108	86 86
Office[2]	In Out	938 938	1,302 1,302	696 696
Retail[3]	In Out	847 847	287 287	165 165
Continuing Existing Harbor Towers Parking[4]:	In Out	0 0	0 0	195 195
Public Parking[5]	In Out	1,414 1,414	0 0	777 777
Total Daily	**In** **Out**	**3,351** **3,351**	**1,697** **1,697**	**1,919** **1,919**
a.m. Peak Hour				
Residential	In Out	1 26	9 9	6 14
Office	In Out	31 23	393 16	169 41
Retail	In Out	5 13	16 2	7 4
Continuing Existing Harbor Towers Parking:	In Out	0 0	0 0	9 24
Public Parking	In Out	211 35	0 0	116 19
Total a.m. Peak Hour	**In**	**248**	**418**	**307**
	Out	**97**	**27**	**102**

Table 2-7 Project Trip Generation (Continued)

Land Use	Direction	Walk/ Bicycle	Transit Trips	Vehicle Trips
p.m. Peak Hour				
Residential	In	13	5	6
	Out	1	9	7
Office	In	29	20	54
	Out	30	377	163
Retail	In	78	13	24
	Out	21	68	32
Continuing Existing Harbor Towers Paarking	In	0	0	24
	Out	0	0	15
Public Parking	In	56	0	31
	Out	255	0	140
Total p.m. Peak Hour	**In**	**176**	**38**	**139**
	Out	**307**	**454**	**357**

[1] 200 units, ITE LUC 222: High-Rise Residential

[2] 538,000 sf, ITE LUC 710: General Office Building

[3] 48,000 sf, ITE LUC 820: Shopping Center. Based on a previous building program before reduction in sf. ITE LUC 820: Shopping Center

[4] 300 non-dedicated spaces for Harbor Tower residents.

[5] Public Parking spaces available as calculated in Table 2-5.

Existing Site Trip Generation

Vehicle trips generated by the existing garage and accessory land uses were determined from data obtained via traffic counts conducted in June 2018.

2.1.4.8 Net New Trip Generation

The net new vehicle trips are summarized in Table 2-8 and will be the basis for future year transportation impact analysis.

Table 2-8 Net New Vehicle Trip Generation

Time Period/Direction		Existing Vehicle Trips	Proposed Vehicle Trips	Net New Vehicle Trips
Daily	In	-671	1,919	1,248
	Out	-671	1,919	1,248
	Total	**-1,342**	**3,838**	**2,496**
a.m. Peak Hour	In	-217	307	90
	Out	-45	102	57
	Total	**-262**	**409**	**147**
p.m. Peak Hour	In	-59	139	80
	Out	-216	357	141
	Total	**-275**	**496**	**221**

Estimated daily vehicle trips to and from the site are expected to increase by a total of 2,496 vehicle trips. During the a.m. Peak Hour, an estimated 147 new vehicle trips will occur (90 in and 57 out), while during the p.m. Peak Hour, 221 new vehicle trips will occur (80 in and 141 out). This results in approximately 1.5 vehicles entering the garage per minute during the morning peak hour and approximately 2 vehicles exiting the garage per minute during the evening peak hour.

2.1.4.9 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 2 – Downtown, and trip distribution patterns presented in traffic studies for nearby projects. The trip distribution for the Project is illustrated in Figure 2-15 and Figure 2-16.

2.1.4.10 Build (2026) Condition Traffic Volumes

The Net New Project-Generated trips for the a.m. and p.m. peak hours are shown in Figure 2-17A/Figure 2-17B and Figure 2-18A/Figure 2-18B, respectively. The trip assignments were added to the No-Build (2026) Condition vehicular traffic volumes to develop the Build (2026) Condition vehicular traffic volumes. The Build (2026) Condition a.m. and p.m. peak hour traffic volumes are shown on Figure 2-19A/Figure 2-19B and Figure 2-20A/Figure 2-20B, respectively.

2.1.4.11 Build (2026) Condition Transit Ridership

To assess the impact on the public transportation network, the Net New Project-Generated transit trips associated with the residential, office, and retail uses were added to the No-Build Condition ridership to establish the Build (2026) Condition ridership.

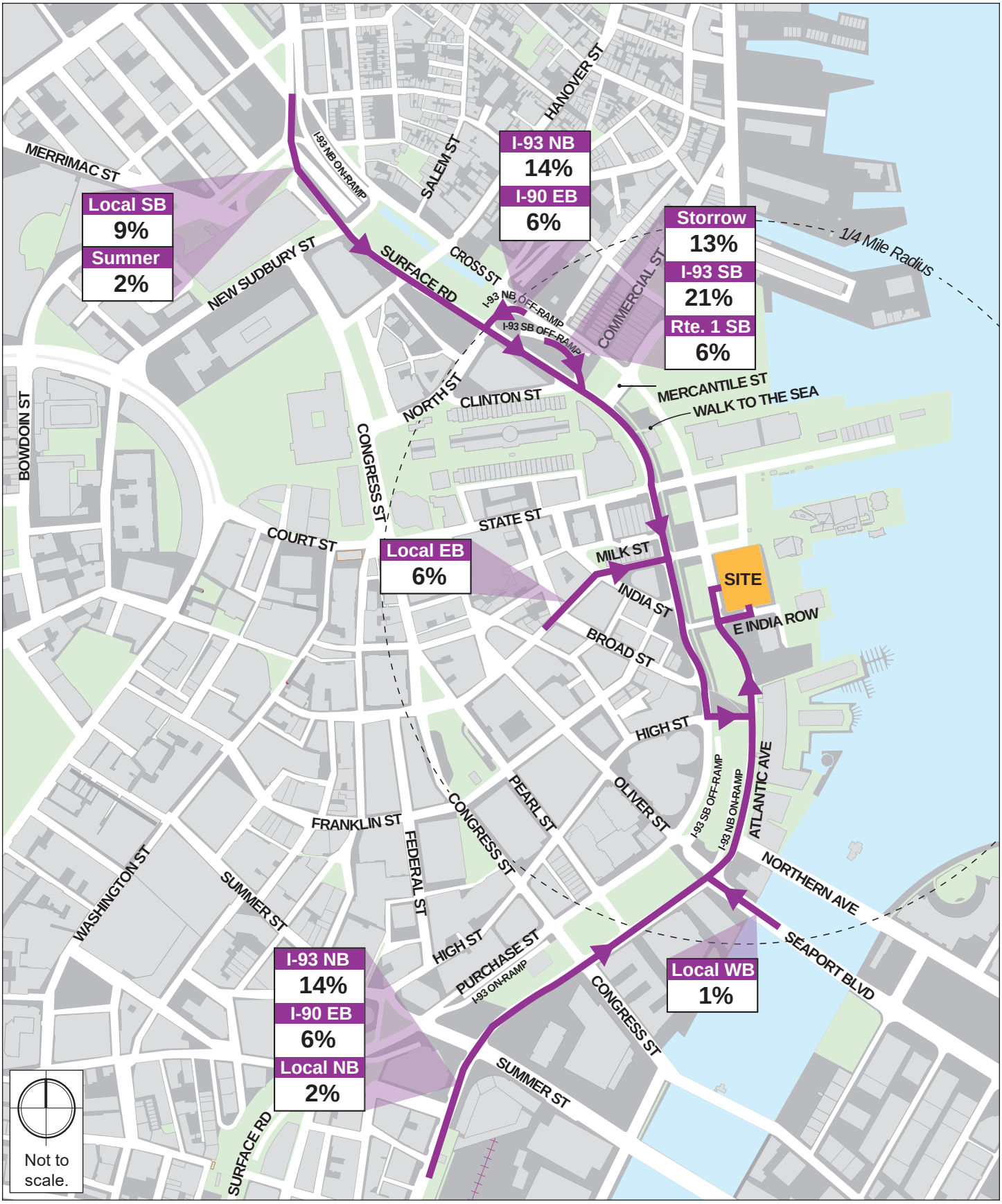

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Figure 2-15
Vehicle Trip Distribution Entering

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Figure 2-16
Vehicle Trip Distribution Exiting

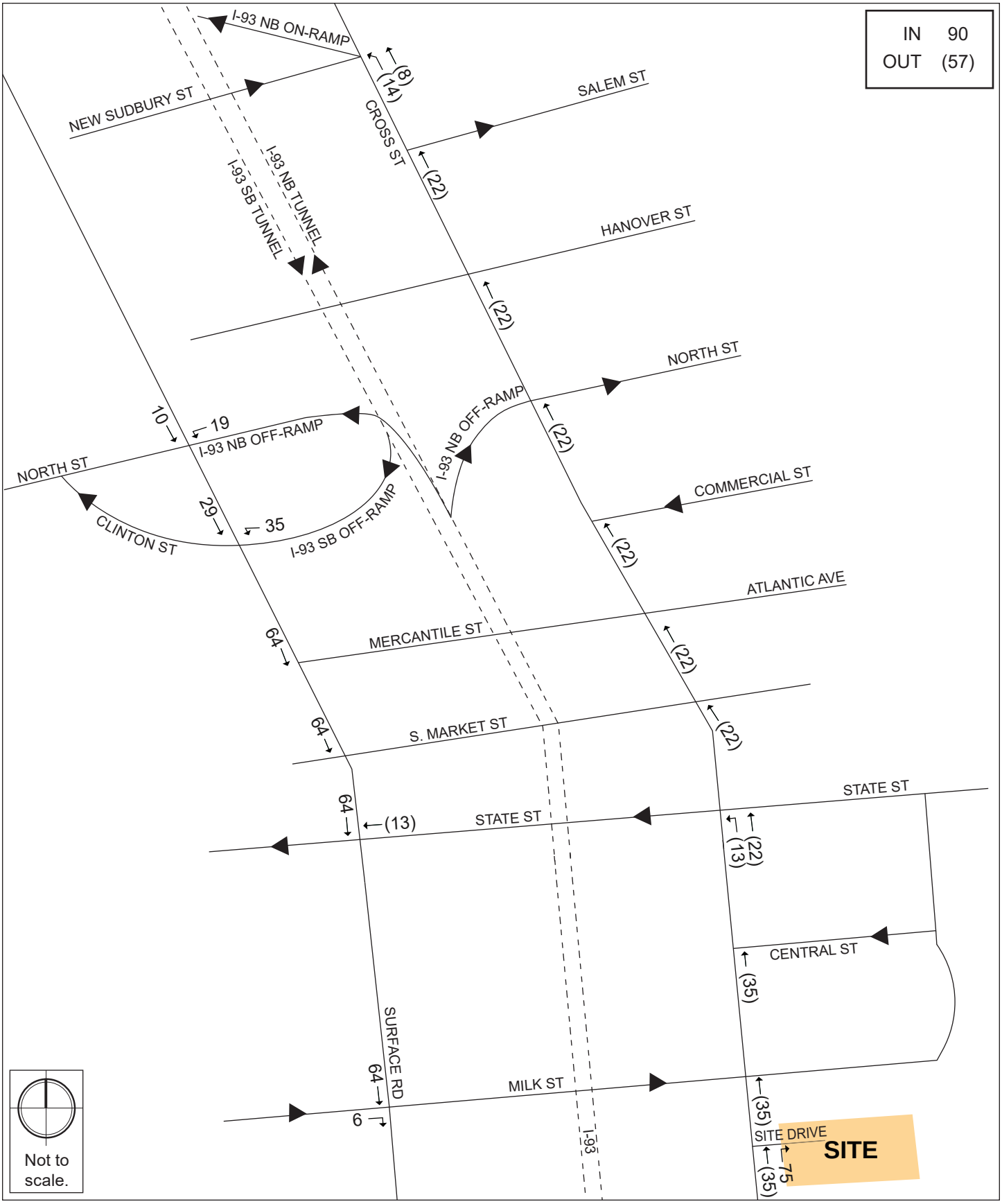

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Figure 2-17A
Net New Project-generated Vehicle Trips, Weekday a.m. Peak Hour

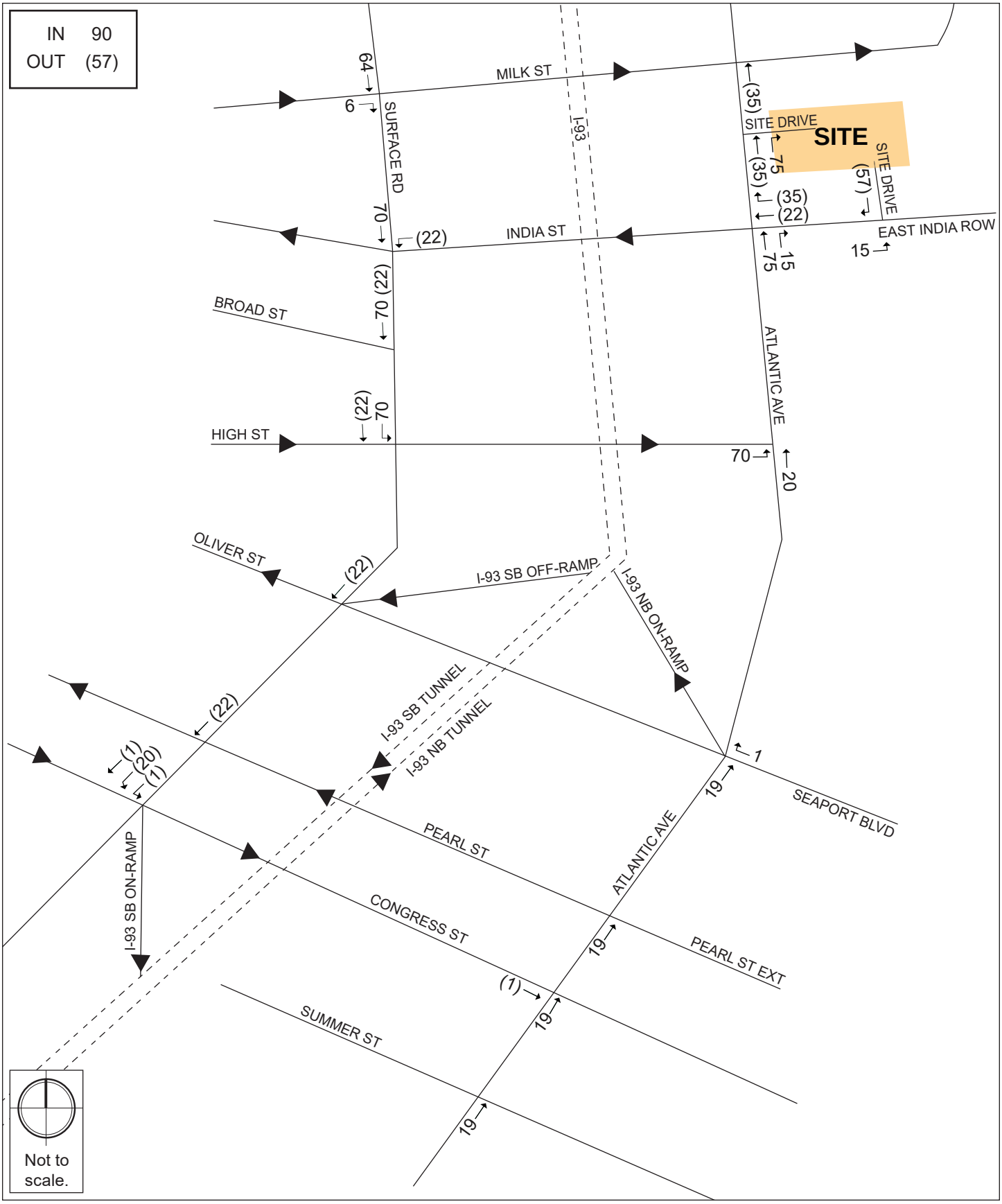

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Figure 2-17B
Net New Project-generated Vehicle Trips, Weekday a.m. Peak Hour

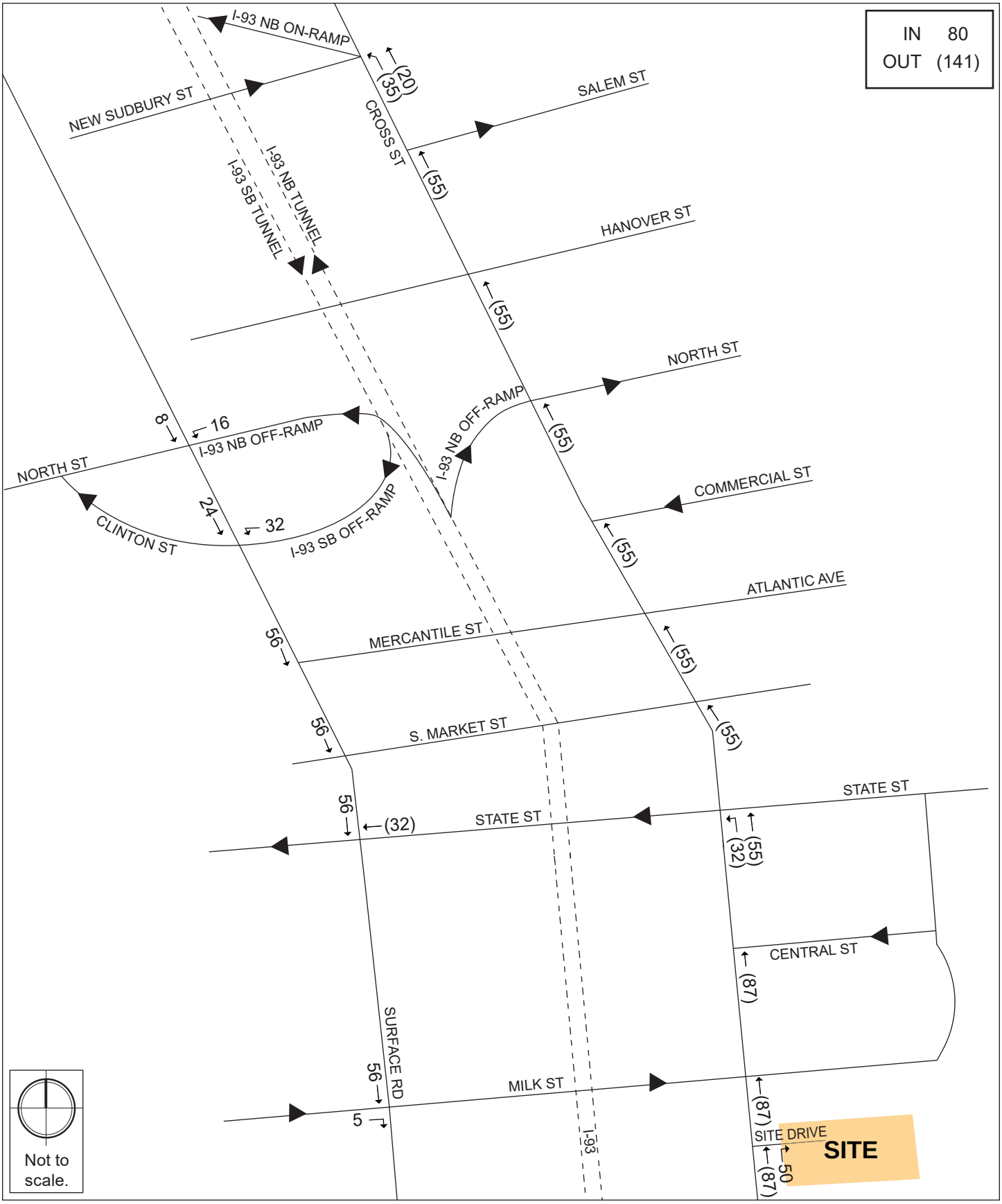

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Figure 2-18A
Net New Project-generated Vehicle Trips, Weekday p.m. Peak Hour

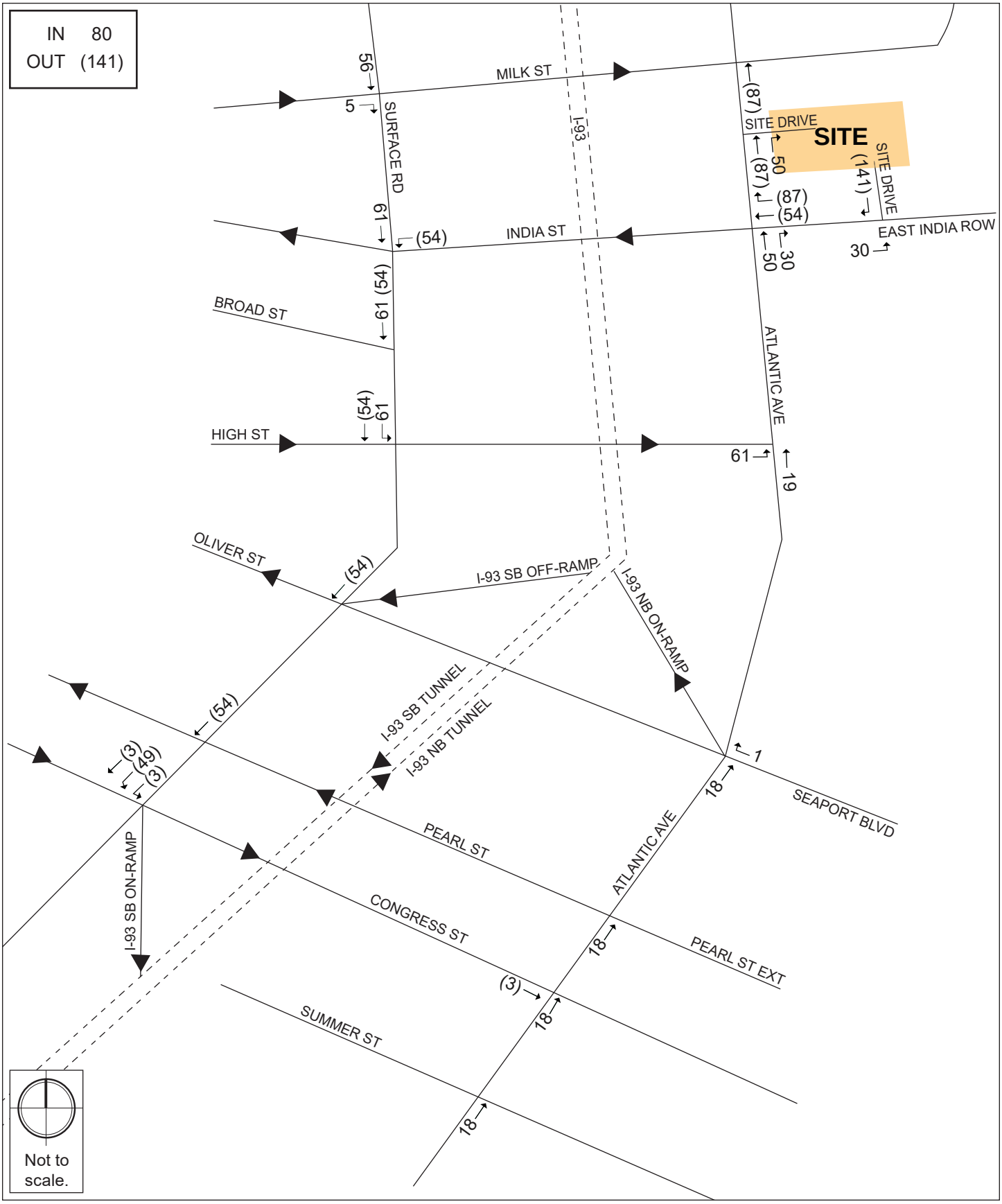

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Figure 2-18B
Net New Project-generated Vehicle Trips, Weekday p.m. Peak Hour

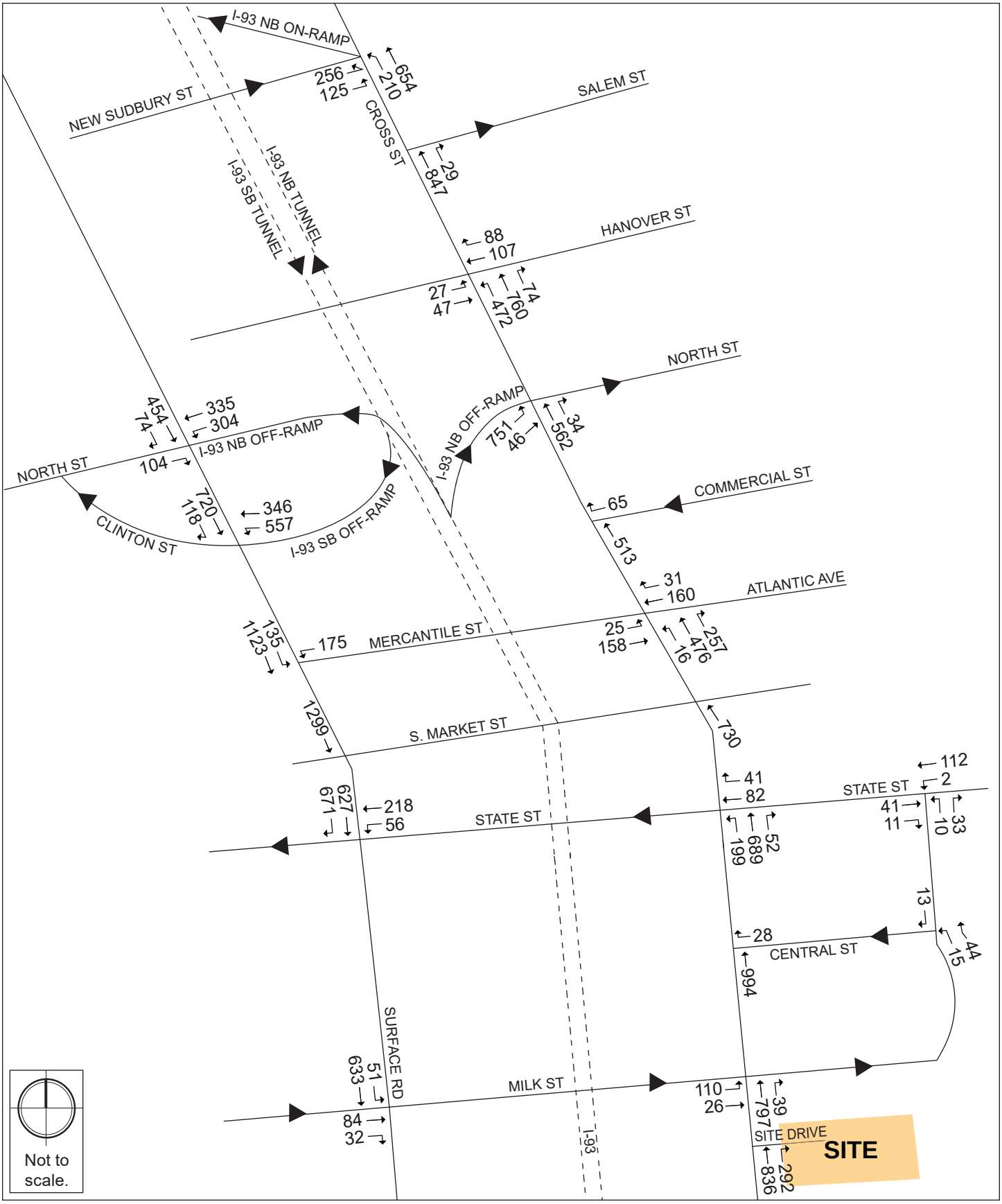

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Figure 2-19A

Build (2026) Condition Traffic olumes, Weekday a.m. Peak Hour

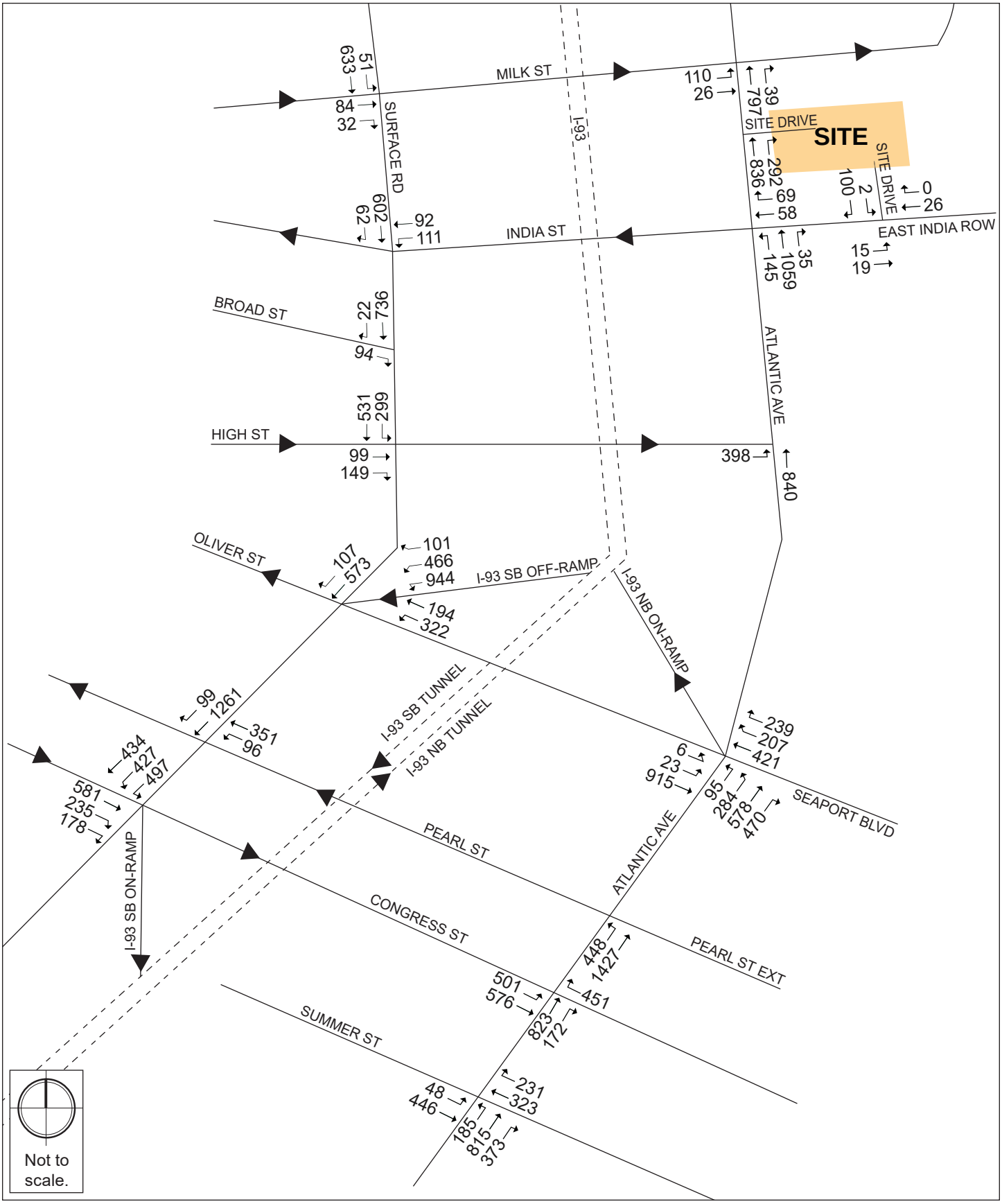

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Figure 2-19B

Build (2026) Condition Traffic olumes, Weekday a.m. Peak Hour

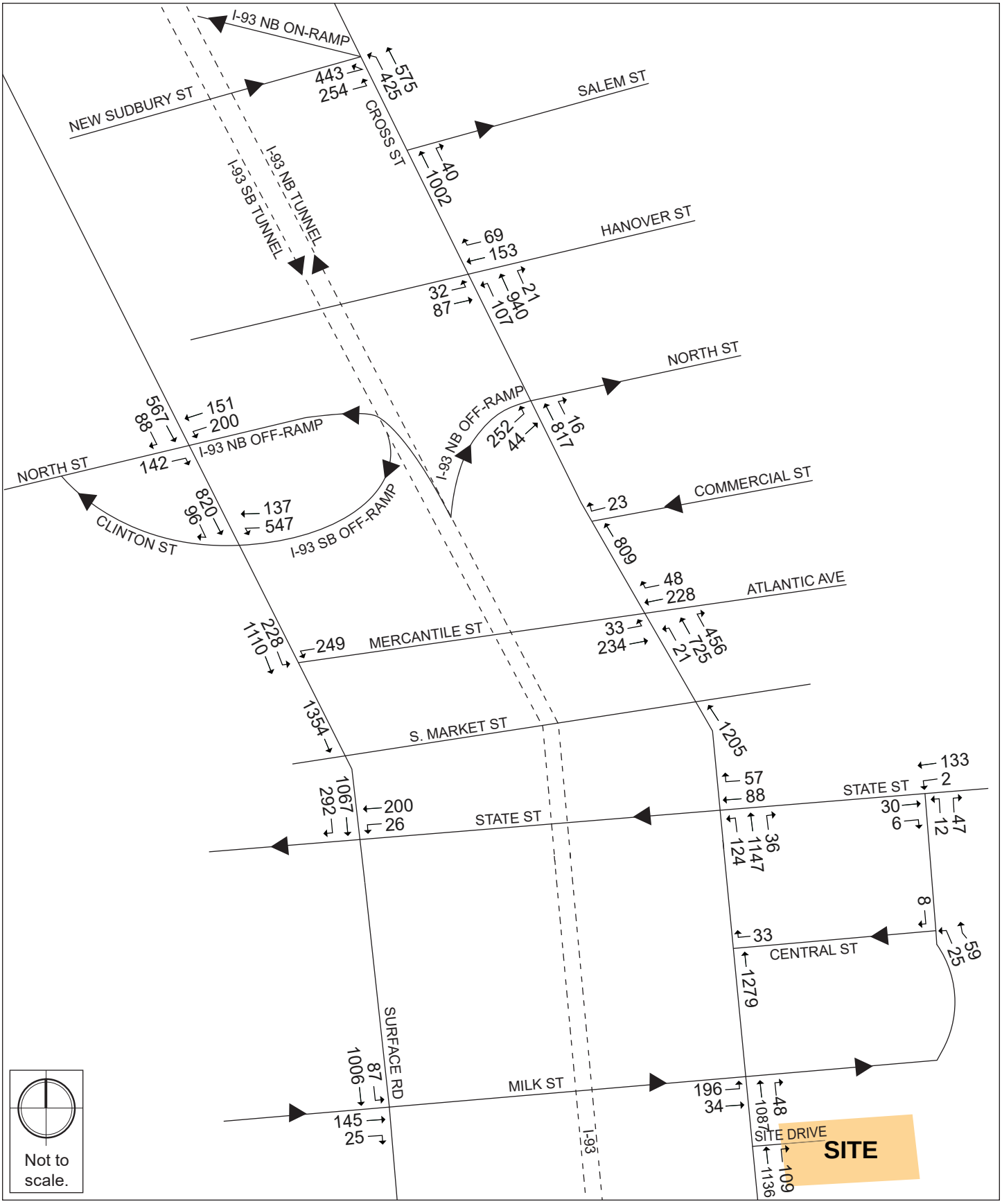

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Figure 2-20A

Build (2026) Condition Traffic olumes, Weekday p.m. Peak Hour

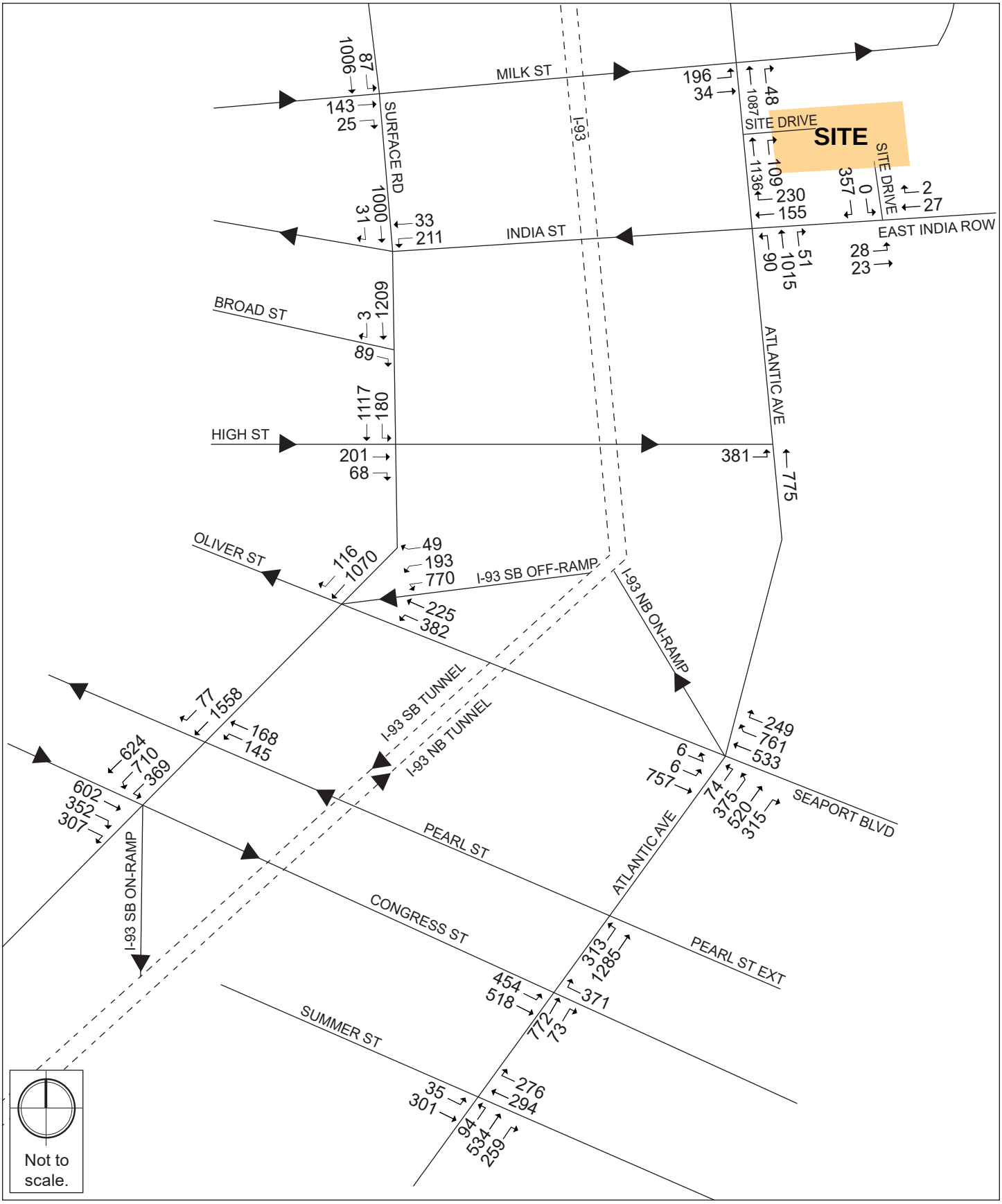

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Figure 2-20B

Build (2026) Condition Traffic olumes, Weekday p.m. Peak Hour

2.1.5 Traffic Capacity Analysis

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 2010 Highway Capacity Manual ("HCM").

LOS designations are based on the average delay per vehicle for all vehicles entering an intersection. Table 2-9 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 acceptable in an urban area. However, LOS E or F is often typical for a stop controlled minor street that intersects a major roadway.

Table 2-9 Vehicle Level of Service Criteria

Level of Service	Average Stopped Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
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: 2010 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 ("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 50th percentile queue length, measured in feet, represents the maximum queue length during a cycle of the traffic signal with typical (or median) entering traffic volumes.

The 95th percentile queue length, measured in feet, represents the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line during five percent of all signal cycles. The 95th percentile queue will not be seen during each cycle. The queue would be this long only five percent of the time and would typically not occur during off-peak hours. Since volumes fluctuate throughout the hour, the 95th percentile queue represents what can be

considered a "worst case" scenario. Queues at the intersection are generally below the 95th percentile queue throughout the course of the peak hour. It is also unlikely that the 95th percentile queues for each approach to the intersection will occur simultaneously.

Table 2-10 and Table 2-11 summarize the Existing Condition, the No-Build (2026) Condition, and the Build (2026) Condition capacity analysis for the study area intersection during the weekday a.m. and p.m. Peak hours, respectively. The detailed analysis of the Synchro results is provided in Appendix B.

2.1.5.1 Existing Condition Traffic Capacity Analysis

As shown in Table 2-10 and Table 2-11, in the Existing Condition of, most of the study area intersections and approaches operate at acceptable levels of service (LOS D or better) during the weekday a.m. and p.m. peak hours, with the exception of the following movements:

The signalized intersection of **Atlantic Avenue/Milk Street** operates at an acceptable LOS during both the a.m. and p.m. peak hours. However, the Milk Street eastbound left-turn movement operates at LOS F during the a.m. and p.m. peak hours and the Milk Street eastbound shared left/through and through lane movement operates at LOS E during the a.m. peak hour only.

All movements at the signalized intersection of **Surface Road/High Street** operate at an acceptable LOS during both peak hours with the exception of the eastbound High Street approach which operates at LOS F during the p.m. peak hour.

The signalized intersection of **Atlantic Avenue/High Street** operates at an acceptable LOS during both the a.m. and p.m. peak hours. However, during the p.m. peak hour, the eastbound High Street approach operates at LOS E.

The **Atlantic Avenue/Seaport Boulevard/I-93 NB On-Ramp** signalized intersection operates at an acceptable LOS during the a.m. peal hour and LOS F during the p.m. peak hour. The Seaport Boulevard westbound through/bear right approach operates at LOS F during both the a.m. and p.m. peak hours and the Seaport Boulevard westbound bear right/right approach operates at LOS F during the p.m. peak hour.

The **Purchase Street/Seaport Boulevard/I-93 SB Off-Ramp** signalized intersection operates at LOS E during the a.m. peak hour only. The Seaport Boulevard westbound approach operates at LOS F during both the peak hours. The I-93 Off-Ramp southwest hard left approach operates at LOS E during the p.m. peak hour and the I-93 Off-Ramp southwest through/bear right approach operates at LOS E during the a.m. peak hour.

The signalized intersection of **Purchase Street/Pearl Street** operates at an acceptable LOS during both the peak hours. The Pearl Street westbound left-turn approach operates at LOS E during the p.m. peak hour and the Pearl Street westbound though | through approach operates at LOS E during the a.m. and p.m. peak hours.

All movements at the signalized intersection of **Atlantic Avenue/Congress Street** operate at an acceptable LOS during both peak hours with the exception of the westbound Congress Street approach which operates at LOS E during the a.m. peak hour and the eastbound Congress Street left | left approach which operates at LOS E during the p.m. peak hour.

All movements at the unsignalized intersection of **Milk Street/Site Driveway** operate at an acceptable LOS during both the peak hours with the exception of the Site Driveway northbound approach, which operates at LOS F during the p.m. peak hour.

2.1.5.2 No-Build (2026) Condition Traffic Capacity Analysis

As shown in the No-Build (2026) Condition, all of the study area intersections and approaches continue to operate at the same level of service as the Existing Conditions during the weekday a.m. and p.m. peak hours, with the exception of the following movements:

The signalized intersection of **Atlantic Avenue/Seaport Boulevard/I-93 NB On-Ramp** decreases overall from LOS C to E during the a.m. peak hour. The Atlantic Avenue northbound left/through and through/right approach decreases from LOS C to F during the a.m. peak hour.

The signalized intersection of **Purchase Street/Seaport Boulevard/I-93 SB Off-Ramp** decreases overall from LOS E to F during the a.m. peak hour and from LOS D to F during the p.m. peak hour. The I-93 SB Off-Ramp southwest hard-left approach decrease from LOS D to F during the a.m. peak hour and from LOS E to F during the p.m. peak hour. The I-93 SB Off-Ramp southwest through/bear right approach decreases from LOS E to F during the a.m. peak hour.

During the p.m. peak hour, the signalized intersection of **Purchase Street/Congress Street** decreases overall from LOS C to F during the p.m. peak hour. The southbound Surface Road bear left approach and the through approach decreases from LOS C to F during the p.m. peak hour only.

The signalized intersection of **Atlantic Avenue/Congress Street** decreases overall from LOS C to E during the a.m. peak hour. The eastbound Congress Street left | left approach decreases from LOS D to F during the a.m. peak hour and from LOS E to F during the p.m. peak hour. The Atlantic Avenue northbound approach decreases from LOS C to E during the a.m. peak hour.

At the signalized intersection of **Atlantic Avenue/Mercantile Street/Cross Street**, all movements continue to operate at the same LOS during the a.m. peak hour. However, during the p.m. peak hour, the eastbound and westbound approaches decrease from LOS C to E.

At the signalized intersection of **Surface Road/I-93 SB Off-Ramp/Clinton Street**, all movements continue to operate at the same LOS during the a.m. peak hour. However, during the p.m. peak hour, the I-93 Off-Ramp westbound left-turn approach decreases from LOS D to F and the I-93 Off-Ramp westbound left/through approach decreases from LOS C to E.

2.1.5.3 Build (2026) Condition Traffic Capacity Analysis

As shown in the Build (2026) Condition, all of the study area intersections and approaches continue to operate at the same level of service during the weekday a.m. and p.m. peak hours, with the exception of the following movements:

At the signalized intersection of **Atlantic Avenue/Milk Street**, the eastbound Milk Street left/through | through approach improves from LOS E to D during the a.m. peak hour only.

The signalized intersection of **Atlantic Avenue/India Street/East India Row** decreases overall from LOS A to F during the p.m. peak hour and its westbound approach decreases from LOS D to F during the p.m. peak hour only.

At the signalized intersection of **Surface Road/India Street**, the westbound approaches decrease from LOS D to E during the p.m. peak hour.

The signalized intersection of **Atlantic Avenue/High Street** continue to operate at the same level with the exception of the eastbound High Street approach which decreases from LOS D to F during the a.m. peak hour and from LOS E to F during the p.m. peak hour.

The signalized intersection of **Surface Road/I-93 SB Off-Ramp/Clinton Street** decreases overall from LOS D to E during the p.m. peak hour. The westbound I-93 Off-Ramp left/through approach decreases from LOS E to F during the p.m. peak hour.

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Atlantic Avenue/Milk Street	**C**	**28.3**	-	-	-	**C**	**31.4**	-	-	-	**C**	**29.6**	-	-	-
EB Milk St left	F	>80.0	0.35	85	152	F	>80.0	0.39	94	163	F	>80.0	0.39	94	163
EB Milk St left/thru | thru	E	65.1	0.27	70	110	E	69.1	0.29	73	114	D	54.6	0.04	10	26
WB Milk St right	A	0.2	0.05	0	m0	A	0.2	0.05	0	m0	A	0.0	0.01	0	m0
NB Atlantic Ave thru | thru/right	A	9.9	0.63	64	79	B	10.3	0.68	67	81	B	14.1	0.67	96	117
Atlantic Avenue/India Street/ East India Row	**A**	**8.1**	-	-	-	**A**	**8.5**	-	-	-	**B**	**16.9**	-	-	-
WB East India Row thru/right	C	30.9	0.23	26	57	C	32.2	0.24	28	60	D	50.4	0.61	96	147
NB Atlantic Ave left/thru | thru/right	A	6.6	0.42	106	218	A	7.0	0.45	167	265	B	12.8	0.54	311	100
Surface Road/India Street	**B**	**14.5**	-	-	-	**B**	**11.5**	-	-	-	**B**	**10.8**	-	-	-
WB India St left | left	C	31.0	0.12	18	39	C	32.6	0.13	20	41	C	32.8	0.17	32	m58
WB India St thru	D	39.8	0.27	40	83	D	42.4	0.28	44	89	D	44.6	0.28	54	m100
SB Surface Rd thru | thru | thru/right	A	1.2	0.12	0	0	A	1.2	0.21	0	0	A	2.2	0.30	6	8
Surface Road/Milk Street	**B**	**11.8**	-	-	-	**B**	**10.4**	-	-	-	**A**	**9.5**	-	-	-
EB Milk St thru | thru/right	C	28.8	0.13	26	49	C	29.4	0.14	29	54	C	24.4	0.15	25	51
SB Surface Rd Left/thru | thru | thru	A	7.9	0.19	24	34	A	7.0	0.27	30	47	A	6.9	0.30	28	50
Surface Road/State Street	**B**	**11.0**	-	-	-	**B**	**10.2**	-	-	-	**B**	**10.1**	-	-	-
WB State St left	D	39.7	0.16	38	74	D	39.3	0.16	39	76	D	37.9	0.15	35	m71
WB State St left/thru | thru	D	41.0	0.25	62	91	D	41.0	0.27	64	94	D	41.8	0.27	69	101
SB Surface Rd thru | thru | thru/right	A	3.4	0.41	0	0	A	3.5	0.48	0	0	A	3.5	0.51	0	0
Atlantic Avenue/State Street	**A**	**8.5**	-	-	-	**A**	**8.9**	-	-	-	**A**	**6.8**	-	-	-
WB State St thru/right	C	28.5	0.26	62	113	C	29.1	0.27	66	119	C	29.3	0.27	66	119
NB Atlantic Ave left/thru | thru/right	A	5.6	0.45	50	58	A	6.0	0.49	57	67	A	3.7	0.50	54	54

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Surface Road/Broad Street	**A**	**4.0**	-	-	-	**A**	**3.7**	-	-	-	**A**	**3.9**	-	-	-
EB Broad St right	A	0.3	0.11	0	0	A	0.5	0.15	0	0	A	0.7	0.18	0	0
SB Surface Rd thru | thru | thru/right	A	4.9	0.14	22	31	A	4.3	0.22	28	37	A	4.4	0.32	38	46
Surface Road/High Street	**A**	**8.5**	-	-	-	**A**	**7.7**	-	-	-	**A**	**7.0**	-	-	-
EB High St thru | thru/right	B	14.7	0.27	28	62	B	14.6	0.28	30	64	B	14.7	0.28	30	64
SB Surface Rd left/thru | thru | thru	A	4.7	0.18	10	14	A	4.8	0.27	15	19	A	4.8	0.38	15	18
Atlantic Avenue/High Street	**B**	**14.7**	-	-	-	**B**	**14.4**	-	-	-	**D**	**35.6**	-	-	-
EB High St left | left	D	36.4	0.33	63	101	D	36.9	0.34	66	104	F	>80.0	0.75	152	208
NB Atlantic Ave thru | thru	A	9.6	0.44	102	123	A	9.2	0.46	106	m108	A	9.1	0.48	107	m107
Atlantic Avenue/Seaport Boulevard/ I-93 NB On-Ramp	**C**	**33.9**	-	-	-	**E**	**66.2**	-	-	-	**E**	**68.3**	-	-	-
EB Seaport Blvd hard left/left/thru | thru	A	8.9	0.54	16	m16	D	50.6	0.68	24	m16	D	50.6	0.68	24	m16
WB Seaport Blvd thru/bear right	F	>80.0	0.84	274	#453	F	>80.0	0.96	329	#550	F	>80.0	0.96	329	#550
WB Seaport Blvd bear right/right	C	34.5	0.42	104	176	D	37.5	0.53	136	221	D	37.5	0.53	136	221
WB Seaport Blvd right	D	37.5	0.54	145	232	D	38.2	0.56	152	242	D	38.2	0.57	153	243
NB Atlantic Ave left/bear left	C	22.7	0.58	78	134	C	33.5	0.70	118	#407	C	34.0	0.70	121	#407
NB Atlantic Ave left/thru | thru/right	C	26.4	0.80	107	#407	F	>80.0	>1.00	~503	#646	F	>80.0	>1.00	~517	#660
Purchase Street/Seaport Boulevard/ I-93 SB Off-Ramp	**E**	**55.8**	-	-	-	**F**	**99.4**	-	-	-	**F**	**100.0**	-	-	-
WB Seaport Blvd left/thru | thru	F	>80.0	>1.00	~192	m#26	F	>80.0	>1.00	~231	m#26	F	>80.0	>1.00	~2330	m#26
SB Purchase St thru | thru | thru/right	C	23.9	0.45	101	140	C	28.3	0.64	161	206	C	27.7	0.66	168	215
SWB I-93 Off-Ramp hard left	D	49.6	0.95	498	#767	F	>80.0	>1.00	~813	#1059	F	>80.0	>1.00	~813	#1059
SWB I-93 Off-Ramp thru/bear right	E	61.5	0.92	311	#508	F	>80.0	>1.00	~473	#687	F	>80.0	>1.00	~473	#687

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Purchase Street/Pearl Street	**C**	**28.1**	-	-	-	**C**	**27.6**	-	-	-	**C**	**27.3**	-	-	-
WB Pearl St left	D	49.9	0.20	50	97	D	52.3	0.32	79	138	D	52.1	0.32	80	138
WB Pearl St thru | thru	E	63.2	0.54	144	195	E	66.9	0.57	153	205	E	66.8	0.57	153	205
SB Purchase St thru | thru | thru/right	B	13.9	0.40	150	m168	B	14.4	0.54	224	m210	B	14.3	0.55	224	m210
Atlantic Avenue/Pearl Street	**A**	**9.6**	-	-	-	**D**	**41.7**	-	-	-	**D**	**45.3**	-	-	-
NB Atlantic Ave left/thru | thru | thru	A	9.6	0.43	147	179	D	41.7	0.55	265	m267	D	45.3	0.55	267	m274
Purchase Street/Congress Street	**B**	**19.9**	-	-	-	**C**	**20.7**	-	-	-	**C**	**20.7**	-	-	-
EB Congress St thru | thru	C	29.5	0.49	154	207	C	31.3	0.53	171	227	C	31.3	0.53	171	227
EB Congress St bear right	C	31.7	0.46	126	201	C	32.2	0.48	132	209	C	32.2	0.48	132	209
EB Congress St right	C	26.7	0.28	70	122	C	28.2	0.36	93	154	C	28.2	0.36	93	154
SB Surface Rd left	B	13.2	0.63	227	417	B	14.5	0.74	156	489	B	14.4	0.75	135	453
SB Surface Rd bear left	B	10.7	0.53	38	269	B	12.1	0.67	63	167	B	13.0	0.70	76	210
SB Surface Rd thru	A	6.4	0.33	14	20	B	12.7	0.69	81	224	B	12.5	0.69	74	184
Atlantic Avenue/Congress Street	**C**	**33.0**	-	-	-	**E**	**62.0**	-	-	-	**E**	**62.1**	-	-	-
EB Congress St left | left	D	51.1	0.70	162	218	F	>80.0	0.82	193	#265	F	>80.0	0.82	193	#265
EB Congress St thru | thru	A	5.3	0.28	72	65	A	5.0	0.30	69	63	A	5.0	0.30	69	64
WB Congress St right | right	E	65.0	0.89	172	#273	E	78.6	0.97	190	#307	E	78.6	0.97	190	#307
NB Atlantic Ave thru | thru | thru/right	C	24.3	0.66	134	156	E	72.2	0.84	146	m209	E	72.4	0.85	147	m206
Atlantic Avenue/Summer Street	**C**	**34.7**	-	-	-	**D**	**41.6**	-	-	-	**D**	**42.3**	-	-	-
EB Summer St left/thru | thru	C	32.6	0.51	115	160	D	37.3	0.68	156	209	D	37.3	0.68	156	209
WB Summer St thru | thru | thru/right	D	40.4	0.56	117	156	D	42.8	0.66	141	183	D	42.8	0.66	141	183
NB Atlantic Ave left	C	28.5	0.34	100	164	C	28.7	0.36	104	171	C	28.7	0.36	104	171
NB Atlantic Ave left/thru | thru	C	32.4	0.61	198	263	D	44.1	0.87	321	#442	D	46.1	0.89	332	#459
NB Atlantic Ave right	D	36.2	0.63	187	288	D	45.8	0.80	259	#421	D	45.8	0.80	259	#421

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Surface Road/S Market Street	**A**	**3.4**	-	-	-	**A**	**3.2**	-	-	-	**A**	**3.1**	-	-	-
SB Surface Rd thru | thru | thru	A	3.4	0.29	46	53	A	3.2	0.35	52	58	A	3.1	0.36	53	58
Atlantic Avenue/Christopher Columbus Path	**A**	**2.1**	-	-	-	**A**	**2.1**	-	-	-	**A**	**2.1**	-	-	-
NB Atlantic Ave thru | thru	A	2.1	0.30	16	21	A	2.1	0.33	18	22	A	2.1	0.34	18	22
Surface Road/Mercantile Street	**A**	**2.9**	-	-	-	**A**	**2.6**	-	-	-	**A**	**2.6**	-	-	-
WB Mercantile St left | left	A	8.6	0.25	8	12	A	8.6	0.28	9	13	A	8.6	0.28	9	13
SB Surface St left/thru | thru | thru	A	1.9	0.32	29	20	A	1.7	0.38	24	17	A	1.7	0.40	24	18
Atlantic Avenue/Mercantile Street/ Cross Street	**C**	**26.8**	-	-	-	**C**	**29.1**	-	-	-	**C**	**28.2**	-	-	-
EB Mercantile St left/thru | thru	D	45.7	0.24	53	88	D	46.5	0.33	72	110	D	46.3	0.33	72	110
WB Atlantic Ave thru/right	D	43.1	0.50	99	169	D	46.5	0.60	122	200	D	46.5	0.60	122	200
NB Cross St left/thru | thru	B	18.3	0.26	66	105	B	19.3	0.30	80	120	B	18.4	0.31	84	125
NB Cross St right	C	20.4	0.33	74	128	C	21.4	0.35	83	139	C	20.3	0.35	84	139
Surface Road/I-93 SB Off- Ramp/ Clinton Street	**C**	**26.3**	-	-	-	**C**	**29.6**	-	-	-	**C**	**30.2**	-	-	-
WB I-93 Off-Ramp left	C	24.3	0.45	161	244	C	26.2	0.53	198	296	C	27.1	0.57	216	320
WB I-93 Off-Ramp left/thru	C	23.3	0.41	156	235	C	29.7	0.66	295	422	C	30.2	0.68	303	434
SB Surface Rd thru | thru | thru/right	C	28.6	0.52	113	174	C	31.2	0.65	194	242	C	31.7	0.67	203	250
Cross Street/Commercial Street	**A**	**1.9**	-	-	-	**A**	**1.8**	-	-	-	**A**	**1.8**	-	-	-
WB Commercial St right	A	0.3	0.09	0	0	A	0.3	0.10	0	0	A	0.3	0.11	0	0
NB Cross St thru | thru	A	2.2	0.23	18	23	A	2.0	0.25	21	23	A	2.0	0.26	21	23
Surface Road/North Street/ I-93 NB Off-Ramp	**B**	**16.8**	-	-	-	**B**	**19.9**	-	-	-	**C**	**20.1**	-	-	-
EB North St right	A	8.6	0.11	27	50	A	8.7	0.12	29	52	A	8.7	0.12	29	52
WB I-93 Off-Ramp left/thru | thru	A	9.9	0.30	92	122	B	10.2	0.33	102	135	B	10.3	0.34	106	139
SB Surface Rd thru | thru/right	C	30.2	0.40	101	144	C	34.3	0.57	158	214	C	34.6	0.58	162	220

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Cross Street/North Street/ I-93 NB Off-Ramp	**C**	**31.9**	**-**	**-**	**-**	**C**	**34.1**	**-**	**-**	**-**	**C**	**34.7**	**-**	**-**	**-**
EB I-93 Off-Ramp left	C	21.0	0.43	146	224	C	25.8	0.62	238	355	C	25.8	0.62	238	355
EB I-93 Off-Ramp left/thru | thru	B	19.8	0.37	123	190	C	22.7	0.51	184	277	C	22.7	0.51	184	277
NB Cross St thru | thru/right	D	44.4	0.61	207	264	D	47.3	0.69	236	296	D	48.1	0.72	246	307
Cross Street/Hanover Street	**B**	**11.5**	-	-	-	**B**	**14.1**	**-**	**-**	**-**	**B**	**14.3**	**-**	**-**	**-**
EB Hanover St left	C	29.1	0.14	16	38	C	29.4	0.15	16	39	C	29.4	0.15	16	39
EB Hanover St thru	C	27.1	0.09	24	50	C	27.2	0.10	27	54	C	27.2	0.10	27	54
WB Hanover thru/right	C	34.6	0.47	110	181	D	35.5	0.50	120	195	D	35.5	0.50	120	195
NB Cross St left/thru | thru/right	A	5.7	0.57	44	54	A	9.8	0.74	70	111	B	10.0	0.75	69	111
Cross Street/Salem Street	**B**	**10.9**	**-**	**-**	**-**	**B**	**11.6**	**-**	**-**	**-**	**B**	**11.8**	**-**	**-**	**-**
NB Cross St thru | thru/right	B	10.9	0.41	164	183	B	11.6	0.45	136	155	B	11.8	0.46	138	156
Cross Street/New Sudbury Street/I-93 NB On-Ramp	**A**	**10.0**	**-**	**-**	**-**	**B**	**11.1**	**-**	**-**	**-**	**B**	**11.0**	**-**	**-**	**-**
EB New Sudbury St hard left/left	C	20.1	0.19	63	92	C	20.9	0.26	91	126	C	20.9	0.26	91	126
NB Cross St bear left/thru | thru	A	6.2	0.49	203	58	A	6.5	0.55	213	195	A	6.6	0.57	220	206
Unsignalized Intersections															
Milk Street/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
EB Milk St thru/right	A	0.0	0.15	-	0	A	0.0	0.15	-	0	-	-	-	-	-
WB Milk St left/thru	A	2.8	0.00	-	0	A	2.8	0.00	-	0	-	-	-	-	-
NB Parking Garage left/right	B	11.2	0.03	-	3	B	11.2	0.03	-	3	-	-	-	-	-
Atlantic Street/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
NB Atlantic St thru | thru	-	-	-	-	-	-	-	-	-	-	A	0.0	0.00	-	0
East India Row/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
EB East India Row thru/right	A	4.9	0.02	-	2	A	4.8	0.02	-	2	A	3.6	0.01	-	1
WB East India Row left/thru	A	0.0	0.02	-	0	A	0.0	0.02	-	0	A	0.0	0.02	-	0
SB Parking Garage left/right	B	10.0	0.04	-	3	B	10.0	0.04	-	3	B	10.7	0.17	-	15
Atlantic Avenue/Central Street	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
WB Central St right | right	A	9.3	0.02	-	1	A	9.4	0.02	-	1	A	9.4	0.02	-	1
NB Atlantic St thru | thru	A	0.0	0.25	-	0	A	0.0	0.28	-	0	A	0.0	0.29	-	0

Table 2-10 Capacity Analysis Summary, Weekday a.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Old Atlantic Avenue/Central Street	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NB Old Atlantic Ave left/thru	A	1.9	0.01	-	1	A	1.9	0.01	-	1	A	1.9	0.01	-	1
SB Old Atlantic Ave thru/right	A	0.0	0.01	-	0	A	0.0	0.01	-	0	A	0.0	0.01	-	0
Old Atlantic Avenue/State Street/ Long Wharf	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EB State St thru/right	A	0.0	0.03	-	0	A	0.0	0.03	-	0	A	0.0	0.03	-	0
WB Long Wharf left/thru	A	0.1	0.00	-	0	A	0.1	0.00	-	0	A	0.1	0.00	-	0
NB Old Atlantic Ave left/right	B	11.7	0.08	-	7	B	11.7	0.08	-	7	B	11.7	0.08	-	7

Grey Shading indicates decrease to LOS E or F.
Black Shading indicates improvement from 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 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Atlantic Avenue/Milk Street	**C**	**34.6**	-	-	-	**D**	**36.0**	-	-	-	**D**	**48.7**	-	-	-
EB Milk St left	F	>80.0	0.90	138	#294	F	>80.0	0.96	154	#323	F	>80.0	0.96	157	#123
EB Milk St left/thru | thru	D	35.6	0.15	22	44	D	41.1	0.16	24	48	D	40.9	0.08	12	m28
WB Milk St right	A	1.7	0.29	0	m0	A	2.0	0.31	0	m0	A	0.0	0.01	0	m0
NB Atlantic Ave thru | thru/right	B	17.2	0.61	108	177	B	17.3	0.66	113	203	C	32.1	0.79	395	m391
Atlantic Avenue/India Street/ East India Row	**A**	**4.5**	-	-	-	**A**	**4.5**	-	-	-	**F**	**143.8**	-	-	-
WB East India Row thru/right	D	40.8	0.22	31	64	D	40.8	0.23	33	66	F	>80.0	>1.00	~516	#660
NB Atlantic Ave left/thru | thru/right	A	2.6	0.42	111	72	A	2.6	0.45	116	71	A	3.1	0.50	155	85
Surface Road/India Street	**A**	**9.8**	-	-	-	**A**	**9.4**	-	-	-	**B**	**19.1**	-	-	-
WB India St left | left	D	37.6	0.10	25	0	D	37.0	0.11	0	0	E	74.6	0.28	0	m0
WB India St thru	D	39.2	0.08	19	0	D	38.3	0.08	19	m0	E	57.2	0.08	23	m23
SB Surface Rd thru | thru | thru/right	A	5.3	0.32	22	27	A	6.4	0.50	35	53	A	7.3	0.51	40	66
Surface Road/Milk Street	**B**	**10.5**	-	-	-	**A**	**9.3**	-	-	-	**A**	**8.2**	-	-	-
EB Milk St thru | thru/right	C	35.0	0.23	47	78	D	35.6	0.25	52	85	C	34.5	0.26	52	85
SB Surface Rd Left/thru | thru | thru	A	5.6	0.32	43	50	A	5.4	0.47	54	61	A	4.2	0.46	33	41
Surface Road/State Street	**A**	**8.9**	-	-	-	**A**	**7.7**	-	-	-	**A**	**6.1**	-	-	-
WB State St left	D	43.2	0.23	61	m108	D	46.3	0.24	63	m110	C	30.2	0.06	13	m29
WB State St left/thru | thru	C	34.3	0.19	50	79	D	35.3	0.19	52	82	D	36.2	0.23	54	94
SB Surface Rd thru | thru | thru/right	A	0.7	0.38	0	0	A	1.0	0.52	1	6	A	1.1	0.55	1	6
Atlantic Avenue/State Street	**A**	**9.2**	-	-	-	**A**	**9.3**	-	-	-	**A**	**6.3**	-	-	-
WB State St thru/right	C	34.1	0.39	107	174	C	34.6	0.41	112	181	C	32.9	0.32	84	141
NB Atlantic Ave left/thru | thru/right	A	5.3	0.60	106	m122	A	5.4	0.64	113	m128	A	3.3	0.66	82	68

Table 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Surface Road/Broad Street	**A**	**2.4**	-	-	-	**A**	**2.0**	-	-	-	**A**	**3.8**	-	-	-
EB Broad St right	A	0.6	0.15	0	0	A	1.0	0.21	0	0	A	1.1	0.22	0	0
SB Surface Rd thru | thru | thru/right	A	2.6	0.29	23	29	A	2.1	0.44	25	29	A	4.0	0.50	64	76
Surface Road/High Street	**C**	**29.9**	-	-	-	**C**	**23.6**	-	-	-	**C**	**23.1**	-	-	-
EB High St thru | thru/right	F	>80.0	0.65	105	129	F	>80.0	0.68	111	135	F	>80.0	0.68	111	135
SB Surface Rd left/thru | thru | thru	A	1.2	0.31	7	9	A	1.2	0.45	9	10	A	1.2	0.51	9	10
Atlantic Avenue/High Street	**B**	**20.0**	-	-	-	**C**	**22.3**	-	-	-	**D**	**35.8**	-	-	-
EB High St left | left	E	56.8	0.50	107	151	E	67.0	0.52	112	158	F	>80.0	0.70	143	194
NB Atlantic Ave thru | thru	A	5.4	0.40	94	96	A	5.2	0.43	99	97	A	5.1	0.44	99	96
Atlantic Avenue/Seaport Boulevard/ I-93 NB On-Ramp	**F**	**83.1**	-	-	-	**F**	**176.0**	-	-	-	**F**	**175.5**	-	-	-
EB Seaport Blvd hard left/left/thru | thru	A	5.6	0.53	6	m6	A	8.9	0.60	8	m6	A	8.9	0.60	8	m6
WB Seaport Blvd thru/bear right	F	>80.0	0.82	236	#398	F	>80.0	>1.00	~568	#800	F	>80.0	>1.00	~568	#800
WB Seaport Blvd bear right/right	F	>80.0	>1.00	~609	#842	F	>80.0	>1.00	~983	#1240	F	>80.0	>1.00	~938	#1240
WB Seaport Blvd right	D	44.5	0.64	161	255	D	45.8	0.66	168	266	D	46.0	0.67	170	269
NB Atlantic Ave left/bear left	B	19.8	0.53	78	178	D	35.7	0.76	209	#486	D	36.1	0.76	213	#486
NB Atlantic Ave left/thru | thru/right	B	19.2	0.64	93	203	C	31.7	0.79	228	#430	C	32.8	0.80	242	#445
Purchase Street/Seaport Boulevard/	**D**	**51.2**	-	-	-	**F**	**118.1**	-	-	-	**F**	**118.6**	-	-	-
WB Seaport Blvd left/thru | thru	F	>80.0	>1.00	~180	m#24	F	>80.0	>1.00	~368	m#27	F	>80.0	>1.00	~367	m#27
SB Purchase St thru | thru | thru/right	B	16.9	0.59	89	108	C	25.8	0.87	123	101	C	31.1	0.92	83	#111
SWB I-93 Off-Ramp hard left	E	68.2	>1.00	~485	#737	F	>80.0	>1.00	~652	#886	F	>80.0	>1.00	~652	#886
SWB I-93 Off-Ramp thru/bear right	D	40.7	0.49	111	182	D	46.5	0.65	157	247	D	46.5	0.65	157	247

Table 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Purchase Street/Pearl Street	**B**	**13.2**	-	-	-	**B**	**16.1**	-	-	-	**B**	**16.1**	-	-	-
WB Pearl St left	E	56.6	0.30	45	87	E	69.9	0.68	126	190	E	69.7	0.68	126	190
WB Pearl St thru | thru	E	55.9	0.41	64	97	D	53.0	0.39	75	111	D	52.9	0.39	75	111
SB Purchase St thru | thru | thru/right	A	3.9	0.35	38	m42	A	6.8	0.62	110	m173	A	7.1	0.64	110	m172
Atlantic Avenue/Pearl Street	**A**	**0.6**	-	-	-	**A**	**0.7**	-	-	-	**A**	**0.7**	-	-	-
NB Atlantic Ave left/thru | thru | thru	A	0.6	0.34	0	m0	A	0.7	0.45	0	m0	A	0.7	0.46	0	m0
Purchase Street/Congress Street	**C**	**27.2**	-	-	-	**F**	**80.0**	-	-	-	**F**	**91.8**	-	-	-
EB Congress St thru | thru	C	25.5	0.47	157	209	C	26.5	0.49	169	223	C	26.5	0.49	169	223
EB Congress St bear right	C	33.0	0.63	197	301	C	34.1	0.65	209	317	C	34.1	0.65	209	217
EB Congress St right	C	27.9	0.50	149	232	C	29.5	0.56	170	262	C	29.5	0.56	170	262
SB Surface Rd left	C	25.2	0.60	254	360	C	29.5	0.67	256	360	C	31.0	0.67	245	338
SB Surface Rd bear left	C	30.4	0.70	287	400	F	>80.0	>1.00	~680	#916	F	>80.0	>1.00	~761	#1005
SB Surface Rd thru	C	20.4	0.46	167	272	F	>80.0	>1.00	~598	#832	F	>80.0	>1.00	~605	#839
Atlantic Avenue/Congress Street	**C**	**32.9**	-	-	-	**D**	**40.6**	-	-	-	**D**	**40.3**	-	-	-
EB Congress St left | left	E	71.8	0.91	157	#245	F	>80.0	1.00	174	#281	F	>80.0	1.00	174	#281
EB Congress St thru | thru	A	4.6	0.26	52	48	A	4.4	0.28	51	48	A	4.4	0.28	52	48
WB Congress St right | right	D	40.8	0.54	110	160	D	44.2	0.66	138	196	D	44.2	0.66	138	196
NB Atlantic Ave thru | thru | thru/right	C	23.9	0.40	124	156	C	28.2	0.62	211	258	C	27.9	0.63	217	263
Atlantic Avenue/Summer Street	**C**	**31.9**	-	-	-	**D**	**35.3**	-	-	-	**D**	**35.3**	-	-	-
EB Summer St left/thru | thru	C	31.9	0.37	80	117	C	34.0	0.48	102	144	C	34.0	0.48	102	144
WB Summer St thru | thru | thru/right	D	41.9	0.52	97	132	D	47.6	>1.00	141	184	D	47.6	>1.00	141	184
NB Atlantic Ave left	C	23.3	0.15	42	82	C	23.4	0.16	43	83	C	23.4	0.16	43	83
NB Atlantic Ave left/thru | thru	C	25.2	0.34	100	142	C	28.0	0.50	160	215	C	28.3	0.52	167	223
NB Atlantic Ave right	C	27.2	0.39	108	175	C	29.5	0.49	143	224	C	29.5	0.49	143	224

Table 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
19. Surface Road/S Market Street	**A**	**7.4**	-	-	-	**A**	**6.6**	-	-	-	**A**	**6.4**	-	-	-
SB Surface Rd thru | thru | thru	A	7.4	0.31	59	69	A	6.6	0.43	73	83	A	6.4	0.45	73	83
Atlantic Avenue/Christopher Columbus Path	**A**	**3.0**	-	-	-	**A**	**3.1**	-	-	-	**A**	**3.1**	-	-	-
NB Atlantic Ave thru | thru	A	3.0	0.48	35	41	A	3.1	0.51	37	43	A	3.1	0.54	33	55
Surface Road/Mercantile Street	**B**	**13.8**	-	-	-	**B**	**13.9**	-	-	-	**B**	**14.5**	-	-	-
WB Mercantile St left | left	B	13.1	0.23	63	67	B	17.7	0.29	54	m59	B	17.9	0.29	54	m60
SB Surface St left/thru | thru | thru	B	14.0	0.35	124	147	B	13.2	0.47	150	169	B	13.9	0.49	159	201
Atlantic Avenue/Mercantile Street/Cross Street	**C**	**24.4**	-	-	-	**C**	**30.8**	-	-	-	**C**	**28.8**	-	-	-
EB Mercantile St left/thru | thru	D	46.4	0.41	92	135	E	55.7	0.56	111	157	E	55.2	0.56	111	157
WB Atlantic Ave thru/right	D	46.3	0.60	134	215	E	65.2	0.84	196	#344	E	65.2	0.84	196	#344
NB Cross St left/thru | thru	B	12.0	0.41	156	194	B	12.3	0.44	170	208	B	10.7	0.47	142	182
NB Cross St right	C	21.0	0.60	292	420	C	22.2	0.64	312	448	B	19.4	0.64	247	389
Surface Road/I-93 SB Off-Ramp/ Clinton Street	**C**	**29.5**	-	-	-	**D**	**51.9**	-	-	-	**E**	**56.2**	-	-	-
WB I-93 Off-Ramp left	D	42.9	0.54	183	277	F	>80.0	0.66	234	348	F	>80.0	0.70	254	375
WB I-93 Off-Ramp left/thru	C	29.4	0.34	113	181	E	69.0	0.49	176	266	F	>80.0	0.51	184	275
SB Surface Rd thru | thru | thru/right	C	22.4	0.35	88	114	C	27.7	0.55	171	209	C	27.8	0.56	175	218
Cross Street/Commercial Street	**A**	**0.7**	-	-	-	**A**	**0.7**	-	-	-	**A**	**0.7**	-	-	-
WB Commercial St right	A	0.1	0.04	0	0	A	0.2	0.05	0	0	A	0.2	0.05	0	0
NB Cross St thru | thru	A	0.7	0.30	1	1	A	0.8	0.34	1	m2	A	0.7	0.37	1	1
Surface Road/North Street/ I-93 NB Off-Ramp	**B**	**17.5**	-	-	-	**C**	**20.1**	-	-	-	**C**	**20.2**	-	-	-
EB North St right	B	18.0	0.21	58	99	B	18.1	0.22	61	104	B	18.1	0.22	61	104
WB I-93 Off-Ramp left/thru | thru	B	17.4	0.20	63	91	B	17.7	0.23	72	102	B	17.8	0.24	76	107
SB Surface Rd thru | thru/right	B	17.4	0.28	76	111	C	21.8	0.49	167	220	C	21.9	0.49	170	223

Table 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Cross Street/North Street/ I-93 NB Off-Ramp	**B**	**12.3**	**-**	**-**	**-**	**B**	**13.8**	**-**	**-**	**-**	**B**	**13.8**	**-**	**-**	**-**
EB I-93 Off-Ramp left	C	26.0	0.20	53	97	C	27.4	0.29	80	135	C	27.4	0.29	80	135
EB I-93 Off-Ramp left/thru | thru	C	26.2	0.22	61	109	C	27.3	0.28	81	137	C	27.3	0.28	81	137
NB Cross St thru | thru/right	A	7.9	0.54	47	57	A	8.7	0.61	60	68	A	9.0	0.65	61	68
Cross Street/Hanover Street	**B**	**11.6**	**-**	**-**	**-**	**B**	**11.5**	**-**	**-**	**-**	**B**	**11.3**	**-**	**-**	**-**
EB Hanover St left	C	34.8	0.20	17	46	D	35.3	0.21	18	46	D	35.3	0.27	18	46
EB Hanover St thru	C	31.8	0.17	43	83	C	32.1	0.20	49	92	C	32.1	0.20	49	92
WB Hanover thru/right	D	37.6	0.56	124	206	D	38.8	0.59	132	218	D	38.8	0.59	132	218
NB Cross St left/thru | thru/right	A	2.2	0.42	5	6	A	2.7	0.51	8	10	A	2.85	0.53	8	10
Cross Street/Salem Street	**B**	**10.2**	**-**	**-**	**-**	**B**	**10.0**	**-**	**-**	**-**	**B**	**10.2**	**-**	**-**	**-**
NB Cross St thru | thru/right	B	10.2	0.44	250	296	B	10.0	0.48	275	0	B	10.2	0.51	303	305
Cross Street/New Sudbury Street/I-93 NB On-Ramp	**B**	**13.0**	**-**	**-**	**-**	**B**	**15.1**	**-**	**-**	**-**	**B**	**14.9**	**-**	**-**	**-**
EB New Sudbury St hard left/left	C	24.7	0.36	127	171	C	27.0	0.51	193	249	C	27.0	0.51	193	249
NB Cross St bear left/thru | thru	A	6.2	0.52	266	27	A	6.3	0.57	286	35	A	6.5	0.61	311	28
Unsignalized Intersections															
Milk Street/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
EB Milk St thru/right	A	0.0	0.07	-	0	A	0.0	0.08	-	0	-	-	-	-	-
WB Milk St left/thru	A	0.0	0.00	-	0	A	0.0	0.00	-	0	-	-	-	-	-
NB Parking Garage left/right	F	>50.0	0.88	-	181	F	>50.0	0.88	-	182	-	-	-	-	-
Atlantic Avenue/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
NB Atlantic Ave thru | thru/right	-	-	-	-	-	-	-	-	-	-	A	0.0	0.48	-	0
East India Row/Site Driveway	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
EB East India Row thru/right	A	3.0	0.01	-	1	A	2.9	0.01	-	1	A	4.7	0.03	-	2
WB East India Row left/thru	A	0.0	0.03	-	0	A	0.0	0.03	-	0	A	0.0	0.03	-	0
SB Parking Garage left/right	B	11.0	0.04	-	3	B	11.1	0.04	-	3	D	32.0	0.82	-	214

Table 2-11 Capacity Analysis Summary, Weekday p.m. Peak Hour (Continued)

Intersection/Movement	Existing Condition					No-Build (2026) Condition					Build (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queu 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
Signalized Intersections															
Atlantic Avenue/Central Street	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB Central St right | right	A	9.4	0.05	-	4	A	9.5	0.05	-	4	A	9.9	0.03	-	2
NB Atlantic Ave thru | thru	A	0.0	0.34	-	0	A	0.0	0.37	-	0	A	0.0	0.39	-	0
Old Atlantic Avenue/Central Street	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NB Old Atlantic Ave left/thru	A	3.3	0.05	-	4	A	3.3	0.05	-	4	A	2.3	0.02	-	1
SB Old Atlantic Ave thru/right	A	0.0	0.01	-	0	A	0.0	0.01	-	0	A	0.0	0.01	-	0
Old Atlantic Avenue/State Street/ Long Wharf	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EB State St thru/right	A	0.0	0.02	-	0	A	0.0	0.02	-	0	A	0.0	0.02	-	0
WB Long Wharf left/thru	A	0.1	0.00	-	0	A	0.1	0.00	-	0	A	0.1	0.00	-	0
NB Old Atlantic Ave left/right	D	30.1	0.46	-	56	D	31.3	0.48	-	61	C	24.3	0.28	-	27

Grey Shading indicates 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.

2.1.5.4 Build Mitigation (2026) Condition Traffic Capacity Analysis

While the traffic impacts associated with the proposed Project without mitigation measures are moderate and will not affect overall intersection operations except as noted above, additional analysis was completed to the intersections adjacent to the Project Site, incorporating recommendations to improve traffic conditions, including converting Milk Street, east of Atlantic Avenue, to one-way eastbound. This will provide a much simpler interaction with the pedestrian activity and public realm of Central Wharf. It will also remove the westbound approach to Atlantic Avenue, providing simpler signal phasing and more green time to the other approaches. Additionally, signal timings improvements were analyzed at the Atlantic Avenue/India Street/East India Row and Surface Road/India Street intersections. Capacity analysis results for the mitigation option are shown in Table 2-12**.**

Table 2-12 Build Mitigation Condition Capacity Analysis Summary

Intersection/Movement	Build (2026) Condition					Build Mitigated (2026) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th	95th
a.m. Peak Hour										
Atlantic Avenue/Milk Street	**C**	**29.6**	**-**	**-**	**-**	**B**	**15.0**	**-**	**-**	**-**
EB Milk St left	F	>80.0	0.39	94	163	D	51.0	0.33	58	92
EB Milk St left/thru | thru	D	54.6	0.04	10	26	C	27.5	0.04	6	15
WB Milk St right	A	0.0	0.01	0	m0	-	-	-	-	-
NB Atlantic Ave thru | thru/right	B	14.1	0.67	96	117	A	9.7	0.55	93	93
Atlantic Avenue/India Street/	**B**	**16.9**	**-**	**-**	**-**	**B**	**17.0**	**-**	**-**	**-**
WB East India Row thru/right	D	50.4	0.61	96	147	D	50.4	0.61	96	147
NB Atlantic Ave left/thru | thru/right	B	12.8	0.54	311	100	B	12.9	0.54	314	101
Surface Road/India Street	**B**	**10.8**	**-**	**-**	**-**	**B**	**10.8**	**-**	**-**	**-**
WB India St left | left	C	32.8	0.17	32	m58	C	32.8	0.17	32	m58
WB India St thru	D	44.6	0.28	54	m100	D	44.6	0.28	54	m99
SB Surface Rd thru | thru | thru/right	A	2.2	0.30	6	8	A	2.2	0.30	5	8
p.m. Peak Hour										
Atlantic Avenue/Milk Street	**D**	**48.7**	**-**	**-**	**-**	**C**	**23.1**	**-**	**-**	**-**
EB Milk St left	F	>80.0	0.96	157	#123	D	45.8	0.57	150	236
EB Milk St left/thru | thru	D	40.9	0.08	12	m28	C	22.1	0.05	5	m11
WB Milk St right	A	0.0	0.01	0	m0	-	-	-	-	-
NB Atlantic Ave thru | thru/right	C	32.1	0.79	395	m391	B	19.2	0.75	201	231
Atlantic Avenue/India Street/	**F**	**143.8**	**-**	**-**	**-**	**C**	**29.3**	**-**	**-**	**-**
WB East India Row thru/right	F	>80.0	>1.00	~516	#660	D	45.9	0.85	286	#417
NB Atlantic Ave left/thru | thru/right	A	3.1	0.50	155	85	C	22.9	0.75	197	419
Surface Road/India Street	**B**	**19.1**	**-**	**-**	**-**	**B**	**11.8**	**-**	**-**	**-**
WB India St left | left	E	74.6	0.28	0	m0	C	35.0	0.28	44	m62
WB India St thru	E	57.2	0.08	23	m23	C	31.2	0.08	13	m19
SB Surface Rd thru | thru | thru/right	A	7.3	0.51	40	66	A	6.7	0.51	42	48

Grey Shading indicates decrease to LOS E or F.
Black Shading indicates improvement from 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.

Based on Table 2-12, with the proposed improvements at the signalized intersection of Atlantic Avenue/Milk Street, the eastbound Milk Street left-turn approach improves from LOS F to D during both the peak hours. The signalized intersection of Atlantic Avenue/India Street/East India Row improves overall from LOS F to C and the westbound approach improves from LOS F to D during the p.m. peak hour. The signalized intersection of Surface Road/India Street continues to operate at the same LOS as the Build Condition during the a.m. peak hour, however, during the p.m. peak hour, the westbound India Street approaches improve from LOS E to C.

2.1.6 Transit Capacity Analysis

The V/C is used as the primary measurement to determine the impacts of the Project on transit. To calculate the V/C, ridership and capacity were determined for the Existing Condition to evaluate how the transit service operates today. Then, similar to the process of projecting vehicular traffic, the future ridership and capacity was developed both for the No-Build Condition, without the Project, and the Build Condition, with the Project.

The hourly capacity of the MBTA routes is determined by multiplying the vehicle capacity by the number of trips per hour, which is derived from the scheduled headways. To establish the capacity of this route, the MBTA's *Service and Delivery Policy* was referenced to establish the train car capacity. Based on this policy, the Blue Line runs at five-minute peak hour headways (12 trains per hour) with a train car capacity of 516 passengers, resulting in a 6,192-passenger maximum hourly capacity.

The vehicle load standards outlined in the MBTA's *Service and Delivery Policy* were used to determine the acceptable train capacity throughout the day by multiplying the load standard per car by the number of train cars by the number of hourly trains (derived from the headway).

2.1.6.1 Transit Volume to Capacity

As previously mentioned, the V/C ratio is the primary measurement to determine the impact the Project has on transit. The V/C ratio is a measurement of the number of passengers divided by the operating capacity. A V/C ratio of one (1) means the transit line is at capacity and any additional passengers either cannot fit or will cause delays to service as passengers try to squeeze on.

The Blue Line capacity, ridership, and volume to capacity ratio are displayed for all three conditions: Existing, No-Build, and Build, in Table 2-13.

Table 2-13 MBTA Blue Line Ridership and Capacity Summary – Max Rail Load at Aquarium

Time of Day	Trains	Planning Capacity	Existing Condition				No-Build (2026) Condition				Build (2026) Condition			
			Eastbound		Westbound		Eastbound		Westbound		Eastbound		Westbound	
			Ridership	V/C	Ridership	V/C	Ridership	V/C	Ridership	V/C	Ridership	V/C	Ridership	V/C
5-6 a.m.	7	3440	170	0.05	1676	0.49	180	0.05	1772	0.52	186	0.05	1776	0.52
6-7 a.m.	9	4816	607	0.13	3219	0.67	642	0.13	3404	0.71	705	0.15	3417	0.71
7-8 a.m.	12	6192	596	0.10	4446	0.72	630	0.10	4701	0.76	805	0.13	4742	0.77
8-9 a.m.	12	6192	472	0.08	4785	0.77	499	0.08	5059	0.82	695	0.11	5118	0.83
9-10 a.m.	12	6192	454	0.07	2398	0.39	480	0.08	2536	0.41	577	0.09	2603	0.42
10-11 a.m.	7	3440	555	0.16	1485	0.43	587	0.17	1570	0.46	676	0.20	1661	0.48
11 a.m. – 12 p.m.	7	3440	728	0.21	1197	0.35	770	0.22	1265	0.37	878	0.26	1419	0.41
12-1 p.m.	7	3440	1012	0.29	1113	0.32	1070	0.31	1177	0.34	1231	0.36	1339	0.39
1-2 p.m.	7	3440	1226	0.36	1248	0.36	1297	0.38	1320	0.38	1440	0.42	1434	0.42
2-3 p.m.	7	3440	2116	0.62	1505	0.44	2238	0.65	1592	0.46	2371	0.69	1702	0.49
3-4 p.m.	9	4816	3188	0.66	1668	0.35	3371	0.70	1764	0.37	3494	0.73	1900	0.39
4-5 p.m.	12	6192	4131	0.67	1606	0.26	4368	0.71	1698	0.27	4471	0.72	1922	0.31
5-6 p.m.	12	6192	4869	0.79	1406	0.23	5148	0.83	1487	0.24	5236	0.85	1717	0.28
6-7 p.m.	9	4814	3034	0.63	829	0.17	3208	0.67	877	0.18	3257	0.68	944	0.20
7-8 p.m.	7	3440	1921	0.56	578	0.17	2031	0.59	611	0.18	2064	0.60	661	0.19
8-9 p.m.	7	3440	1589	0.46	464	0.13	1680	0.49	490	0.14	1704	0.50	525	0.15
9-10 p.m.	7	3440	1608	0.47	404	0.12	1700	0.49	427	0.12	1716	0.50	459	0.13
10-11 p.m.	7	3440	1954	0.57	389	0.11	2066	0.60	412	0.12	2077	0.60	445	0.13
11 p.m. – 12 a.m.	7	3440	1944	0.57	260	0.08	2056	0.60	275	0.08	2065	0.60	282	0.08
12-1 a.m.	7	3440	792	0.23	84	0.02	838	0.24	89	0.03	842	0.24	91	0.03

As shown in Table 2-13, the Blue Line does not reach over capacity during any hour throughout the day during any of the three conditions analyzed. The transit volume graph is displayed in Appendix B.

2.1.7 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 new 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 tenants, employees, residents and guests of the Project. 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 exceptional transit access in marketing the Project to future tenants, patrons and customers by implementing the following TDM measures to encourage the use of non-vehicular modes of travel.

Potentiual TDM measures for the Project include but are not limited to the following:

Transportation Coordinator: The Proponent will encourage the property manager and/or representatives of individual lessees to designate a full-time, on-site employee as the transportation coordinator. The transportation coordinator will oversee all transportation issues. This includes managing vehicular and valet operations, service and loading, valet parking, and TDM programs.

Transit Pass Programs: The Proponent will encourage the property manager and/or individual lessees to foster employee use of transit by offering on-site transit pass sales and MBTA pass subsidies to employees.

Project Website: Project websites will include transportation-related information for visitors and employees.

Information and Promotion of Travel Alternatives: The Proponent will encourage the property manager and/or lessee's transportation coordinator to provide employees, tenants and visitors with public transit system maps, schedules, and other information on transit services in the area; provide an annual (or more frequent) newsletter or bulleting summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options; provide information on travel alternatives for employees and visitors via the Internet and in the building lobbies; and provide information on travel alternatives to new employees.

2.1.8 Transportation Mitigation Measures

The Proponent will continue to work with the City of Boston to create a Project that efficiently serves vehicle trips, improves the pedestrian environment, and encourages transit and bicycle use. In addition to the improvements that have previously been discussed, including signal timing and public realm improvements, the Proponent will fund the installation of a BlueBIKES station to be placed in the area in accordance with BTD guidelines.

The Proponent is responsible for preparation of the TAPA, a formal legal agreement between the Proponent and the BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, travel demand management measures, and any other responsibilities that are agreed to by both the Proponent and the BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed. The proposed measures listed above and any additional transportation improvements to be undertaken as part of this Project will be defined and documented in the TAPA

2.1.9 Evaluation of Short-term Construction Impacts

Most construction activities will be accommodated within the current Project Site boundaries,. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan ("CMP") to be filed with BTD in accordance with the City's transportation maintenance plan requirements.

To minimize transportation impacts during the construction period, the following measures will be considered for the CMP:

- Parking will not be provided on-site for construction workers;
- Construction workers will be encouraged to use public transportation and/or carpool;
- Consideration of a subsidy for MBTA passes for full-time employees; and,
- Providing secure spaces on-site for workers' supplies and tools so they do not have to be brought to the site each day.

The CMP to be executed with the City prior to commencement of construction will document all committed measures.

2.2 Environmental Protection

2.2.1 Shadow Impacts

The tower design has been developed with consideration of shadow impacts on the surrounding area and, per the DWMHP, avoids casting new shadow of more than one hour on the Long Wharf shadow prohibition zone (i.e., seaward of the Marriott Long Wharf) during the shoulder seasons. Additionally, the Project minimizes, to the extent reasonably practicable, net new shadow on other areas of the waterfront, including dedicated public parkland and publicly accessible open space in the DWMHP planning area.

In conformance with BPDA-employed methodologies that have been adopted for municipal harbor planning along Boston Harbor, a shadow impacts analysis for the Project has been conducted for October 23 for the hours from 8:00 a.m. to 5:00 p.m. The analysis identifies shadows that will endure for more than one hour.

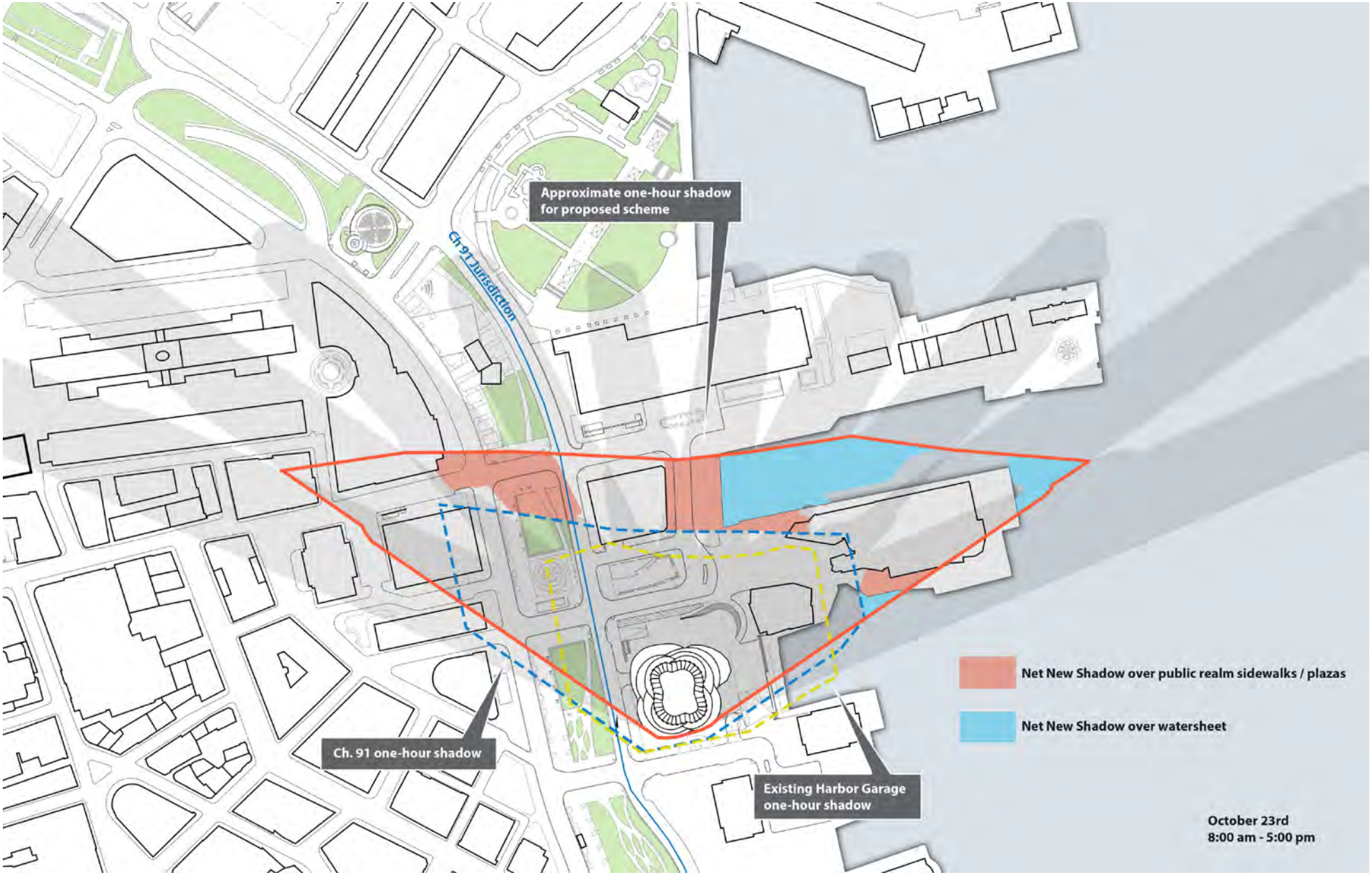
The BPDA selected October 23rd as the most appropriate date to evaluate shadow impacts on the pedestrian environment given both the sun's position as well as the seasonal needs of pedestrians. The BPDA determined that it is more appropriate to base sun/shadow standards at the end of what are traditionally considered the "outdoor months", when people often seek opportunities to spend time out-of-doors before the weather turns colder.

The Project's shadow impacts analysis evaluated the following conditions:

- Existing Shadow: Conditions associated with the existing building;
- Proposed Shadows: Conditions associated with the proposed tower; and,
- Chapter 91 Building Shadow: Conditions associated with the standard provisions of Chapter 91 as might be applied to the Project Site.

The results of the shadow impacts analysis are shown on Figure 2-21, which depicts the areas of net new shadow relative to an as-of-right (i.e., Chapter 91 compliant without regard for substitutions and offsets permitted under the DWMHP) build out. In general, the tower creates only a modest increase in shadow impacts as compared to an as-of-right build out and, as noted above, the tower will not cast net new shadow within the Long Wharf shadow prohibition zone.

A comprehensive shadow analysis demonstrating compliance with Sections 42A-16G and 49A-4.1 of the Code will be provided in the the Draft Project Impact Report ("DPIR"). The shadow analysis will depict build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn.



Boston Harbor Tower **Boston, Massachusetts**

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Figure 2-21

Net New Shadow – October 23rd

2.2.2 Wind

The Project has been designed with consideration of potential wind impacts on the gound-level environment. The tower's unique contours and numerous setbacks at various elevations will act to mitigate potentially adverse impacts associated with monolithic facades. Mitigation measures, as necessary, will be adopted, so that the Project will not cause ground-level ambient wind speeds to exceed City's requirements, including Article 49A Greenway Overlay District pedestrian safety and comfort wind standards. To ensure pedestrian comfort and safety around the Project Site and on the Project's new public open spaces, and to ensure that the ground-level environment is conducive to water-dependent activities, a comprehensive wind study will be completed for the Project and the results will be included in the DPIR.

2.2.3 Daylight

The purpose of a daylight analysis is to estimate the extent to which a proposed project affects the amount of daylight reaching the public streets in the immediate vicinity of a Project Site. The daylight obstruction value related to the Project is anticipated to be similar in daylight obstruction on streets in the surrounding area. The daylight analysis will be performed using the Boston Redevelopment Authority Daylight Analysis ("BRADA") computer program[3]. This program measures the percentage of "sky dome" that is obstructed by a project, and is a useful tool in evaluating the net change in obstruction from existing to build conditions at a specific site. Results of the daylight analysis will be provided in the DPIR.

2.2.4 Solar Glare

The Project will incorporate solar glare mitigation measures consistent with similar, newly constructed commercial developments in major North American urban centers that are adjacent to residential buildings, as necessary. The exterior skin of building will consist of varying low-reflectivity materials (e.g., masonry, metal, and Low-E glass), the use of which is not anticipated to result in adverse impacts due to reflected solar glare from the Project. Moreover, as described in Section 2.3.1 below, the proposed folded expression of the building façade will further reduce any potential solare glare impacts by scattering and diffusing light reflections, rather than allowing them to focus on any one point.

2.2.5 Air Quality

Potential long-term air quality impacts will be limited to emissions from Project-related mechanical equipment and pollutant emissions from vehicular traffic generated by the Project.

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

The Project team is evaluating measures to reduce energy demand and the potential emissions from the Project's mechanical equipment. It is expected that the majority of stationary sources (boilers, engines, etc.) may be subject to the MassDEP's Environmental Results Program. The Proponent will complete the required applications and submittals for the equipment, as necessary. The Project will also be subject to the City's Building Energy Reporting and Disclosure Ordinance ("BERDO") and the Proponent will work with the City to identify feasible strategies to align the Project with the City's Carbon Free Boston initiatives.

The Proponent is evaluating transportation demand management measures, including those identified in Section 2.1.7 above, to minimize vehicle use by site residents, tenants, employees, and visitors. The Project Site is located one block from the MBTA Blue Line Aquarium Station, steps from multiple commuter ferries, and within walking distance to North Station, South Station, multiple MBTA bus lines and the Orange, Green, Red and Silver Lines. The Project will include extensive bicycle facilities to encourage bicycling. In addition, the new public open spaces will include pedestrian pathways through and around the site to allow for safe and convenient use by pedestrians.

Construction period air quality impacts and mitigation are discussed below in Section 2.2.11

2.2.7 Tidelands

The Massachusetts Public Waterfront Act, M.G.L c. 91 ("Chapter 91"), provides for the protection of the public's right of waterway navigation and access to the Massachusetts shoreline. Chapter 91 is implemented through regulations promulgated and administered by the MassDEP Waterways Regulation Program. Along the Massachusetts coastline, Chapter 91 jurisdiction includes both existing flowed tidelands and former tidelands that are now filled. Development activities within Chapter 91 jurisdiction generally require a license, permit, or other approval from MassDEP.

The Project Site is located on filled private tidelands in close proximity to flowed tidelands. As such, work within these formerly flowed tidelands will require a Chapter 91 license. Consistent with the requirements of Chapter 91 and the DWMHP, the Proponent will obtain approval for the Project's proposed building and public realm improvements.

2.2.8 Geotechnical Impacts

This section describes existing site conditions, subsurface soil and groundwater conditions, and planned geotechnical related construction for the Project. Environmental considerations are also provided.

Existing Site Conditions

The Project Site is currently occupied by a nine-level parking garage (seven levels above grade and two below). Site grades at street level are relatively level at approximately 16.0-feet[4] BCB to 17.0-feet BCB Perimeter foundation walls and interior load bearing columns for the Garage are supported on end-bearing steel pipe piles having a design capacity of 90 tons in compression and deriving support within the underlying Glacial Deposits. The Garage has a lowest level slab elevation at -3.3-feet BCB. A series of timber pile foundations having a capacity of 25 tons in compression and 10 tons in tension support the lowest level mat slab and provide resistance due to hydrostatic uplift[5]. The tip elevations of the timber piles range from approximately El. -45.0-feet BCB to El. -60.0-feet BCB and terminates in the stiff marine clay layer.

Foundations for the northbound lane of the Central Artery/Tunnel (CA/T) section immediately abuts the west perimeter foundation wall for the existing Garage. The below-grade walls for the CA/T were constructed as a reinforced concrete diaphragm wall (slurry wall). Based on review of CA/T design plans, the bottom of the reinforced concrete diaphragm wall for the CA/T is approximately -50.0-feet BCB

Subsurface Soil and Bedrock Conditions

Numerous subsurface explorations have been conducted at the site since 1966. Subsurface conditions generally consist of Fill, Organic Deposits, Marine Clay, Glacial Till, and Bedrock and are summarized in Table 2-14 – Summary of Subsurface Units Encountered at Site.

Table 2-14 Summary of Subsurface Units Encountered at Site[1]

Subsurface Unit	Top of Stratum Elevation (ft)	Average[2] Thickness (ft)
Fill	El. 17.2 to El. -1.9	22.2
Organic Deposits	El. 2.4 to El. -16.9	14.2
Marine Clay	El. -7.0 to El. -31.0	33.8
Glacial Till	El. -31.0 to El. -64.9	32.1
Bedrock	El. -68.0 to El. -94.0	N/A

[1] Some of the subsurface units listed in Table 2-14 were not encountered in every boring.

[2] Estimation of average stratum thickness excludes test borings where respective stratum was not encountered.

4 Elevations reported herein are referenced to Boston City Base (BCB) Datum, wherein El. 0.0 BCB is 5.65 ft below the National Geodetic Vertical (NGVD 1929) Datum and 94.35 ft below CAT/THT Datum.

5 Harbor Towers Garage, Boston, Mass., Pile Location Plan and Subsurface Soils Information, January 1970.

Groundwater and Flood Conditions

Previous explorations indicate that groundwater levels at the site ranged from 12.0-feet BCB to 4.0-feet BCB at the time the subsurface explorations were conducted. Groundwater levels at the site are anticipated to fluctuate as levels are influenced considerably by tidal changes in the adjacent Boston Harbor. In particular, lunar tide cycles in Boston Harbor can increase high water level to 11.0-feet BCB to 12.0-feet BCB, with even higher levels resulting when lunar tides occur during a major storm surge. In January 2018 the water level in the Harbor was measured at 16.1-feet BCB.

Much of the site is located just beyond the 100-year flood zone (Zone AE) but is with the 500-year flood zone (Zone X) based on the FIRM Map (March 2016) developed by Federal Emergency Management Agency (FEMA).

The Project Site is also within the buffer zone to Coastal Bank and Land Subject to Coastal Storm Flowage, as defined by the Wetlands Protection Act and associated regulations, 310 CMR 10.00 et seq. Accordingly, the Project will be designed in compliance with the Wetlands Protection Act performance standards. The Project Site will also be subject to jurisdiction under the recently enacted City of Boston Wetlands Ordinance.

Estimates of sea level rise within the City of Boston, for planning purposes, anticipate 40 inches of sea level rise through calendar year 2070. The BPDA's Sea Level Rise – Flood Hazed Map, which models a 1% annual chance flood event with 40 inches of sea level rise, establishes a Sea Level Rise - Base Flood Elevation ("SLR-BFE") for the Project Site of 19.5-feet BCB. The tower will exceed BPDA's guidelines by incorporating 18 inches of freeboard at the ground level, resulting in a first-floor elevation of 21.0' BCB.

The Project team is evaluating and/or planning the incorporation of additional measures to mitigate against flood impacts, including:

- Elevating the vast majority of the site above anticipated base flood elevations with estimated contributions of sea level rise and evaluating similar solutions for the adjacent Harborwalk section of East India Row,
- Placing essential mechanical equipment above the future flood level;
- Water-tight conduits;
- Automated flood barriers at parking garage entrances;
- Stormwater retention garden network;
- Stormwater storage, treatment, and reuse;
- Wastewater backflow prevention; and,

- Resilient materials on the first floor that can either withstand flooding or easily be replaced.

Site Constraints and Considerations

The Proponent will evaluate whether to locate a new reinforced diaphragm wall outside the limits of the existing Garage walls or inside the limits of existing Garage. Ideally, the new reinforced concrete diaphragm wall will be located outside the existing Garage wall system to avoid existing pile foundations supporting the Garage. If constructed outside the limits of foundations for the existing Garage, coordination with existing easements and public rights in the respective ways will be required.

A sewer line syphon is located within Level B2 of the Garage; adjacent to the west perimeter foundation wall of the Garage. Piping for the sewer line syphon is oriented in the north-south direction. Below-grade construction will require maintaining operation of the system and relocation of the sewer line syphon.

Due to the Site's proximity to Boston Harbor, design of the Project will continue to evaluate potential flooding and sea level rise impacts at the Project's garage entrances and perimeter foundation walls. The design will incorporate appropriate protective measures.

Proposed Subsurface Construction

The proposed Project includes construction of a single tower with below-grade parking, as described in Section 1.0. The ground floor of the tower will be established at approximately 21.0-feet BCB and surrounding site features/improvements will be designed and constructed with strategies toward achieving resilience against potential future flooding at the site.

The portions of the tower to be constructed over the below-grade parking structure are planned to be supported on reinforced concrete footing and mat foundations bearing on the natural, inorganic glacial deposits. The excavation will be conducted within an engineered lateral support of excavation ("SOE") system constructed using slurry wall methods. The SOE system will be designed to provide excavation support, limit ground movements outside the excavation to protect adjacent facilities, and maintain groundwater levels outside the excavation by creating a groundwater "cutoff" between the excavation and the surrounding area. The SOE system will be designed to be installed/sealed into the glacial deposits and bedrock to isolate the excavation and future below-grade garage from the groundwater table. Due to the depth of excavation, the SOE system will be supported by an internal bracing system. Pre-excavation will be performed along the perimeter of the existing garage to remove and/or relocate obstructions prior to installing the SOE system. Penetrations through the permanent below-grade walls (such as for utilities) will be permanently sealed.

Temporary dewatering will be required inside the excavation during excavation and foundation construction to remove "free" water from the soils to be excavated, as well as precipitation. The essentially watertight excavation support wall will prevent withdrawal of groundwater from outside the excavation. Any leakage through the walls will be promptly sealed by grouting.

A temporary construction dewatering permit will be obtained prior to discharge of dewatering effluent from the site. Testing of the effluent will be conducted prior to and during discharge, in conformance with applicable permit requirements.

Potential Impacts During Below-grade Construction

In general, potential impacts during excavation and foundation construction include temporary lowering of area groundwater levels, ground vibrations, noise, and ground movements outside of the excavation. Foundation construction will be conducted to control and limit potential adverse impacts, especially to adjacent structures and to groundwater levels.

Mitigation Measures

Mitigation measures will be incorporated into the design and construction of the Project to limit potential adverse impacts to immediately adjacent areas, including the following:

- The Project team will conduct studies, prepare designs and specifications, and monitor the contractor's performance for conformance to the Project's contract documents with specific attention to protecting nearby structures and facilities, and preventing groundwater lowering. Selection and design of the foundation type and excavation support system type will be made with careful attention to mitigating adverse temporary and long-term effects outside the Project Site.

- The Project team will work closely with MassDOT in developing a foundation design that utilizes construction methods that maintain the safety and integrity of the CA/T structure and it appurtenances throughout and following construction.

- Performance criteria will be established in the Project specifications for the foundation installations and lateral excavation support system. Instrumentation will be installed and monitored before and during the below-grade portion of the work to observe the performance of the excavation, adjacent structures and utilities, and area groundwater levels.

2.2.9 Solid and Hazardous Waste

Hazardous Waste

Considering the historic fill placement and previous site development, the potential exists that the Project Site soils could contain concentrations of chemical constituents that may exceed applicable threshold values and require new reporting to MassDEP under the Massachusetts

Contingency Plan ("MCP"). If a new reporting condition is encountered, MassDEP will be notified and the appropriate studies performed as required under the MCP. Characterization of the soil and groundwater at the Project Site will be conducted by the Proponent, and laboratory testing of soil and groundwater to be generated as a result of construction activity will be performed at the appropriate stage of the design process to further evaluate Project Site environmental conditions.

Solid Waste

The Project will generate solid waste typical of commercial and residential uses. Solid waste is expected to include wastewater, cardboard, glass bottles and food. Recyclable materials will be recycled through a program implemented by building management.

2.2.10 Noise Impacts

The mechanical equipment for the Project has not been finalized at this preliminary design stage, but it is anticipated to be similar to that used on similarly sized commercial and residential buildings. Rooftop equipment will be screened, and acoustic screening may be included for any mechanical equipment, if necessary, to meet local noise standards. The Project team will ensure that the tower's mechanical equipment will meet the City of Boston Noise Standards.

Construction period noise impacts and mitigation are discussed below in Section 2.2.11

2.2.11 Construction Impacts

Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during demolition, excavation and construction include mechanical street sweeping, wetting portions of the Project Site during periods of high wind, and careful removal of debris by covered trucks. Construction contracts will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;
- Minimizing spills on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the construction site; and,
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

Construction Noise and Vibration

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities. As feasible, all means and methods for performing work at the site will be evaluated for potential vibration impacts on adjoining property, utilities, and adjacent existing structures. If necessary, vibration criteria will be established prior to construction, and vibration will be monitored during construction to ensure vibration impacts, if any, are consistent with the criteria.

Mitigation measures are expected to include:

- Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and,
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

Construction Waste

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the construction waste disposal contracts. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

Rodent Control

A rodent extermination certificate will be filed with each building permit application for the Project. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work for each phase of the Project, in compliance with the City's requirements.

Wildlife Control

The Project Site is currently developed and within a fully developed urban area and, consequently, the Project will not impact wildlife habitats as designated on the National Heritage and Endangered Species Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife maps.

Protection of Aquarium Animal Life

The Proponent will work with the Aquarium to develop, as necessary, reasonably measures intended to mitigate any adverse impacts (particularly noise and vibration) to animals housed at the Aquarium resulting from construction activities. As noted above, construction work will comply with the requirements of the City of Boston Noise Ordinance and every reasonable effort will be made to minimize the collateral impacts of construction activities.

2.3 Urban Design

2.3.1 Design Concept

The design for The Pinnacle at Central Wharf has been shaped by and has evolved in response to multiple factors, including existing site constraints, coordination and collaboration with neighboring properties, pedestrian and vehicular circulation in and around the Site, environmental concerns, such as wind and light, sustainable initiatives, climate resiliency, as well as various DWMHP provisions. The resulting massing represents a successful balance between satisfying all of these forces and creating meaningful architectural expression for a prominent site on Boston's waterfront.

The placement and footprint of the tower has been driven primarily by the open space requirements and guidelines of the DWMHP, most particularly the mandate to preserve 50% of the Project Site as open space. A large public plaza was created along Milk Street by allocating 30% of the open space to the north. This grand plaza along historic Central Wharf will create a new East-West pedestrian connection between the Greenway and the water, and is a key component for the full realization of the proposed Blueway vision. The tower footprint was limited to 50% of the Site and designed to maximize public spaces along Central Wharf to the north and along the Harborwalk to the east, while locating 10% of the open space on the Project's south side for additional separation from the adjacent Harbor Towers residences for privacy and views. Careful thought was given to the placement of ground floor lobbies and ramps to best

meet the needs of building occupants, respect concerns of the City and neighboring properties, and enhance the public experience. Retail frontage has been maximized to create a vibrant street wall along three sides of the Site.

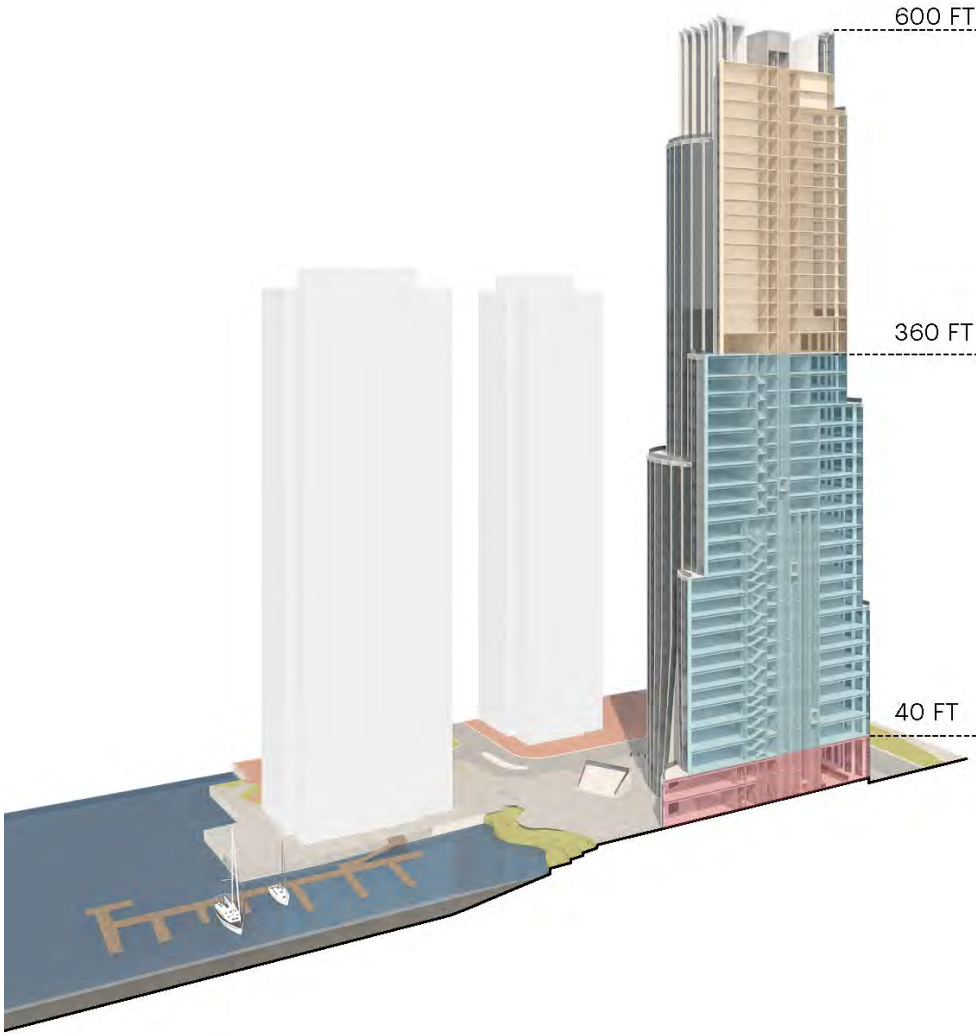
In response to the DWMHP requirement limiting shadow fall on Long Wharf, the tower form took on a stepped language, with the mass reducing through a series of setbacks as the building ascends. In addition to reducing the shadow fall, these setbacks also break down the scale of the tower, relate to heights of neighboring buildings, improve wind mitigation, provide outdoor spaces to building occupants, and open view corridors for neighboring Harbor Towers residences. The resulting form is an extruded geometry, where volumes peel apart from one another and step back as the tower rises, creating a stepped expression that is wider at the base and narrow at the top (Figure 2-22). The tower shape reflects the program within, starting with retail at the base, (Figure 2-23 to Figure 2-26) followed by a series of setbacks up the height of the tower that reduce the floor plate size for proper leasing depths through the office portion, and continuing to the upper portion with the smallest floor plate for residential units where shallower depths are desired. Each of the setbacks creates exterior terraces that are accessible to the building occupants. The stepped form becomes a unique and powerful image on the skyline while being respectful of the existing context (Figure 2-27).

Another strategy that was used to reduce the shadow impacts was a rounding of the overall form of the tower into a clover-like plan. This also had the added benefits of easing pedestrian flow around the base of the building by creating smooth circulation paths (Figure 2-28) and opening up view corridors to the water (Figure 2-29). The rounded form was given a more refined expression by folding the façade in and out along the perimeter of the tower. The folded expression of the façade enhances the verticality of the tower, which is further emphasized by treating one side of the fold as a solid panel, creating vertical bands. As well as improving the appearance of the tower, the folded language acts to mitigate wind as it travels around the tower, and reduces any potential impacts of solar glare by scattering and diffusing light reflections, rather than allowing them to focus on one point. The façade is based on a plan module of approximately seven feet of glass and three feet of solid, with the solid portion expressed as a metal or terra cotta panel. Grand gestures are created at the entry points in the podium for the office lobby, residential lobby, retail, and primary parking garage ramp, as well as at alongside the terrace facing the harbor (Figure 2-30). At these moments, the vertical piers peel apart like a curtain to reveal a special façade expression, and serve as markers, with the tallest and largest opening at the office lobby facing the southwest corner of the Site.

2.3.2 Exterior Building Materials

As noted above, the tower's façade takes on a folded expression, with alternating solid and glass bands of approximately three feet wide and seven feet wide respectively. Early in the design process, it was decided that this project should not read as an all-glass tower, as is often seen in newer developments. In order to connect to the rich diversity in texture and materiality of many existing historical buildings in Boston, it was important to maintain a solid expression in the

Program



The Pinnacle at Central Wharf **Boston, Massachusetts**

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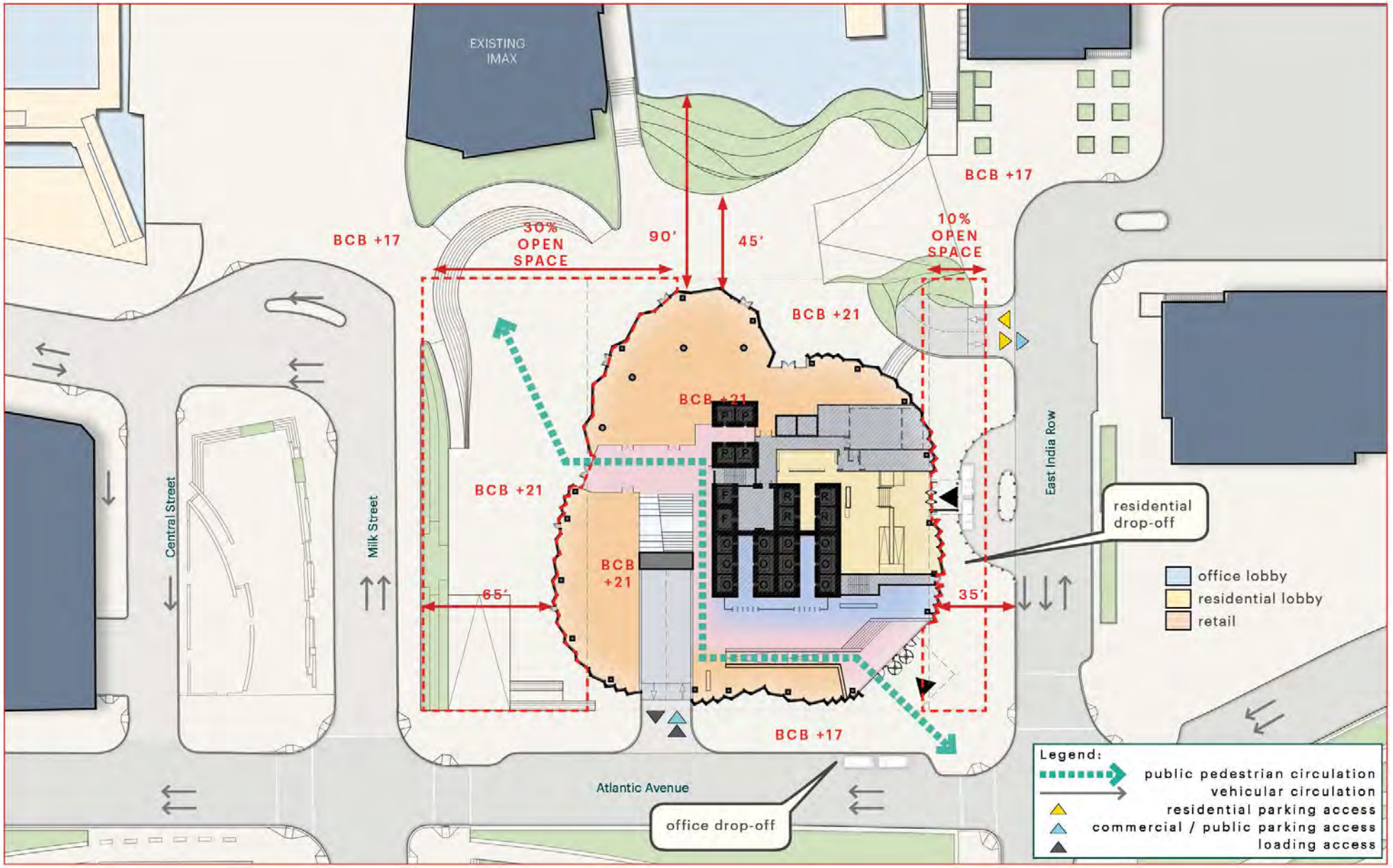
Figure 2-22
Building Section



Boston Harbor Tower **Boston, Massachusetts**

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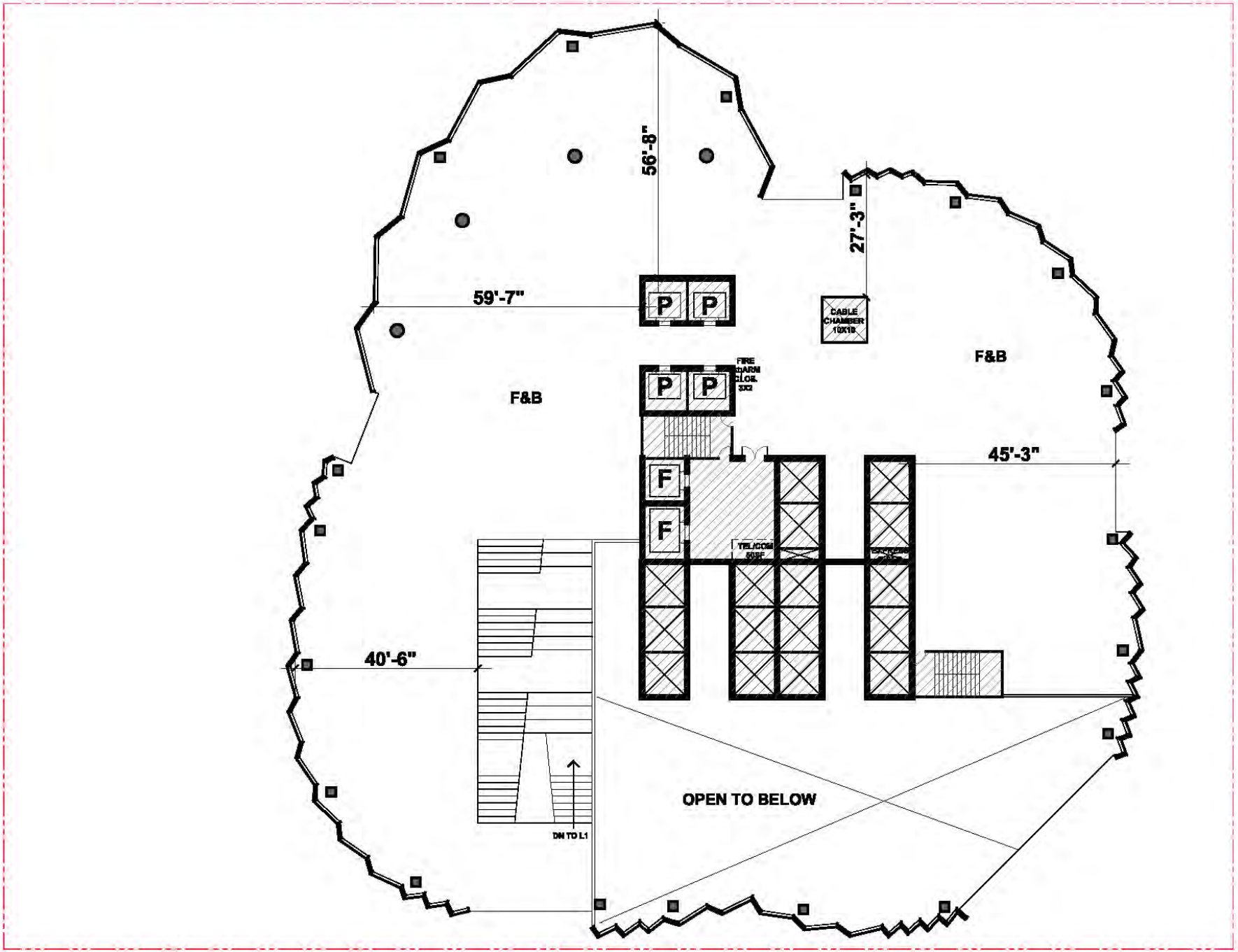
Figure 2-23
Ground Floor Plan



Boston Harbor Tower **Boston, Massachusetts**

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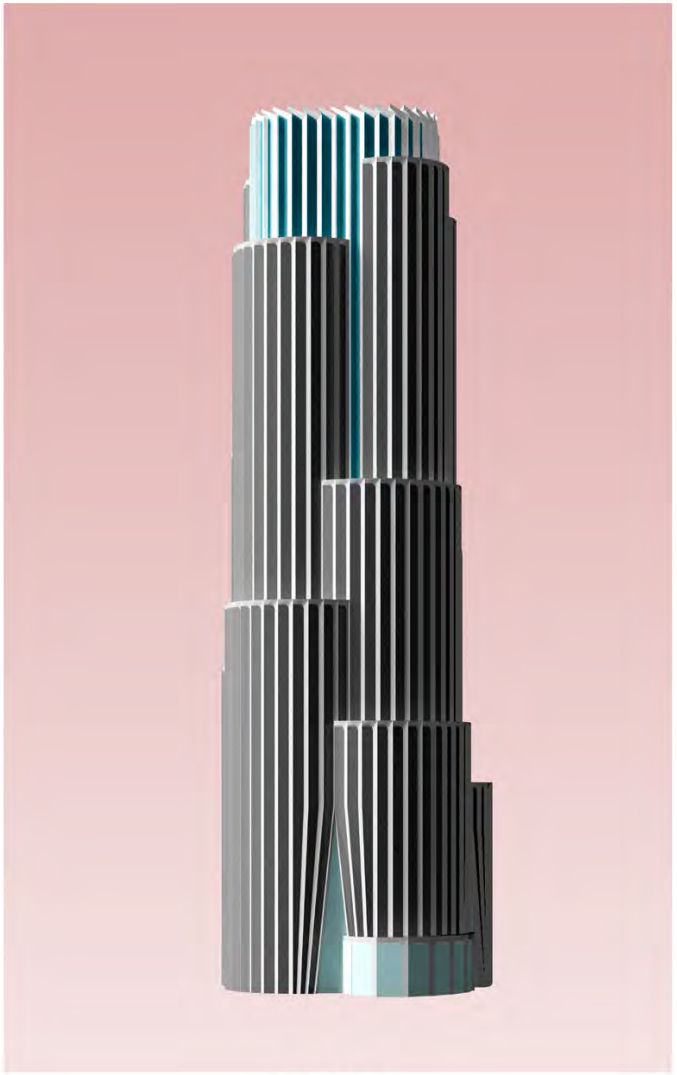
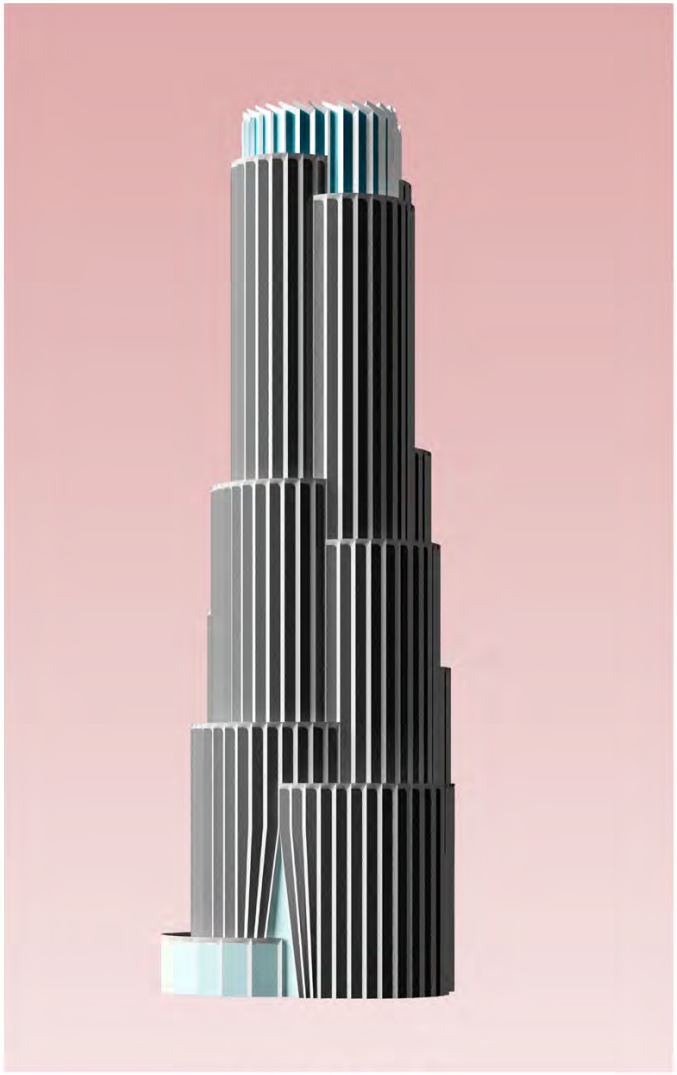
Figure 2-24
Second Floor Plan

Elevations



HARBOR



MILK STREET

The Pinnacle at Central Wharf **Boston, Massachusetts**

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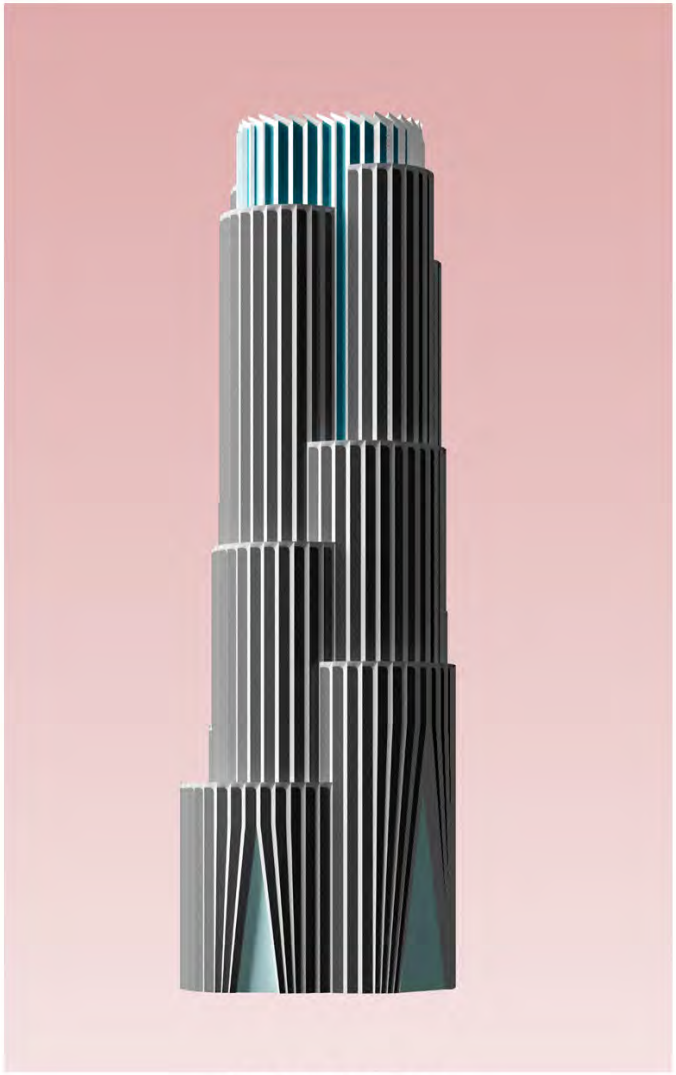
Figure 2-25

North and East Elevations

Elevations



ATLANTIC AVE

EAST INDIA ROW

The Pinnacle at Central Wharf Boston, Massachusetts

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Figure 2-26

South and West Elevations

The Pinnacle at Central Wharf Boston, Massachusetts

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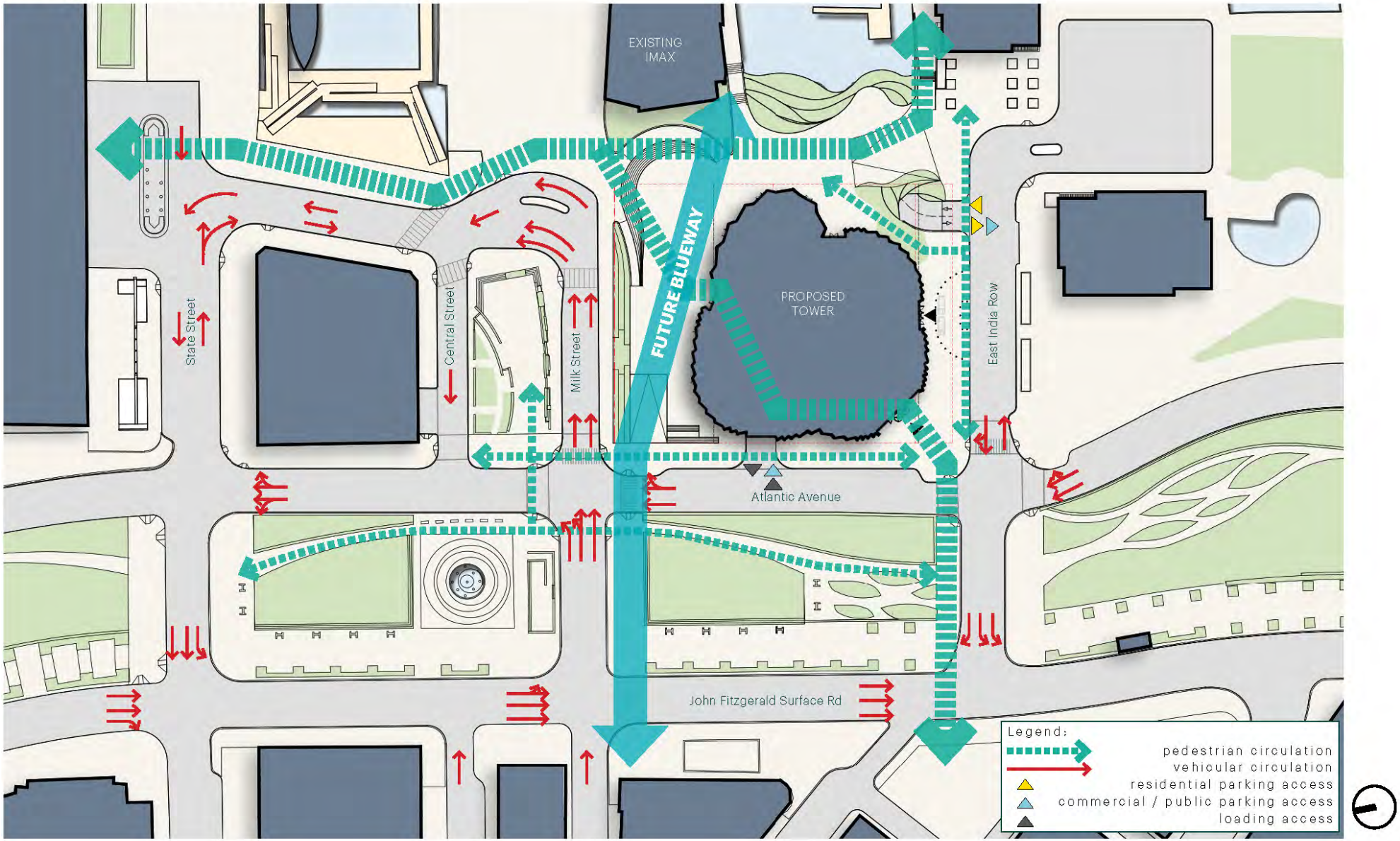
Figure 2-27
Skyline View

Proposed Circulation



Boston Harbor Tower **Boston, Massachusetts**

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Figure 2-28
Circulation

The Pinnacle at Central Wharf Boston, Massachusetts

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Figure 2-29

Central Wharf View Corridor

The Pinnacle at Central Wharf Boston, Massachusetts

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Figure 2-30

View from Greenway – Southwest Corner

exterior. Various materials are being explored for this solid portion of the façade, such as glazed terracotta, or painted metal. To express an even more fine-grained texture, these solid pieces will have folded profiles. The glass will be Low-E, high performance, insulated glass units, with low reflectivity. The large scale of these glass panels will allow abundant natural light into the interiors and frame expansive views to the exterior for building occupants.

2.3.3 Height and Massing

Height and massing has been influenced by building program requirements, DWMHP provisions, separation from neighbors, Federal Aviation Administration ("FAA") height limitations, wind, light, and providing access to exterior space for occupants as described in the tower design evolution section. A stepped, extruded form was a successful solution for meeting all of these site constraints, relating to neighboring buildings, and creating a strong image for the skyline (Figure 2-31).

2.3.4 Overall Site Design Approach

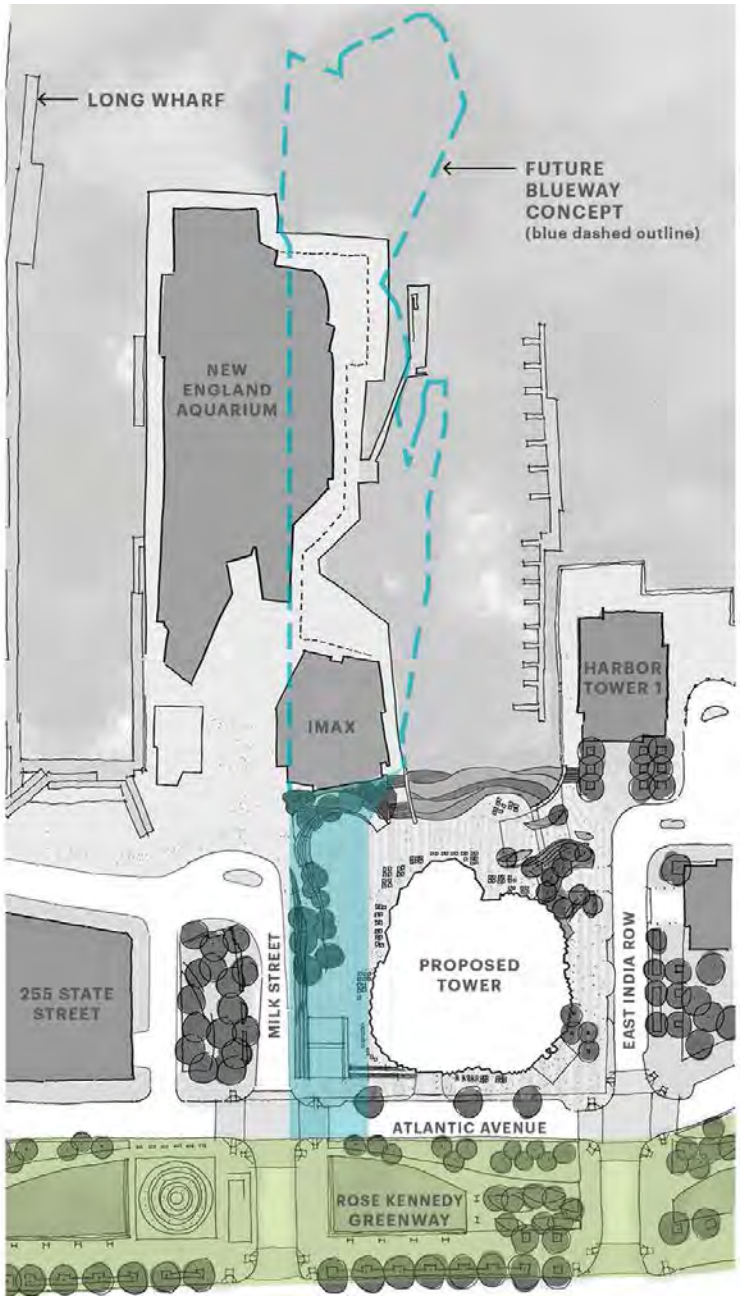
The Site design for the Project strives to build a unique civic space and destination in the heart of Boston. As the DWMHP states, "this is where Boston touches the water." The Site is a hub of activity where the Harbor, the Rose Kennedy Greenway, the New England Aquarium, and the Harborwalk converge, bringing together a diverse group of tourists, locals, and people of all ages and backgrounds (Figure 2-31). The Site represents an opportunity to entertain, teach, inspire, and to make a first impression, shaping the image of the Boston Waterfront through iconic placemaking.

The proposed design will be responsive to its context, drawing influence from and making meaningful connections to the adjacent conditions. It will offer a rich array of experiences to its many users, guiding them through the Site in a comfortable, efficient, and accessible way. The design will prioritize pedestrians, allowing users to feel safe and free to be fully immersed in their surroundings.

Additionally, the proposed design addresses climate change by elevating the Project Site and adjacent Harborwalk to buffer and protect the building, infrastructure, and public realm from sea level rise and storm surge. In addition, green infrastructure elements, such as shade trees and planting areas, will provide ecosystem services and mitigate the effects of extreme heat events and intense rainstorms described in Section 2.5, below.

The northeast corner of the Site includes an interim condition with an accessible ramp and stairs connecting the plaza down to the current elevations around the IMAX theater (Figure 2-32). An aspirational version of the proposed design illustrates how the northeast corner of the plaza is

CLIMATE READY BOSTON:
RESILIENT BOSTON HARBOR

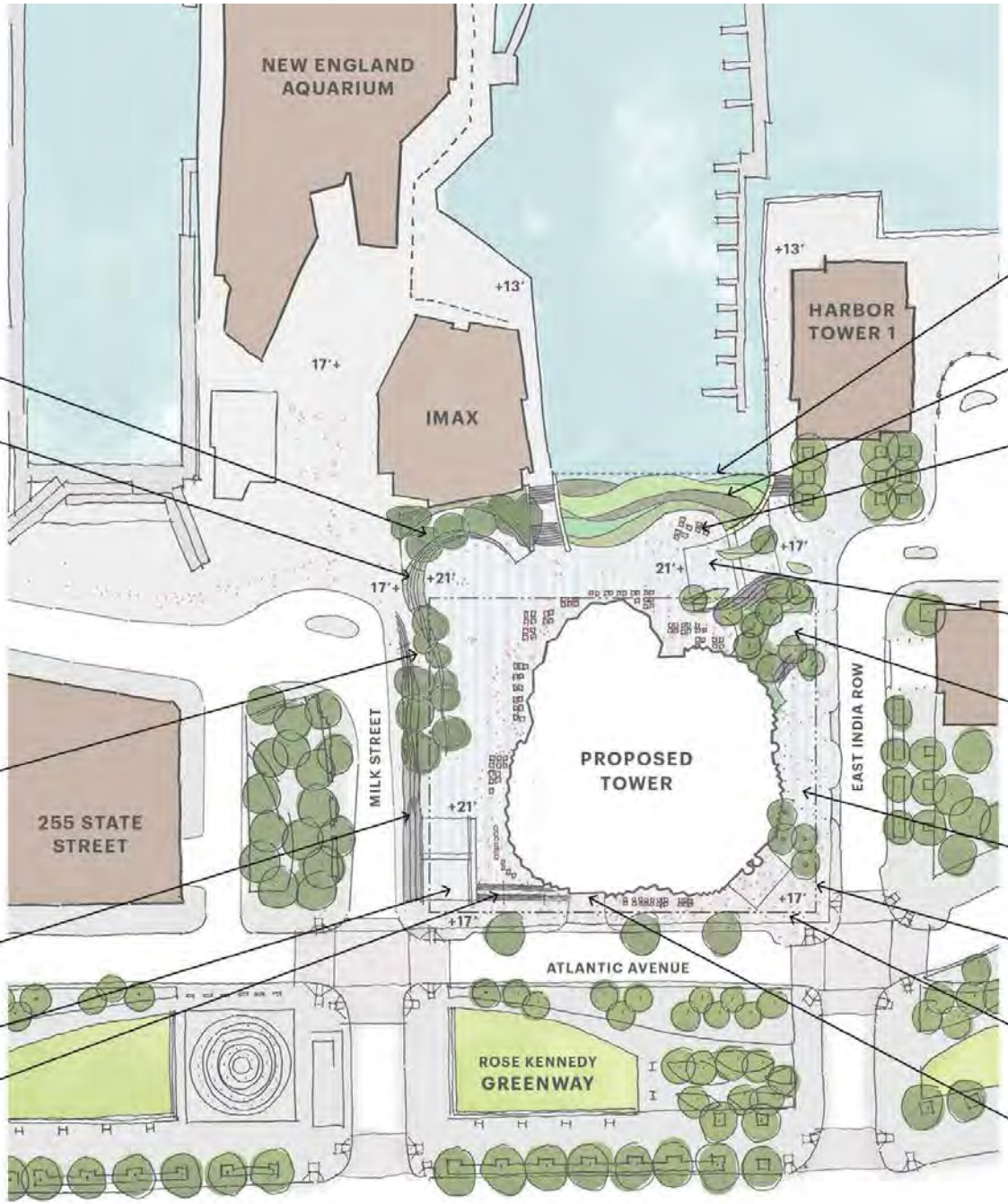


The Pinnacle at Central Wharf Boston, Massachusetts

Copley Wolff Design Group
Landscape Architects & Planners

Figure 2-31
Concept Plan –Greenway to Blueway

Site Plan
EXISTING NEAQ CAMPUS



The Pinnacle at Central Wharf Boston, Massachusetts

Copley Wolff Design Group
Landscape Architects & Planners

Figure 2-32
Site Plan – Existing New England Aquarium Campus

adaptable to blend with the New England Aquarium's publicly stated vision for the future of its parcel, which may include the removal of the IMAX theater, a renovated and expanded main building, and implementation of the Blueway vision for harbor access (Figure 2-33)[6].

2.3.4.1 Public Realm Programming

The Project's public realm programming will be driven by both the interior programming of the building and the mix of uses immediately surrounding the Site. The Project's program harnesses the energy resulting from the Site's proximity to commercial, retail, residential, cultural, and recreational assets and fosters an active and dynamic public realm, on and around the Site.

The Project's public realm space comprises of a variety of outdoor rooms, strategically laid out to establish view corridors along the Harborwalk and to the Aquarium. As described below, the public realm programming and design will maximize the water-related public benefits available at this Site and attract and maintain substantial public activity on the Site on a year-round basis:

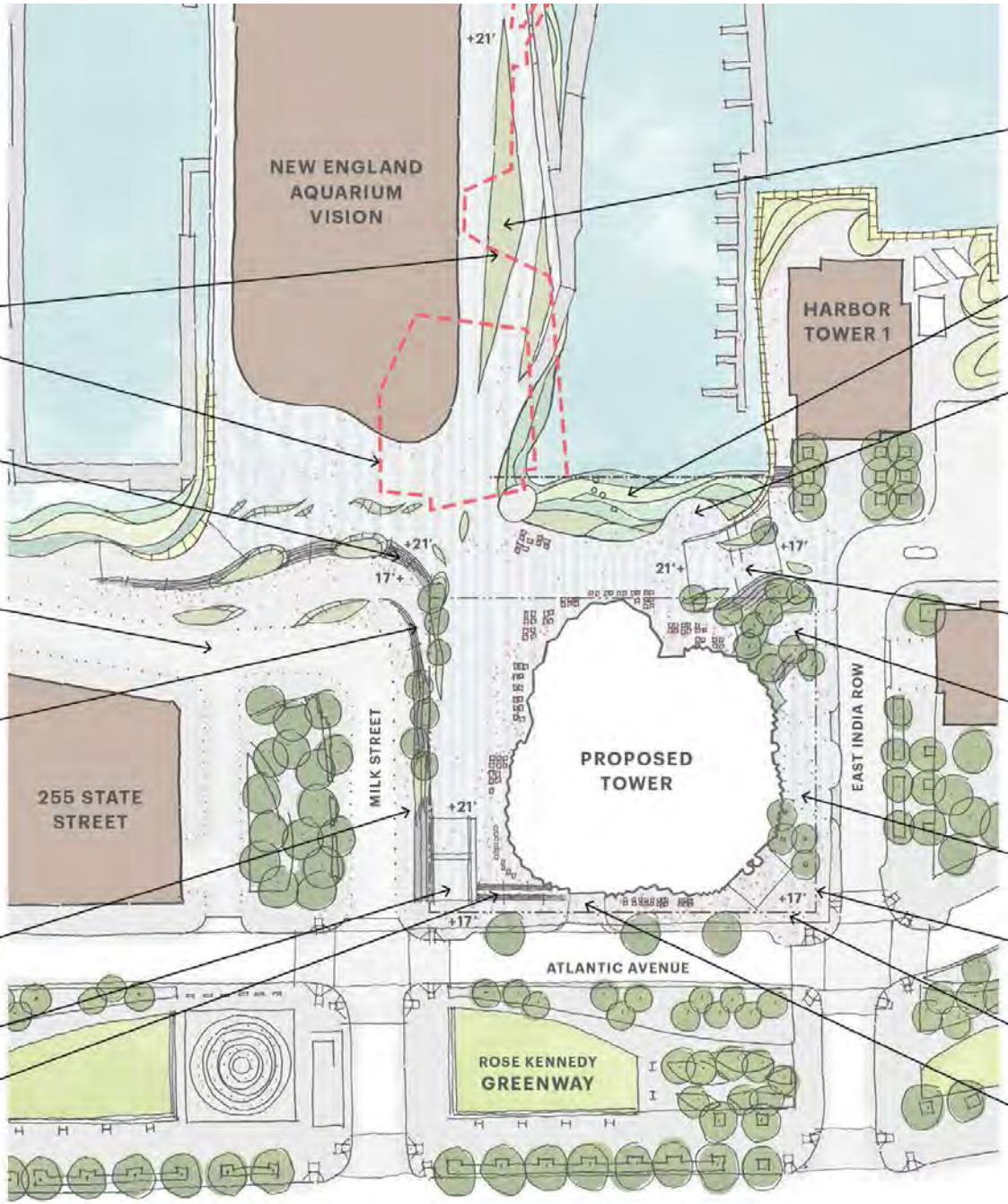
- Along the Central Wharf plaza, consistent with the proposed Blueway vision, views and wayfinding will take priority, guiding users from the Greenway toward the Aquarium. The edges of the plaza will offer raised seating, allowing for passive uses such as people-watching and enjoyment of views to and across the Harbor.

- The open spaces immediately surrounding the tower will require the most flexibility in use. Programming here will respond to daily and seasonal changes, allowing transformation intoa large event space and supporting temporary installations to activate the plaza during morning and evening hours, and even during cold weather months, without feeling vacant or vast on an average day. Movable site furniture, planting elements, and opportunities for public art will be utilized to adjust the scale of the space, so it feels appropriate for every occasion. Infrastructure needed to support the variety of programming will be incorporated into the plaza design to provide substantial public benefit and maximize functionality; for example, dynamic site lighting, utilities for music events or art installations, appropriate access for food trucks and event setup, and multimedia capabilities will all be supported by the final design (Figure 2-34).

- As further described in Section 2.3.5.2 below, the Project envisions reimagining and invigorating the adjacent section of the Harborwalk to honor its location at Boston's "front door to the world." Through elevation, upgrades, and activation, this public asset will be transformed into a Porch for the City and the region.

[6] Source: www.neaq.org/about-us/mission-vision/blueway

Site Plan
NEAQ MASTER PLAN CONCEPT (FUTURE)



existing IMAX and CENTRAL WHARF edge (red dashed line)

elevate grade from 17' to 21' for resiliency

OLD ATLANTIC and MILK as flush streetscapes

8% ADA ramp at curvilinear steps

public art opportunities

8% ADA ramp

monumental stairs

extend BLUEWAY to GREENWAY

organic
New England rocky tidal ledges

overlook cantilevered deck

8% ADA ramp

EAST INDIA garage entrance

flush residential dropoff

property line

orthogonal
city edge

ATLANTIC garage/ loading entrance

The Pinnacle at Central Wharf **Boston, Massachusetts**

Copley Wolff Design Group
Landscape Architects & Planners

Figure 2-33
Site Plan – New England Aquarium Master Plan Concept

The Pinnacle at Central Wharf Boston, Massachusetts

KPF

Figure 2-34

Seasonal Programming - Summer

- Subject to collaboration and coordination with abutters, the Project will create a waterfront overlook at the water's edge, inviting the public to get close to the water and enjoy views across the harbor. The overlook can be populated with moveable furniture of different types and configurations, so users can sit and read a book, lunch with coworkers, or take a break from walking tours to chat with their travel companions. Furniture can be removed for large events or gatherings. It also provides an opportunity for school groups or tour groups to gather and view the tower, the Aquarium, other activity in the plaza; as such, it will be a key location for interpretive signage. This overlook is envisioned as an integrated feature of a new, resilient "living shoreline" to be installed landward of the existing seawall.

- Detailed design of the ground plane will emphasize the connection of outdoor programming to interior spaces and also provide opportunities for wayfinding and interpretive elements. Commercial activity within the building will be supported by flexible seating and event space outside, and spaces suitable for use as outdoor classrooms will support educational programming.

- Building on decades of experience programming and activating the public realm at International Place, the Proponent will utilize a combination of dedicated personnel, including property management employees and/or contracted placemaking staff that will be specifically tasked with ensuring that public realm programming attracts and maintains substantial public activity on the Site on a year-round basis, and works with stakeholders and other interested parties to develop and retain new, engaging programming that maximizes the provision of public benefits at and around the Project Site.

2.3.4.2 Wayfinding and Interpretation

Site improvements will include interpretive and wayfinding elements to enhance user experience and honor the things that contribute to the Boston Waterfront's sense of place. Interpretation will be both environmental and historical, building on efforts like the Norman B. Leventhal Walk to the Sea, and speaking to both the history of the land use and the ecology of the Harbor.

Patterning of the ground plane will harken to estuary ebb and flow lines, relating the site to a New England tidal shoreline.

Wayfinding efforts will focus on connecting people from the Greenway, to the Harbor and the Aquarium, unlocking the potential for the proposed Blueway, connecting to the Harborwalk, and orienting users within the City. A hierarchy of wayfinding strategies will be applied, from grand gestures like a potential vertical marker system with multimedia elements along the Central Wharf plaza, to finer-grained signage, and subtle directional elements in the hardscape.

2.3.5 Public Open Space and Landscaped Areas

The Project includes approximately 28,673 sf of publicly-accessible open space, 50% of the overall Site area. The open space meets East India Row to the south, Atlantic Avenue to the west, Milk Street to the north, and the Haborwalk to the east, beyond which are the Aquarium to the northeast, the Harbor to the east, and the Harbor Towers property to the southeast.

2.3.5.1 Streetscapes: Atlantic Avenue and East India Row

The public sidewalk along Atlantic Avenue and the vehicular portion of East India Row will be widened to improve pedestrian flow and provide amenities, consistent with the City of Boston's Complete Streets recommendations. The amenities will be located in a furniture zone: a wide, permeable strip at the curb lined with street trees and populated with street furnishings, such as bike racks, litter and recycling receptacles, and street lights. This placement of amenities also benefits pedestrians by providing vertical, visual elements to buffer them from the vehicular zone. The frontage zone, at the building face, will be paved and programmed in response to the building architecture and interior programming. For example, an interior café program will be complemented by outdoor café seating.

2.3.5.2 Harborwalk and Central Wharf

The Project will retain and enrich the Site's status as an important hub of the Boston Harborwalk, not only linking the Harborwalk on the Aquarium site to the Harborwalk on the Harbor Towers site but also providing a vastly improved connection to the Greenway. Adjacent to the Project Site, the Harborwalk will be transformed into a fitting "front porch" that is fully accessible, welcoming and well-illuminated, and will realize its true potential as a promenade and a gathering place (Figure 2-35).

The northern edge of the Project Site, along historic Central Wharf, will be designed for seamless integration into the Aquarium's proposed Blueway vision and planned renovation/expansion, while connecting the Aquarium property to the Greenway. The Central Wharf edge will include stepped seating and pockets of littoral zone planting that make up the grade change between a widened Milk Street sidewalk and the elevated multi-use plaza. The linear space will also accommodate a potential outdoor learning environment, suitable for integration with Aquarium educational programming, and presents an opportunity, consistent with the proposed Blueway vision, to install wayfinding elements to visually signal the pathway from the Greenway to Central Wharf and onto the Harbor.

The Pinnacle at Central Wharf Boston, Massachusetts

KPF

Figure 2-35
The Porch

2.3.6 Pedestrian Circulation

While the public realm condition is tailored to each unique edge condition, three goals remain consistent throughout: prioritizing the pedestrian experience, maximizing outdoor programming opportunities, and connecting people from the Greenway to the water.

The footprint of the tower was positioned to maximize space for pedestrian circulation along the Central Wharf plaza to the north and along the Harborwalk to the east. With 30% of the Site's open space concentrated on the north, a strong East-West connection between the Greenway and the Harbor is created, with a pedestrian-friendly plaza design that is accessible through steps and ramps at various locations. In addition, a public corridor flows through the ground floor plan of the tower connecting the southwest corner of the site to Central Wharf to the North and East. This will be activated with various retail spaces and dining options. The interior public circulation wraps up to to the tower's second level, above the vehicular ramp, through series of steps with integrated seating areas which will also offer elevated views of the Greenway to the West.

2.3.6.1 Multi-use Plaza and Building Entries

Grand, sloped walkways will provide comfortable, welcoming and accessible connections from the streetscapes up to the Central Wharf plaza and Harborwalk Porch adjacent to the north and east sides of the building, elevated in preparation for the ongoing impacts of climate change.

Entry plazas off of Atlantic Avenue and East India Row with special paving will be located at the office and residential lobby entrances. All shared zones for both pedestrians and vehicles, such as the residential drop-off and garage entrances, will be flush and paved consistent with the sidewalk to prioritize the pedestrians over the vehicles. Bicycle infrastructure will also be integrated into the Project.

2.3.6.2 Adjacent Intersections

Intersection improvements implemented as part of the Project will be designed with the intention of improving pedestrian safety and pedestrian traffic flow to and from the Greenway and along Atlantic Avenue. This will be achieved through the strategic layout of intersections and through the use of paving materials to visually differentiate areas for pedestrians. As noted in Section 2.1.8, all abutting sidewalks and pedestrian ramps at the Project Site and at other locations proximate to the Site to be agreed upon with the City will be constructed to the City's standards in accordance with the Boston Complete Streets design guidelines. This will include the reconstruction and widening of the sidewalks where possible, the installation of new, accessible ramps, improvements to street lighting where necessary, planting of street trees, and providing bicycle storage racks surrounding the site, where appropriate.

2.4 Sustainable Design

2.4.1 Introduction

The Proponent believes that optimum building performance and environmental responsibility are fundamental components of the Project. The Project's sustainability goals seek to leverage the many benefits of the Site while using the most up-to-date knowledge and experience to design a building that minimizes energy use, conserves water, conserves natural resources, and supports the health and wellbeing of building occupants. To track sustainability, and consistent with Article 37 of the Code, the Project team will use the Leadership in Energy and Environmental Design ("LEED") rating system – LEED v4 Core and Shell ("LEED").

The design team for the Project includes several LEED Accredited Professionals, including members from KPF, Epsilon, and Cosentini. The Proponent and design team will continue to evaluate and incorporate sustainable design and energy conservation measures as the design process proceeds.

In support of the City's Green House Gas ("GHG") emissions reduction goals and guidelines for Zero Emissions Buildings, the Proponent will prepare a project-specific Carbon Neutral Building Assessment by modeling a low carbon building design with an enhanced building envelope, and optimized and all-electric mechanical systems. The Building Assessment will also evaluate the tower's potential for solar energy systems and determine what amount of off-site renewable energy procurement would be required for zero carbon building.

The Project team is currently evaluating utility and state energy efficiency program opportunities and will engage with representatives of the utility to determine how best to maximize building performance.

2.4.2 Compliance with Article 37

Based on the current target credits, a LEED® Gold rating is anticipated for the Project. The Project incorporates a holistic approach to sustainability, while mitigating the environmental impacts of energy, water and material use. A summary on the preliminary approach to the credit categories are outlined below and shown in the LEED checklist provided at the end of this section. This is a preliminary evaluation of the LEED checklist, and applicable credits may change as the design advances and the Proponent explores additional opportunities to incorporate sustainability and resiliency measures.

2.4.2.1 Location and Transportation (LT)

The Project team is studying 16 likely achievable points within the Location and Transportation credit category. The Project Site, currently a structured parking garage, is located in the Downtown Waterfront District, and area of the City that offers convenient intermodal public transportation options. The MBTA's Blue Line Aquarium Station is a short walk from the Project Site. South Station is less than one-half mile from the Project Site and is served by the MBTA Red

and Silver Lines, Commuter Rail, Local and Regional buses, and Amtrak. Bus stops for bus routes 4, 15, 39, 57, 92, and 93 are also nearby. A range of public transportation options encourages building occupants and visitors to utilize these modes, as opposed to taking single occupant vehicles.The Project will also provide new bicycle facilities, including a number of bicycle racks consistent with BTD guidelines, will further encourage alternative modes of transportation. The on-site parking will include EV chargers to support and promote the use of electric vehicles.

2.4.2.2 Sustainable Sites (SS)

The Project team has identified 9 likely achievable points within the Sustainable Sites category. The Project will be designed to minimize rainwater runoff and to reduce the heat island effect by placing parking under cover and mitigating roof reflectance. The Project will also provide significant new public open space and landscaping in place of existing structure. The Project team will track and continue to evaluate the potential to achieve 2 additional points related to open space, heat island reduction, and light pollution reduction.

2.4.2.3 Water Efficiency (WE)

The Project team has identified 8 points that are likely attainable in this category, along with an additional 2 points that may be feasible and require additional investigation. The building will be designed to incorporate high-efficiency water fixtures to reduce indoor water consumption and incorporate advanced water meters to help the Project consistently track water usage data. The Project will also reduce outdoor water consumption through efficient landscaping practices. The Project team will track and continue to evaluate the potential to pursue the "maybe" credits to achieve additional water savings through the further reduction of indoor and outdoor water use demands.

2.4.2.4 Energy & Atmosphere (EA)

The Project team has identified 14 points within the Energy and Atmosphere category that are likely attainable, and another 8 points that may be feasible with some further investigation. The points will be sought through reductions in overall energy consumption by cost, enhanced commissioning strategies, advanced metering of energy subsystems to help the Project understand and reduce consumption, and enhanced refrigeratant management. The potential "maybe" credits will be monitored by the Project team to determine if additional improvements to energy performance and renewable energy production strategies can be utilized for the buildings. The Project team also is evaluating the feasibility of purchasing green power and carbon offsets for the Project's annual energy consumption for up to five years.

2.4.2.5 Materials and Resources (MR)

The Project team has identified 3 points that are likely attainable within the Materials and Resources category, and an additional point from the Project's sourcing of raw materials as a potential target credit. The Project will reduce the overall footprint of proposed materials by utilizing sustainable waste management strategies and maximizing the declarations of

environmental products and chemical ingredients of the permanently installed products. The Project expects to implement LEED v4.1 credit substitutions for the two Building Product Disclosure and Optimization ("BPDO") credits being pursued a strategy which has been successfully implemented on other similar projects.

2.4.2.6 Indoor Environmental Quality (IEQ)

The Project team has identified 5 points that are likely attainable in the Indoor Environmental Quality category for the Project, and 5 points that may be feasible. Strategies such as enhanced indoor air quality control strategies, a construction indoor air quality management plan, and low-emitting materials will be incorporated to provide a healthy indoor environment for all occupants and visitors. Thermal comfort and interior lighting strategies will also be used to promote occupant well-being and comfort. The Project team will continue to investigate the possibility of pursuing points for the reduced use of electrical lighting and introducing daylight into the space.

2.4.2.7 Innovation (I)

The Project team will evaluate and implement measures and strategies in the design and construction of the building to exceed the performance criteria of some of the base credits and will introduce innovative building features, technologies, and policies that are not addressed by existing prerequisites and credits in the LEED BD+C: Core and Shell rating system. The potential Innovation Credits may include: green building education, occupant comfort survey, operation and maintenance starter kit, and/or potentially a few pilot credits, such as lead risk reduction, green training for contractors, social equity within design and construction team. The Project team also includes LEED Accredited Professionals.

2.4.2.8 Regional Priority (RP)

The 4 points available in the Regional Priority credit category are contingent on the Project meeting certain thresholds for credits in previous categories as determined by the USGBC. The Project intends to achieve the optimized energy performance thresholds and rainwater management as well as investigating the possibility of further reduction in indoor water use to a 40% reduction.

LEED v4 for BD+C: Core and Shell

Project Checklist

Project Name: The Pinnacle
Date: 1/8/2020

Y	?	N			
1			Credit	Integrative Process	1

16	3	1	Location and Transportation		20
			Credit	LEED for Neighborhood Development Location	20
2			Credit	Sensitive Land Protection	2
	3		Credit	High Priority Site	3
6			Credit	Surrounding Density and Diverse Uses	6
6			Credit	Access to Quality Transit	6
1			Credit	Bicycle Facilities	1
		1	Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

9	2	0	Sustainable Sites		11
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit		1
1	1		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
3			Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
	1		Credit	Light Pollution Reduction	1
1			Credit	Tenant Design and Construction Guidelines	1

8	2	1	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2	1		Credit	Outdoor Water Use Reduction	3
3	1	1	Credit	Indoor Water Use Reduction	5
2			Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

14	8	11	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
4	2		Credit	Enhanced Commissioning	6
8	2	8	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
		3	Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	2		Credit	Green Power and Carbon Offsets	2

3	1	10	Materials and Resources		14
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		6	Credit	Building Life-Cycle Impact Reduction	6
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations - V4.1 credit substitution	2
	1	1	1	Building Product Disclosure and Optimization - Sourcing of Raw Materials - V4.1 credit substitution	2
1		1	Credit	Building Product Disclosure and Optimization - Material Ingredients - V4.1 credit substitution	2
1		1	Credit	Construction and Demolition Waste Management	2

5	5	0	Indoor Environmental Quality		10
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1	1		Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials - V4.1 credit substitution	3
1			Credit	Construction Indoor Air Quality Management Plan	1
	3		Credit	Daylight	3
1			Credit	Quality Views	1

5	1	0	Innovation		6
1			Credit	Exemplary Performance: Heat island Reduction	1
1			Credit	Green Building Education	1
1			Credit	Occupant Comfort Survey	1
1			Credit	Operation and Maintenance Starter Kit	1
	1		Credit	Pillot - Green Training for Contractors	1
1			Credit	LEED Accredited Professional	1

2	1	2	Regional Priority		4
	1		Credit	Bonus point for Indoor Water Use Reduction	1
1			Credit	Optimize Energy Performance	1
1		1	Credit	Bonus point for Rainwater Mgt	1
		1	Credit	RP: Renewable Energy	1

63	23	25	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

2.4.3 Preliminary Energy Conservation Approach

In alignment with regional efforts to reduce GHG emissions and in support of Boston's specific GHG emissions reduction targets, the Project team has started to evaluate possible energy efficiency measures (EEMs) as designs for the Project have commenced. The EEMs that will be evaluated include low-flow and low-consumption plumbing fixtures, high performance envelope as well as high-efficiency mechanical and ventilation systems. The Project team will also study additional strategies, including incorporation of solar photovoltaic and a combined heat and power facility. To assist with the design process, whole building energy modeling was used for a preliminary analysis of possible energy efficient measures.

The project will target a 15% improvement in the proposed building performance rating for new buildings compared with the baseline building performance rating, which surpasses the 10% that will be required by the revised Stretch Code under Appendix AA 103.2. The baseline performance rating was calculated according to the building performance rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2013 (with errata but without addenda 1) through a computer simulation model which included every building on the project site. The 15% reduction in the proposed building performance rating is in the context of a much larger building than exists today.

2.4.3.1 Preliminary Energy Model

Appendix G of Standard 90.1-2013 requires that the energy analysis completed for a project's performance rating method include all energy costs associated with the building project. The project team has also made provisions to comply with all the mandatory requirements of ASHRAE 90.1 – 2013, namely Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4), which is a prerequisite to complying via the modeling protocol for both energy code compliance and LEED certification.

The 15% energy reduction target will be met by evaluating materials to create a high performing building envelope, efficient mechanical and ventilation equipment, and a lighting design with high efficacy.

The whole building design as evaluated through the parameters listed below is projected to reduce energy usage from the baseline by 29%, or 1,391 tons of CO_2.

A list of inputs to the energy model has been provided in Table 2-15.

2.4.3.2 Energy Efficiency Measures

Thermal Envelope

The thermal envelope will be designed to exceed the prescriptive requirements for Climate Zone 5A (Boston) of ASHRAE 90.1-2013 in order to reduce solar gains and reduce heat loss. Proper envelope detailing will ensure the mechanical equipment is properly sized for the expected loads.

Table 2-15 Preliminary Energy Model Inputs

Input Summary ***Note: Green cells indicate C406.1 Measures***	**Natural Gas Baseline Case (ASHRAE 90.1-2013, App. G)**	**Chilled Water** **Office - Active Chilled Beams** **Residential - 4 pipe Fan Coils**
Roof Insulation	R-30 c.i. U-0.032 per Table A2.2.3	R-30 c.i. U-0.032 per Table A2.2.3
Wall Insulation	R-13 + R-10 c.i (metal stud) U-0.055 per Table A3.3.3.1	R-10 spandrel U-0.15 effective
Windows / Glazing	U-0.42 (fixed) U-0.50 (operable) SHGC-0.40 (both)	Double Glazing U-0.38 SHGC 0.27
Window-to-Wall Ratio	40%	~49%
Temperature Setpoints	Cooling: 75°F Heating: 70°F	Cooling: 75°F Heating: 70°F
Corridor and Ventilation/Makeup Air HVAC System C406.6 Measure	DX RTU with Gas-Fired Furnace and heat recovery (50% Eff.)	Chilled/Hot Water Custom Air Handlers with energy recovery (>75% Eff.)
Corridor Cooling Efficiency	10.8 EER	6.1 COP Chiller
Corridor Heating Efficiency	80% Et Gas Fired Furnace	95% Et Gas Fired Condensing Boiler
Residential/Office HVAC System	PTAC - DX with hot water coil	4 Pipe Fan Coil Active Chilled Beam
Residential/Office Cooling Efficiency C406.2 Measure	9.3 EER	4 Pipe Fan Coil - 6.1 COP Chiller Active Chilled Beam - >7 COP Chiller
Residential/Office Heating Efficiency	90% Ec Boiler	4 Pipe Fan Coil - 95% Et Boiler Active Chilled Beam - 95% Et Boiler
Retail HVAC System	Air Cooled Packaged VAV w/ Hot Water Coils	Air Cooled Packaged VAV w/ Hot Water Coils
Retail Cooling Efficiency	12.2 EER	13 EER
Retail Heating Efficiency	82% Ec Boiler	95% Et Boiler
Domestic Hot Water	80% Et Boiler	95% Et Boiler (central)

Table 2-15 Preliminary Energy Model Inputs (Continued)

Input Summary *Note: Green cells indicate C406.1 Measures*	**Natural Gas Baseline Case (ASHRAE 90.1-2013, App. G)**	**Chilled Water Office - Active Chilled Beams Residential - 4 pipe Fan Coils**
Lighting LPD (Space by Space) C406.3 Measure	0.51 x 90% = 0.46 W/SF (Residential) 0.98 x 90% = 0.88 W/SF (Office) 0.66 x 90% = 0.594 W/SF (Corridor) 0.69 x 90% = 0.621 W/SF (Stairwell) 1.44 W/SF (Retail) 0.19 x 90% = 0.171 W/SF (Parking) 0.42 x 90% = 0.378 W/SF (Mechanical) *Vacancy sensors in common spaces *Dimming panels	0.30 W/SF (Residential) 0.85 W/SF (Office) 0.45 W/SF (Corridor) 0.60 W/SF (Stairwell) 1.44 W/SF (Retail) 0.095 W/SF (Parking) 0.32 (Mechanical) *Vacancy sensors in common spaces *Dimming panels
Appliances	Standard Efficiency	Energy Star Rated
Bathroom Fans	N/A - exhaust fans included in total system fan energy	N/A - exhaust fans included in total system fan energy
Elevators	same as proposed	Regenerative Drive
Additional Efficiency Package(s) Included in Baseline	Lighting and 10% Improved HVAC Eff.	Lighting and 10% Improved HVAC Eff.

Input Summary *Note: Green cells indicate C406.1 Measures*	**Natural Gas Baseline Case (ASHRAE 90.1-2013, App. G)**	**Chilled Water Office - Active Chilled Beams Residential - 4 pipe Fan Coils**
Whole Building Energy Model Results		
Electricity Cost [kWh]	$0.185	$0.185
Natural Gas Cost	$1.000	$1.000
Energy Reduction from Baseline	**58,274 MMBTU**	**41,403 MMBTU (28.95%)**
GHG Reduction from Baseline	**4,849 Tons GHG**	**3,458 Tons GHG (1,391 Ton/29% Reduction)**

Roof insulation was evaluated to perform at R-30, or 6 inches of rigid insulation for all space types. Soffit and exposed floors will also input with R-30 insulation. Both the roof and floor targets meet the baseline of R-30.

Curtainwall spandrel will have thermal performance of U-0.15. Additional interior stud back up will enable batt insulation to supplement the exterior cladding depending on the tenant's build out.

Glazing can be a source of both high solar gains and heat loss. The proposed glazing percentage of 49% at the office and 45%at the residences exceeds the code baseline of 40%. However, energy use is mitigated through the use of high efficiency glazing and framing. A U-value of 0.38 improves the baseline performance of 0.42, and an SHGC of 0.27 reduces solar gain from the baseline value of 0.40.

Heating, Ventilating, and Air Conditioning

All mechanical systems will be selected to exceed the minimum efficiency requirements of ASHRAE 90.1-2013 Section 6. Heat recovery will be employed wherever possible to reduce the energy required to condition the ventilation air.

In the residential units, high efficiency 4-pipe console fan coils with ECM motors will be utilized to heat and cool. Condensing domestic water heaters will supply the domestic hot water. In addition, all domestic hot water fixtures can be specified to be at least 20% below the LEED baseline flowrates. Ventilation will be provided through a central energy recovery ventilator equipped with a 75% efficient total energy recovery wheel that preheats and precools the entering outdoor air with toilet exhaust.

Commercial office spaces will be served by active chilled beam units and back of house spaces by chilled water fan coils. The commercial spaces will be provided valved and capped connections, but the tenants will be responsible for distribution systems.

Interior and Exterior Lighting

All common and amenity spaces will be designed to include daylight photocell sensors wherever possible. Vacancy sensors will automatically shut off lighting to spaces within 20 minutes of occupants leaving a common space with enclosed partitions. In addition, high efficacy fixtures will be selected to reduce the connected load by at least 20% in common spaces.

2.5 Climate Change Adaptability

Due to the Project's location adjacent to Boston Harbor, the future impacts of climate change may affect the Site in a number of ways, both directly and indirectly. The Proponent will continute to work with the City, neighbors and stakeholders to plan for the impacts of climate change and incorporate strategies developed through the Climate Ready Boston initiative, including the forthcoming Climate Ready Downtown and North End report, to ensure the Project incorporates appropriate near-term and long-term coastal resilience strategies. The following sections provide a general overview of potential climate change challenges for the Project Site.

2.5.1 Coastal Flooding

Coastal flooding causes normally dry, low-lying land to be inundated by sea water. Most coastal flooding is associated with storm surge from infrequent storm events, including hurricanes, tropical storms, tropical depressions, and extratropical storms (nor'easters), but can also be

caused by higher than normal astronomical tidal events, as is the case of perigean high tides (a.k.a. king tides). Storm surge, the rise in water levels above normal tidal variations, is due to several meteorological factors including low atmospheric pressure and wind field. Boston's Downtown Waterfront District is known to flood occasionally, both from astronomical high tides and coastal storm events, as was the case from two winter storms in January and March of 2018. The Project will incorporate mitigation measures described below to reduce the impacts of coastal flooding on the Project Site and surrounding public realm.

2.5.1.1 Sea Level Rise

One significant effect of climate change is an increase in the mean sea level. Sea level rise increases the risk of flooding posed to infrastructure and ecosystems resulting from both coastal storm events and astronomical high tides. Sea level rise also introduces a factor of uncertainty in planning for future flood risk in addition to traditional challenges in predicting the frequency of flood events.

The City of Boston's *Climate Ready Boston* vulnerability assessment and report uses the 2015 Boston Harbor Flood Risk Model ("BH-FRM") to project future sea level rise and correlated flood risk in Boston. Created as part of a MassDOT and Federal Highway Administration Resilience Pilot Project, the BH-FRM was developed by University of Massachusetts-Boston, Woods Hole Group Inc., and the University of New Hampshire. The project uses climate projections to simulate flooding from extreme weather and sea level rise and predicts that Boston's sea levels will likely rise by 9 inches (from 2013 levels) as soon as 2030 if emissions continue at their current pace, 21 inches as soon as 2050[7], and 36 inches[8] as soon as 2070.[9]

As emphasized in the *Climate Ready Boston* report, the pace of relative sea level rise in Boston is accelerating, driven by global mean sea level rise in large part due to melting Arctic and Antarctic ice sheets and ocean thermal expansion, as reported with high confidence in the Intergovernmental Panel on Climate Change's *2019 Special Report on the Ocean and Cryosphere in a Changing Climate*.[10] It is also important to note there is an important element of uncertainty involved in predicting sea level rise, and this uncertainty should be considered when evaluating potential impacts, as well as risk tolerance.

The Project design will provide resiliency now and in the future, adapting to both storm surge and sea level rise. Consistent with the anticipated recommendations of the *Climate Ready Downtown and North End* plan, The Project Site will be raised from elevation 17.0-feet BCB to elevation 21.0-feet BCB in order to improve the Site resiliency in light of sea level rise and coastal storms. The Proponet is also evaluating resiliency solutions along the adjacent Harborwalk to provide a

7 Climate Ready Boston interpolates 2050 projections based on BH-FRM 2030 and 2070 projections.
8 Note that 36 inches of sea level rise in Climate Ready Boston maps correlate to 40 inches of SLR from the BH-FRM.
9 Climate Ready Boston report, City of Boston, pages 20-21.
10 To view full report: https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf

catalytic contribution toward a district-wide approach to protection. Near the the water's edge, the elevation will be 21.5-feet BCB to provide additional protection against storm surge and create a more resilient harbor's edge. The Proponenet will coordinate with abutters to explore measures to install a "living shoreline" landwarad of the existing seawall thereby creting a more resilient harbor's edge.

2.5.1.2 Current and Future Flood Risk

FEMA correlates flood depths to the probability of flooding using FIRMs. FIRMs illustrate areas in Special Flood Hazard Areas ("SFHAs"), or areas that are at risk of flooding due to coastal storm events. The flood elevation with a one percent chance[11] of being met or exceeded each year at any particular site is given as the Base Flood Elevation ("BFE") on recent FIRMs. Elevations that correlate to additional flood probabilities, such as the 0.2% annual chance, are often included in the Flood Insurance Study ("FIS"). The current BFE for the site is 10 feet (NAVD88) or 16.46 feet BCB.

While climate science points to an increased number of stronger storm events, the current understanding of how this will impact future storm probability is not well understood. In many cases, the practice is to add sea level rise directly to infrequent flood event elevations for a given storm probability. However, the BH-FRM did attempt to account for this effect. As noted above, using the BH-FRM model, the *Climate Ready Boston* report provides a SLR-BFE of 14.0-feet NAVD88 for the site (19.5-feet BCB). This correlates to the 1% annual chance flood elevation with 40 inches of sea level rise in the 2070s. As noted above, the seaward portions of the Project Site will be raised to 21.0-feet BCB and near the the water's edge, the elevation will be 21.5-feet BCB to provide additional protection against storm surge.

2.5.2 Stormwater

From 1958 to 2010, there was a 70% increase in the amount of precipitation that fell on the days with the heaviest precipitation (*Climate Ready Boston*). With climate change, this trend is expected to continue, with more frequent, higher intensity rainfall events. *Climate Ready Boston* recommends considering a 10% increase in the 10-year rainfall event for the 2060s. Although rainfall intensity is expected to increase, the average annual rainfall may not change significantly, indicating the possibility of longer periods of dry weather between storm events.

With more frequent, higher intensity storms, existing drainage systems may not be adequate, resulting in street flooding and ponding. This can be exacerbated by sea level rise which can make storm drainage less efficient. Much of the Downtown Waterfront District comprises filled tidelands which have historically had poor stormwater management. Increased rainfall intensity and sea level rise will only exacerbate this issue in the future.

11 Often referred to as the 100-year flood elevation.

Snowfall is also anticipated to be impacted by climate change. Total annual snowfall accumulations are anticipated to decrease but, similar to rainfall, infrequent high-intensity events are expected.

The co-occurrence of precipitation with high tide or coastal flood events can exacerbate flooding as stormwater cannot leave outfalls and may back up on normally dry land. This was exemplified during winter storm flooding in 2018; much of the inland flooding came from backflow.

The Site design for the Project will anticipate increasingly frequent and intense rain events, providing refuge for Site users while managing stormwater responsibly using a combination of green and conventional infrastructure, including below-grade detention and infiltration systems, where feasible.

2.5.3 Additional Climate Hazards

Although sea level rise and increased rainfall intensity are likely the most impactful effects of climate change for the Project, several other additional climate hazards may pose concerns.

2.5.3.1 Extreme Heat

Extreme heat is a chronic hazard that is expected to worsen in Boston over time. Both average temperatures as well as the frequency, duration, and intensity of extended periods of severe heat – known as heat waves – are projected to increase, following a trend over the course of the past century. In fact, the rate of this increase is itself accelerating, with average summer temperatures in Boston projected to rise from 69 degrees Fahrenheit to as high as 76 degrees by 2050 and 84 degrees by 2100. Additionally, by 2030, as many as 40 days per year may experience a heat wave of over 90 degrees, with as many as 90 days per year by 2070 (including up to 33 days over 100 degrees), assuming a business-as-usual carbon emissions scenario (*Climate Ready Boston*).

The Site design will help mitigate extreme heat events by using trees and planting to reduce impervious cover and shade key use and travel areas. Hardscape materials will be selected with solar reflectance in mind, aiming to reduce glare and minimize contributions to urban heat island effect.

2.5.3.2 Drought

Planting materials for the Project are a high priority, as they provide innumerable benefits from reducing urban heat island effect to contributing to an iconic sense of place. While plants will be selected for drought tolerance to the fullest extent possible, there will likely be periods of drought that stress even the hardiest native species. An efficient permanent irrigation system will help plantings survive these periods and protect the many benefits they provide.

2.5.3.3 Storms and Extreme Wind

Boston is and will continue to be subject to both extratropical cyclones (e.g., blizzards and nor'easters) and tropical cyclones (e.g., hurricanes and tropical storms). As noted in the coastal flooding description above, while there is evidence that the frequency of storm events is increasing, the impact of climate change on both extratropical and tropical storms is not currently well understood. The increased storm frequency may mean higher extreme design wind speeds in the future. Each of these sceniarios is being evaluated as the Project's design is refined.

2.5.3.4 Groundwater

Climate change will also impact groundwater. In coastal areas, such as along Boston's inner harbor, sea level rise will cause an increase in adjacent groundwater levels. Depending on the subsurface conditions, a one to one relationship between sea level rise and groundwater rise can be anticipated up to one-half mile inshore. Increased rainfall intensities can also cause temporary increases in the groundwater table. Evaluation of subsurface systems will account for these changes.

2.6 Historic and Archaeological Resources

2.6.1 Historic Resources

The Project Site encompasses an existing parking structure and contains no historic resources. However, the parcel is in the vicinity of several properties and districts included in State and National Registers of Historic Places. Historic districts in the vicinity of the Site include the Long Wharf District, located to the north of the Project Site, which is listed on the National Register of Historic Places,. Further to the west of the Project Site are other National Register properties, including the Custom House District and Quincy Market.

Figure 2-36 depicts historic resources within a one-quarter mile radius of the ProjectSite, and these resources are also listed in Table 2-16.

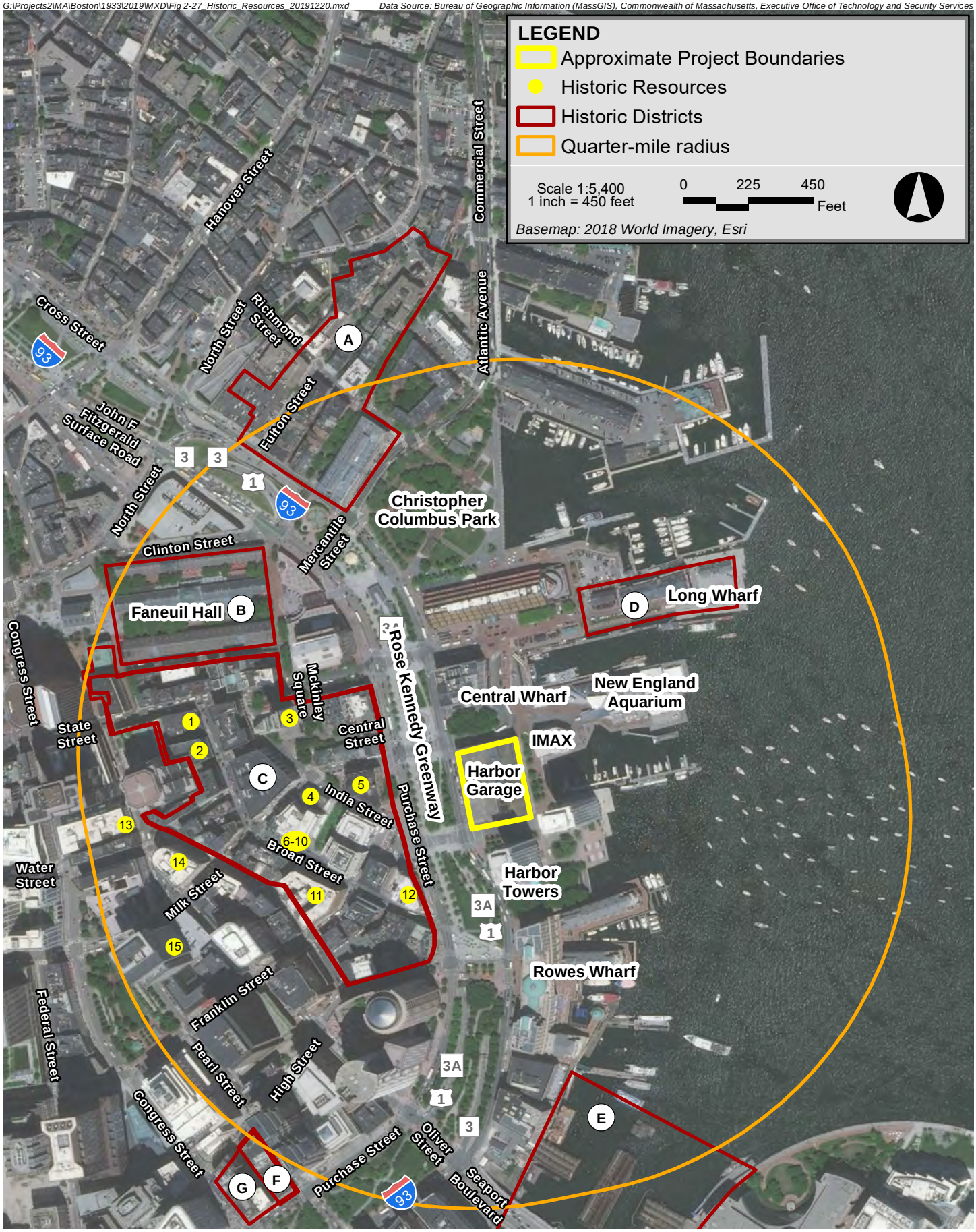
The Project requires state permits, and therefore is subject to review by the Massachusetts Historical Commission in accordance with M.G.L., Chapter 9, Sec. 26-27c, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00). A MEPA Environmental Notification Form ("ENF") will be submitted to the MHC to initiate the Chapter 254 review process. As the Project progresses, the Proponent will meet with the Massachusetts Historical Commission and the Boston Landmarks Commission if required by the respective agencies to review the indirect impacts that the Project may have on historic resources, primarily in the areas of visual and shadow impacts. During the development review process, the Proponent will identify, map, and describe historic resources in the vicinity of the Project and will discuss potential impacts to these resources.

Table 2-16 Historic Resources in the Vicinity of the Harbor Garage Project Area

No.	State/National Register-Listed Properties & Districts	Address
A	Fulton Street-Commercial Street Historic District	North End, Fulton, Commercial, Mercantile, Lewis, and Richmond Streets
B	Quincy Market – Faneuil Hall Market	North and South Market Streets
C	Custom House Historic District	Between Kilby Street, JFK Expressway, High and Batterymarch streets, Merchants Road, South Market and State Streets
	Custom House Historic District (1996 Amendment)	Between JFK Expressway, Kilby, High and Batterymarch streets, Merchants Row, South Market and State Streets
D	Long Wharf and Custom House Block	Foot of State Street, east Atlantic Avenue
E	Fort Point Channel Historic District	Roughly bounded by the Fort Pont channel seawalls, the Northern Avenue Bridge, Seaport Boulevard, Stillings, Midway, and A Streets, and Necco Court
	Richardson Block	109-119 High Street and 113-151 Pearl Street
	Gridley Street Historic District	Roughly bounded by Pearl Street, Purchase Street, Congress Street, and High Street
1	5-7 Broad Street	5-7 Broad Street
2	9 Broad Street	9 Broad Street
3	United States Custom House	McKinley Square
4	25-27 India Street	25-27 India Street
5	Flour and Grain Exchange	177 Milk Street
6	50-52 Broad Street	50-52 Broad Street
7	64-64A Broad Street	64-64A Broad Street
8	66 Broad Street	66 Broad Street
9	68-70 Broad Street	68-70 Broad Street
10	72 Broad Street	72 Broad Street
11	Batterymarch Building	54 Batterymarch Street
12	102 Broad Street	102 Broad Street
13	Codman Building (10 Liberty Square Building)	51-57 Kilby Street
14	Samuel Appleton Building	110-114 Milk Street
15	Federal Reserve Bank Building	30 Pearl Street

2.6.2 Archaeological Resources

The existing Project Site is a previously developed site. The existing parking garage sits on fill above the peat line. Due to previous development and disturbance, it is anticipated that the Site is unlikely to contain significant archaeological remains.



The Pinnacle at Central Wharf Boston, Massachusetts

Epsilon Associates Inc.

Figure 2-36
Historic Resources

2.7 Infrastructure Systems

This section outlines the existing utilities surrounding the Site, 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
- Natural gas
- Electricity
- Telecommunications

The Project includes the construction of a forty-three-story mixed-use tower located at 70 East India Row in Boston. The Site is bounded by East India Row to the south, Atlantic Avenue to the west, Milk Street to the north, and the Harborwalk/East India Row to the east.

2.7.1 Sewer Infrastructure

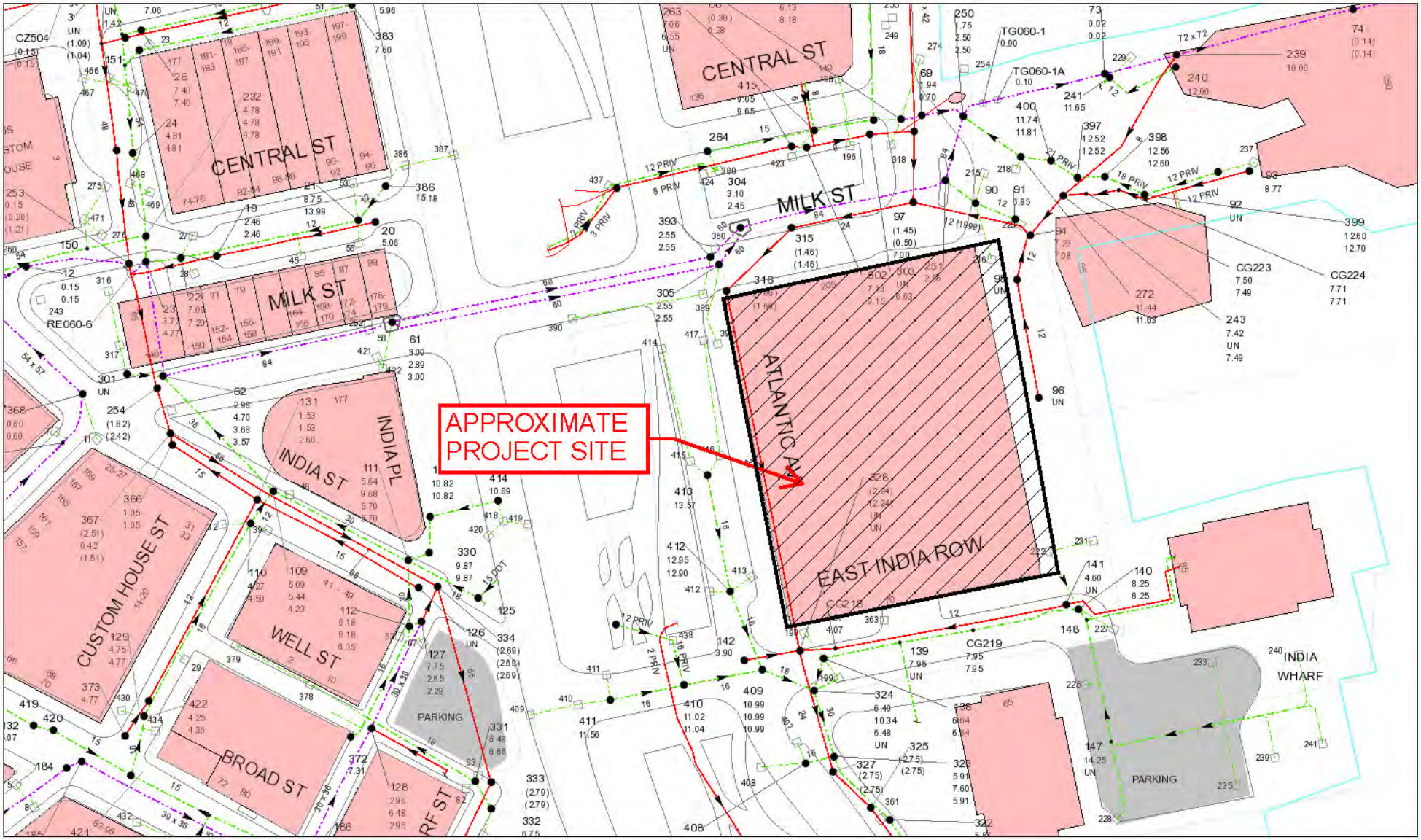
There is an existing Boston Water and Sewer Commission ("BWSC") dedicated 24-inch sewer main in Milk Street and Atlantic Avenue which flows in the southerly direction to the corner of Atlantic Avenue and East India Row. A 12-inch sewer main from East India Row also connects into the 24-inch run pipe in Atlantic Avenue. The 24-inch main continues southerly in Atlantic Avenue, which eventually transitions into a 72-inch main and is classified as the New East Side Interceptor.

In Milk Street, there is also a 60-inch combined sewer main that flows easterly, before connecting into a 72-inch by 72-inch main that discharges into Boston Harbor to the east of the New England Aquarium.

The existing sewer system is illustrated in Figure 2-37.

2.7.1.1 Wastewater Generation

The Site currently contains a seven-story parking garage, with two additional levels of parking below grade and mixed-use space on the ground level The existing water consumption information was determined to be 17,345 gallons per day ("gpd") using water records from September 23, 2018 to September 23, 2019. It is assumed that the water demand is 10% higher than the sewer value, so the existing estimated sewer flow is estimated to be 6,041 gpd.



Boston Harbor Tower **Boston, Massachusetts**

Nitsch Engineering

Figure 2-37

Existing Sewer and Drain Systems

310 CMR 15.00 lists typical sewage generation values for the proposed building uses, as shown in Table 2-17. Typical generation values are conservative values for estimating the sewage flows from new construction. As shown in Table 2-17, the Project is expected to generate approximately 77,980 gallons of wasterwater flow per day, an increase of approximately 71,939 gpd.

The Project will be high-rise mixed-use building with a total of 323 bedrooms with retail and office components.

Table 2-17 Proposed Project Wastewater Generation

Use	Size/Unit	310 CMR Value (gpd/unit)	Total Flow (gpd)
Existing Building Program			
Parking Garage / Retail*	-	-	6,041
Total Existing Sewer Flows			**6,041**
Proposed Residential Building (using average 310 CMR values)			
Retail	42,000 sf	50/1,000 sf	2,100
Office	538,000 sd	75/1,000 sf	40,350
Total Bedrooms	323 bedrooms	110/bedroom	35,530
Total Proposed Sewer Flows			**77,980**

Increase in Sewer Flows (gpd):	**71,939**

Average Generation Value was determined from existing consumption data from 9/23/2018 to 9/23/2019. It is assumed that the water demand is 10% higher than the sewer value.

2.7.1.2 Sewage Capacity & Impacts

The Project's impact on the existing BWSC mains in Atlantic Avenue were analyzed. The existing sewer system capacity calculations are presented in Table 2-18.

Table 2-18 Sewer Hydraulic Capacity Analysis

Manhole (BWSC Number)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Dia. (in)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
East India Row								
141 to 328	220	4.60	4.07	0.24%	12	0.013	1.75	1.13
Atlantic Ave								
315 to 316	72	-1.46	-1.66	0.28%	24	0.013	11.92	7.71
316 to 328	307	-1.66	-2.24	0.19%	24	0.013	9.83	6.36
						Minimum Flow Analyzed:	9.83	6.36

Notes:
1. Manhole numbers and inverts taken from BWSC Sewer system GIS Map received on October 2, 2018. Pipe lengths taken from a draft survey prepared by Feldman Land Surveyors.
2. Flow Calculations based on Manning Equation

Table 2-18 indicates the hydraulic capacity of the existing 24-inch sewer main in Atlantic Avenue. The minimum hydraulic capacity is 6.36 million gallons per day ("MGD") or 9.83 cubic feet per second ("CFS") for the 24-inch main.

Based on an average daily flow estimate for the Project of 77,980 GPD or .07798 MGD; and with a factor of safety estimate of 10 (total estimate = 0.07798 MGD x 10 = 0.7798 MGD), no capacity problems are expected within the BWSC sewer systems in Atlantic Avenue.

2.7.1.3 Proposed Conditions

The Proponent will coordinate with the BWSC on the design and capacity of the proposed connections to the sewer system. Approval for the increase in sanitary flow will come from BWSC, and the Proponent is committed to contributing to the 4:1 Inflow/Infiltration to assist BWSC in separating the combined public sewers.

New sewer services resulting from the Project will connect to the existing sanitary sewer mains in Atlantic Avenue, East India Row, and/or Milk Street.

Improvements and connections to BWSC infrastructure 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.

2.7.2 Water Infrastructure

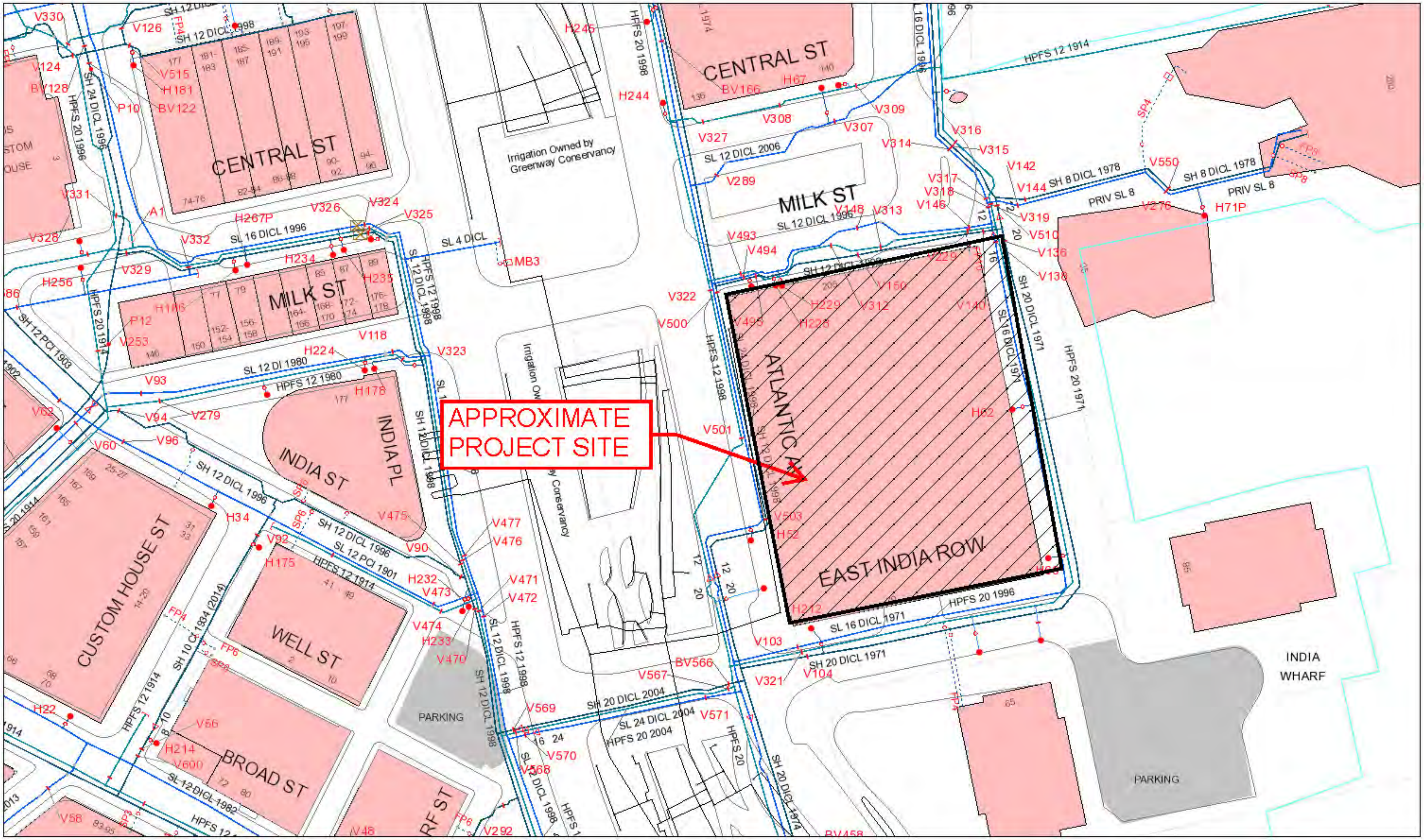
Water for the Project will be provided by the BWSC. There are five water systems within the City, and these provide service to portions of the City based on ground surface elevation. The five systems are southern low (commonly known as low service), southern high (commonly known as high service), southern extra high, northern low, and northern high. There are existing BWSC water mains on all four sides of the existing site.

In East India Row, there is a 16-inch southern low main, a 20-inch southern high main, and a 20-inch high pressure fire service.

In Atlantic Avenue, there is a 12-inch southern high main, 12-inch high pressure fire service, and a 24-inch southern low main.

Adjacent to the site in Milk Street, there is a 12-inch southern low main, a 12-inch southern high main, and a 12-inch high pressure fire service.

The existing water system is illustrated in Figure 2-38.



BOSTON WATER AND SEWER

Boston Harbor Tower **Boston, Massachusetts**

Nitsch Engineering

Figure 2-38

Existing Water Systems

2.7.2.1 Water Consumption

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, described above. A conservative factor of 1.1 (10%) is applied to the estimated average daily wastewater flows calculated with 314 CMR 15.00 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 6,645 gpd. The water for the Project will be supplied by the BWSC systems in East India Row.

2.7.2.2 Existing Water Capacity and Impacts

BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the Project Site was requested by the Proponent. Hydrant flow data was available for one hydrant near the Site. The existing hydrant flow data is shown in Table 2-19.

Table 2-19 Existing Hydrant Flow Data

Main Type	Flow Hydrant Number	Static Hydrant Number	Date of Test	Static Pressure (psi)	Residual Pressure (psi)	Total Flow (gpm)
Southern Low	H52	H62	10/22/2019	70	67	2,126
Southern High	H60	H212	10/22/2019	104	100	2,004

Note: Data provided by BWSC on October 24, 2019

Water capacity problems are not anticipated within this system as a result of the Project's construction.

2.7.2.3 Proposed Project

The domestic and fire protection water services for the Project will connect to the existing BWSC water mains in East India Row.

The proposed Project's impacts to the existing water system will be reviewed as part of the BWSC's Site Plan Review process.

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.

Efforts to reduce water consumption 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 ("MTUs") as part of the BWSC's Automatic Meter Reading ("AMR") system.

2.7.3 Stormwater System

In Atlantic Avenue, there are four catch basins that are routed to an 18-inch BWSC storm drain that flows in the southerly direction. In East India Row, there is an existing 18-inch BWSC storm drain that flows in a westerly direction prior to connecting to the adjacent to the site that connects to the main in Atlantic Ave. The main in Atlantic Avenue then increases to a 30-inch run and continues to flow southerly in Atlantic Avenue, before entering a 42-inch main that discharges into Fort Point Channel to the south of Rowes Wharf.

In Milk Street, there is also a 60-inch combined sewer main that flows easterly, before connecting into a 72-inch by 72-inch main that discharges into Boston Harbor to the east of the New England Aquarium.

The existing BWSC storm drain system is illustrated in Figure 2-37.

2.7.3.1 Proposed Project

Stormwater improvements will be reviewed as part of the BWSC Site Plan Review process. This process includes a comprehensive design review of the proposed service connections, assessment of Project demands and system capacity, and establishment of service accounts. The proposed management system will collect site runoff and 1.25-inch of rainfall over the Project's impervious area, per BWSC's requirements and since the Project is above the threshold criteria of having at or above 100,000 square feet of floor area. The Project's storm drainage system will discharge to the BWSC storm drain in Milk Street and/ or East India Row, and will be coordinated during the BWSC review process.

All work on the drainage systems will be performed in accordance with BWSC standards and will be submitted to the necessary agencies for review and approval prior to implementation.

2.7.3.2 Stormwater Measures During Construction

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.

2.7.3.3 Groundwater Recharge Measures

The BPDA oversees proposed projects within the Groundwater Conservation Overlay District under Article 32 of the Code. The Site is not located within the City of Boston's Groundwater Conservation Overlay District and therefore does not fall under Article 32.

Furthermore, the BPDA also oversees the Smart Utilities Policy for Article 80 Development Review ("SUP"). Since the Project is above the threshold criteria of having at or above 100,000 square feet of floor area, the Project is required to retain the 1.25 inches of rainfall across the portion of the impervious area on-site.

The Project will comply with both Article 32 and Article 80 by capturing within a suitably-designed system a volume of rainfall on the lot equivalent to no less than 1.25 inch across that portion of the surface area of the lot to be occupied by the Project. The Project will result in no negative impact on groundwater levels within the lot in question or adjacent lots, provided that it is performed in compliance with the terms of any (i) dewatering permit and (ii) cooperation agreement entered into by the Proponent and the BPDA, to the extent that such agreement provides standards for groundwater protection during construction.

2.7.3.4 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 system 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 Project 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. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Compliance: The Project will comply with this Standard. The existing discharge rate will be met or decreased as a result of the improvements associated with the Project.

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.

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 Project will comply with this Standard. Within the Project's limit of work, there will be mostly building roof, paved sidewalk, and roadway areas. Runoff from paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by deep sump and hooded catch basins and will be 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 Project will comply with this Standard. The Project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-6).

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 Project 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 Project is a new development and thus this Standard is not applicable.

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. Sedimentation and erosion controls will be incorporated as part of the design of these activities and employed 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.

2.7.4 Electrical Service

Electrical service will be coordinated with the utility company.

2.7.5 Telecommunications Systems

Telecommunication service will be coordinated with the telecommunication providers.

2.7.6 Gas Systems

Natural gas service will be coordinated with the utility company as required.

2.7.7 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. All necessary permits will be obtained before the commencement of work.

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.

Section 3.0

Coordination with Other Governmental Agencies

3.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

3.1 Massachusetts Environmental Policy Act (MEPA)

The Project will be subject to review under the Massachusetts Environmental Policy Act requiring the preparation of a mandatory Environmental Impact Report ("EIR") since the Proposed Project requires a Chapter 91 License for new nonwater-dependent use on one or more acres of tidelands, as well as exceeding a review threshold for Transportation and, potentially, other state agency action. The Proponent will submit an Environmental Notification Form to the MEPA office to initiate review.

3.2 Massachusetts Department of Environmental Protection

The Project Site is subject to review under the Public Waterfront Act, M.G.L. c 91 and 310 CMR 9.00 et seq, as administered by the Massachusetts Department of Environmental Protection.

3.3 Massachusetts Historical Commission State Register Review

The Project requires state permits, and therefore is subject to review by the Massachusetts Historical Commission in accordance with M.G.L., Chapter 9, Sec. 26-27c, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00). The MEPA Environmental Notification Form ("ENF") will be submitted to the MHC to initiate the Chapter 254 review process**.**

3.5 Architectural Access Board Requirements

The Project will comply with the requirements of the Massachusetts Architectural Access Board and the standards of the Americans with Disabilities Act. The Accessibility Checklist is included in Appendix E

3.6 Other Permits and Approvals

Section 1.7 provides a list of agencies from which it is anticipated that permits and approvals for the Project will be sought.

Appendix A

Site Survey

BOUNDARY DESCRIPTION

PARCEL I BEING THAT CERTAIN PARCEL OF LAND, TOGETHER WITH THE IMPROVEMENTS ERECTED THEREON, SITUATED ON RELOCATED ATLANTIC AVENUE, MILK STREET AND EAST INDIA ROW IN THE CITY OF BOSTON, COMMONWEALTH OF MASSACHUSETTS SHOWN AS PARCEL A, AREA = 57,346 ± SQUARE FEET ON A PLAN ENTITLED, "PLAN OF PROPERTY OWNED BY BOSTON WATERFRONT ASSOCIATES I, PARCEL A & PARCEL B, BOSTON WATERFRONT ASSOCIATES II, PARCEL C & PARCEL D, EAST INDIA ROW, BOSTON, MASSACHUSETTS", SCALE: 1 INCH = 40 FEET, DATED JANUARY 17, 1980, REVISED JANUARY 31, 1980 BY CULLINAN ENGINEERING COMPANY, INCORPORATED, AUBURN–BOSTON, MASSACHUSETTS RECORDED IN SUFFOLK COUNTY REGISTRY OF DEEDS BOOK 9403, PAGE 79 (THE "CULLINAN PLAN").

PARCEL I

BEGINNING AT A POINT AT THE INTERSECTION OF RELOCATED ATLANTIC AVENUE AND MILK STREET, SAID POINT BEING THE SOUTHEASTERLY CORNER OF SAID INTERSECTION; SAID POINT OF BEGINNING HAVING A MASSACHUSETTS CO–ORDINATE SYSTEM VALUE OF X = 721,114.442 AND Y = 495,397.741;

THENCE RUNNING ALONG THE SOUTHERLY LINE OF MILK STREET ON A BEARING OF N 78° 08' 20" E A DISTANCE OF 210.00 FEET TO A POINT AT THE INTERSECTION OF SAID MILK STREET AND EAST INDIA ROW;

THENCE TURNING AND RUNNING ALONG THE WESTERLY LINE OF SAID EAST INDIA ROW ON A BEARING OF S 11° 51' 40" E A DISTANCE OF 273.08 FEET TO A POINT ON THE NORTHERLY LINE OF EAST INDIA ROW;

THENCE TURNING AND RUNNING ALONG SAID NORTHERLY LINE OF EAST INDIA ROW ON A BEARING OF S 78° 08' 20" W A DISTANCE OF 210.00 FEET TO A POINT AT THE INTERSECTION OF SAID EAST INDIA ROW AND SAID RELOCATED ATLANTIC AVENUE;

THENCE TURNING AND RUNNING ALONG THE EASTERLY LINE OF SAID RELOCATED ATLANTIC AVENUE ON A BEARING OF N 11° 51' 40" W A DISTANCE OF 273.08 FEET TO THE POINT OF BEGINNING.

SAID PARCEL OF LAND, TOGETHER WITH ALL STRUCTURES NOW OR HEREAFTER FROM TIME TO TIME ERECTED THEREON, SITUATED IN THE CITY OF BOSTON, COUNTY OF SUFFOLK, COMMONWEALTH OF MASSACHUSETTS IS SHOWN AS "COMMITMENT NO. 1 (PARCEL A) AREA 57,346± SQ. FT." ON A PLAN ENTITLED "HARBOR TOWERS BOSTON, MASSACHUSETTS METES & BOUNDS," DRAWN BY WILLIAM S. CROCKER, INC., BOSTON, MASSACHUSETTS WITH A SCALE OF 1" EQUALS 40' AND BEARING AN ISSUE DATE OF AUGUST 14, 1968, WHICH SAID PLAN IS RECORDED IN SUFFOLK COUNTY REGISTRY OF DEEDS BOOK 8258, PAGE 304 (THE "CROCKER PLAN").

PARCEL II:

TOGETHER WITH THE FOLLOWING APPURTENANT RIGHTS AS GRANTED IN DEED FROM BOSTON REDEVELOPMENT AUTHORITY (THE "AUTHORITY") TO TRUSTEES OF HARBOR TOWERS TRUST I DATED JANUARY 8, 1969 AND RECORDED WITH SAID DEEDS IN BOOK 8258, PAGE 415 AND SHOWN ON THE CROCKER PLAN REFERRED TO ABOVE:

(a) RIGHTS AND EASEMENT IN COMMON WITH THE BOSTON REDEVELOPMENT AUTHORITY TO CONSTRUCT, REPAIR, AND MAINTAIN CERTAIN UTILITIES IN "EASEMENT AREA NO. 1" CROSSING THE BED OF EAST INDIA ROW AS SHOWN ON PLAN REFERRED TO ABOVE.

(b) RIGHTS IN COMMON WITH THE BOSTON REDEVELOPMENT AUTHORITY, ITS SUCCESSORS AND ASSIGNS, TO CONSTRUCT, REPAIR MAINTAIN, AND OPERATE, A SO–CALLED TRANSFORMER VAULT IN "EASEMENT AREA NO. 2" WITHIN THE BED OF EAST INDIA ROW (SEE PLAN).

(c) RIGHT TO MAINTAIN FOOTINGS IN "EASEMENT AREA NO. 3" WHICH FOOTING RIGHTS HAVE BEEN RESERVED IN THREE TAKING BY THE PUBLIC IMPROVEMENT COMMISSION OF THE CITY OF BOSTON FOR HIGHWAY EASEMENTS ALL DATED MAY 27, 1971; THAT FOR MILK STREET RECORDED WITH SAID DEEDS IN BOOK 8498, PAGE 670, THAT FOR ATLANTIC AVENUE RECORDED IN SAID BOOK AT PAGE 674, AND THAT FOR EAST INDIA ROW RECORDED IN SAID BOOK AT PAGE 683.

THE AFORESAID APPURTENANT RIGHTS ARE SHOWN ON THE CULLINAN PLAN AS THE "8.00' WIDE CONDENSER WATER PIPING EASEMENT," THE "TRANSFORMER VAULT EASEMENT," AND THE "LINE OF EASEMENT FOR FOOTING," RESPECTIVELY.

RESERVED IN THE DEED FROM THE AUTHORITY ARE FOUR (4) EASEMENTS OF APPROXIMATELY 33.38± SQUARE FEET AT THE CORNER OF SAID PARCEL A FOR USE AS SIDEWALKS.

TOGETHER WITH EASEMENTS (REGARDING DOCK AND BOAT MOORING FACILITIES) SET FORTH IN AN EASEMENT DEED FROM THE TRUSTEES OF THE HARBOR TOWERS I CONDOMINIUM TRUST TO FIRST CITY DEVELOPMENTS CORP. OF BOSTON – HARBOR TOWERS I, DATED APRIL 15, 1982 AND RECORDED WITH SUFFOLK COUNTY REGISTRY OF DEEDS ON APRIL 30, 1982 AT BOOK 9944, PAGE 295.

TOGETHER ALSO WITH APPURTENANT RIGHTS IN COMMON IN THE TURNAROUND EASEMENT SHOWN ON SAID CULLINAN PLAN, AND EASEMENT WITH RESPECT TO UTILITIES, A SWIMMING POOL AND OTHER EASEMENTS ALL AS SET FORTH IN CROSS–EASEMENT AGREEMENT DATED JANUARY 8, 1969 BY AND BETWEEN THE TRUSTEES OF HARBOR TOWERS TRUST I AND II AND OTHERS, RECORDED JANUARY 10, 1969 IN BOOK 8258, PAGE 428 AS AMENDED BY AMENDMENT TO CROSS–EASEMENT AGREEMENT DATED MARCH 21, 1980 AND RECORDED IN BOOK 9460, PAGE 172, AS FURTHER AMENDED BY SECOND AMENDMENT OF CROSS–EASEMENT AGREEMENT DATED JULY 23, 1981 AND RECORDED IN BOOK 9816, PAGE 463.

TOGETHER WITH LICENSE RIGHTS FOR A STEAM PIPE AND A CONDENSATE RETURN PIPE UNDER EAST INDIA ROW (SEE ABOVE CULLINAN PLAN) GRANTED BY THE CITY OF BOSTON, DATED OCTOBER 25, 1979, RECORDED DECEMBER 7, 1979 IN BOOK 9328, PAGE 49.

THE INSURED PREMISES HAVE THE BENEFIT OF THE FOLLOWING LICENSES:

(a) LICENSE No. 4984, DATED OCTOBER 27, 1965, GRANTED BY THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS (HEREINAFTER REFERRED TO AS "D.P.W.") IN FAVOR OF THE BOSTON REDEVELOPMENT AUTHORITY (HEREINAFTER REFERRED TO AS "B.R.A.") RECORDED WITH SAID DEEDS IN BOOK 7999, PAGE 1.

(b) LICENSES No. 5274 AND No. 5276, DATED SEPTEMBER 6, 1967 GRANTED BY THE D.P.W. IN FAVOR OF THE B.R.A. AND THEODORE W. BERENSON, RECORDED WITH SAID DEEDS IN BOOK 8159, PAGE 575 AND 579.

(c) LICENSE No. 5297 DATED NOVEMBER 1, 1967 GRANTED BY THE D.P.W. IN FAVOR OF THE B.R.A. RECORDED WITH SAID DEEDS IN BOOK 8169, PAGE 131

TITLE EXCEPTIONS PER SCHEDULE B – SECTION 2 OF LAWYERS TITLE INSURANCE CORPORATION'S COMMITMENT FOR TITLE INSURANCE CASE No. C15071, EFFECTIVE DATE: MAY 16, 2008 AT 9:34 A.M.

EXCEPTION No. 5: NO RECORDING REFERENCE – NOT PLOTTABLE

EXCEPTION No. 6: BOOK 8258, PAGE 309 – PLOTTED "PARCEL A–3S" (LOCUS) & "PARCEL A–2" (NOT LOCUS)

BOOK 8258, PAGE 397 – PLOTTED "PARCEL A–3S" (LOCUS) & "PARCEL A–2" (NOT LOCUS)

BOOK 8258, PAGE 404 – PLOTTED "COMMITMENT No.1" (PARCEL A–LOCUS & PARCEL B–NOT LOCUS) & "COMMITMENT No.2" (NOT LOCUS)

BOOK 8768, PAGE 368 – PLOTTED "COMMITMENT No.1" (PARCEL A–LOCUS & PARCEL B–NOT LOCUS)

BOOK 8562, PAGE 624 – PLOTTED "PARCEL A–3S" (LOCUS)

EXCEPTION No. 7: BOOK 8258, PAGE 415 – PLOTTED "PARCEL I" (LOCUS) & "PARCEL II" (NOT LOCUS), PLOTTED EASEMENTS

EXCEPTION No. 8: BOOK 7948, PAGE 528, PLAN: BOOK 7948, PAGE 527 – ENCOMPASSES LOCUS – NOT PLOTTABLE

EXCEPTION No. 9: BOOK 8258, PAGE 428 – PLOTTED

BOOK 9460, PAGE 172 – PLOTTED LIMITS OF EAST INDIA ROW

BOOK 9816, PAGE 463 – PLOTTED TURNAROUND EASEMENTS

EXCEPTION No. 10: BOOK 8258, PAGE 436 – NOT PLOTTABLE

BOOK 9816, PAGE 467 – NOT PLOTTABLE

BOOK 12386, PAGE 281 – NOT PLOTTABLE

EXCEPTION No. 11: BOOK 9944, PAGE 290 – NOT PLOTTABLE

BOOK 12386, PAGE 281 – NOT PLOTTABLE

EXCEPTION No. 12: BOOK 9328, PAGE 049 – PLOTTED

EXCEPTION No. 13a: LICENSE No. 4984, BOOK 7999, PAGE 001 – PLOTTED

EXCEPTION No. 13b: LICENSE No. 5274, BOOK 8159, PAGE 575 – PLOTTED

LICENSE No. 5276, BOOK 8159, PAGE 579 – PLOTTED

EXCEPTION No. 13c: LICENSE No. 5297, BOOK 8169, PAGE 131 – PLOTTED

EXCEPTION No. 14: NO RECORDING REFERENCE – NOT PLOTTABLE

EXCEPTION No. 15: BOOK 9944, PAGE 295 – PLOTTED "PARCEL B"

EXCEPTION No. 16: BOOK 10297, PAGE 023 – PARKING SPACES NOT PLOTTABLE; "PARCEL B" & "PARCEL D" PLOTTED (DOCK AND BOAT MOORING FACILITY)

EXCEPTION No. 17: BOOK 19684, PAGE 159 – "INITIAL SPACE" & "ADDITIONAL SPACE" NOT PLOTTABLE; "AREA OF TERRACE" PLOTTED

EXCEPTION No. 18: BOOK 20497, PAGE 276 – PLOTTED

EXCEPTION No. 19: BOOK 22808, PAGE 235 – PARKING SPACES NOT PLOTTABLE; "PARCEL I" PLOTTED

EXCEPTION No. 20: BOOK 42850, PAGE 007 MANAGEMENT AGREEMENT – NOT PLOTTABLE

EXCEPTION NO. 21: BOOK 42850, PAGE 001 OPTION AGREEMENT – NOT PLOTTABLE

PARKING SUMMARY

LEVEL B1	– REGULAR	137
	– HANDICAP	7
LEVEL B2	– REGULAR	175
	– HANDICAP	2
SECOND FLOOR	– REGULAR	123
	– HANDICAP	3
RAMP	– REGULAR	46
THIRD FLOOR	– REGULAR	131
	– HANDICAP	6
RAMP	– REGULAR	46
FOURTH FLOOR	– REGULAR	146
	– HANDICAP	5
RAMP	– REGULAR	46
FIFTH FLOOR	– REGULAR	148
	– HANDICAP	1
RAMP	– REGULAR	46
SIXTH FLOOR:	– REGULAR	138
RAMP	– REGULAR	46
SEVENTH FLOOR	– REGULAR	155
TOTAL	– REGULAR	1,383
	– HANDICAP	24

REFERENCES

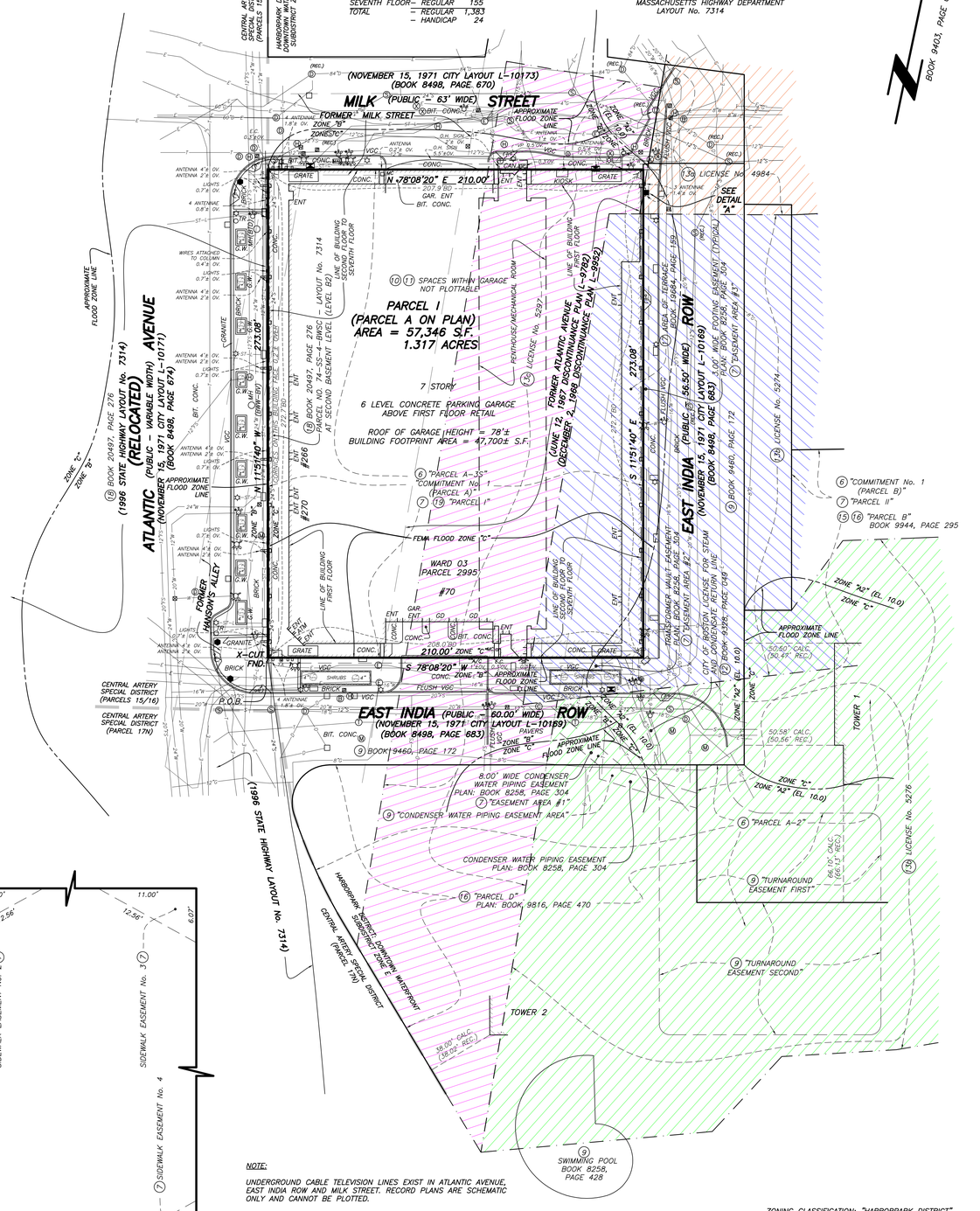
SUFFOLK COUNTY REGISTRY OF DEEDS
DEEDS
BOOK 24961, PAGE 191
BOOK 42849, PAGE 341

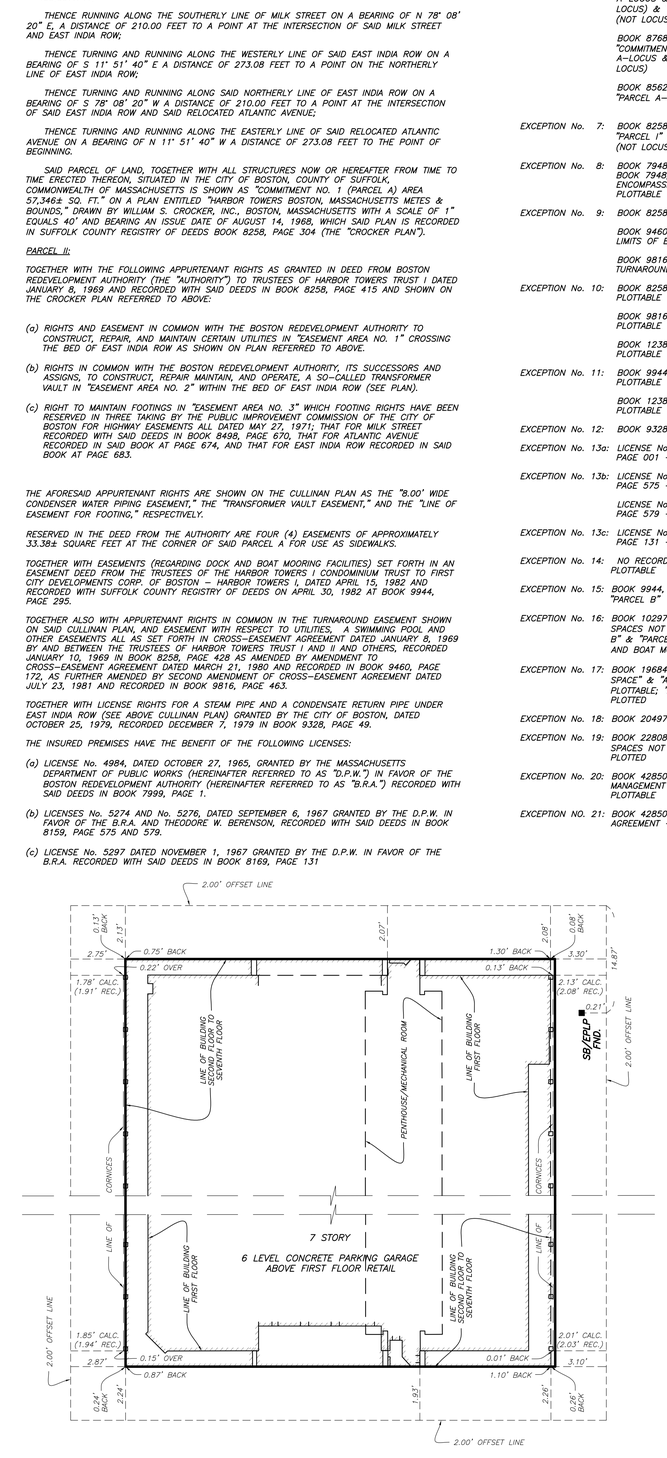
PLANS
BOOK 8258, PAGE 304
BOOK 9403, PAGE 079

CITY OF BOSTON ENGINEERING DEPARTMENT

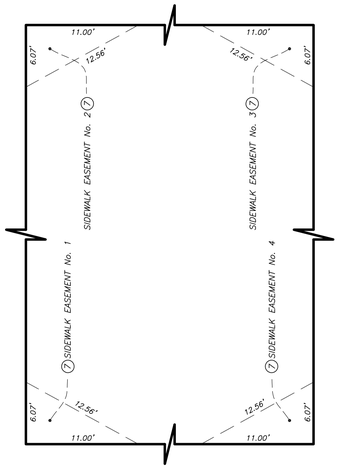
LAYOUT No. L– 9782
L– 9952
L–10169
L–10170
L–10171
L–10173

MASSACHUSETTS HIGHWAY DEPARTMENT
LAYOUT No. 7314





DETAIL "A"
NOT TO SCALE



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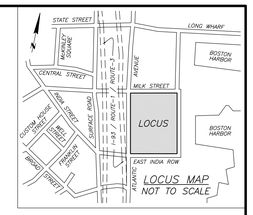

LEGEND:

- DECIDUOUS TREE
- MONUMENT
- SEWER MANHOLE
- DRAIN MANHOLE
- TELEPHONE MANHOLE
- CABLE TV MANHOLE
- MBTA MANHOLE
- STEAM MANHOLE
- ELECTRIC MANHOLE
- WATER MANHOLE
- BOSTON WATER AND SEWER COMMISSION MANHOLE
- HIGH PRESSURE FIRE SERVICE MANHOLE
- MH MANHOLE
- HANDICAP RAMP
- GAS SHUT OFF
- WATER SHUT OFF
- BOSTON WATER VALVE
- HIGH PRESSURE FIRE SERVICE VALVE
- BOSTON WATER AND SEWER COMMISSION VALVE
- CATCH BASIN
- HYDRANT
- SIGN
- MAIL BOX
- TRAFFIC SIGNAL
- TRAFFIC CONTROL BOX
- ELECTRIC HANDHOLE
- SPRINKLER CONTROL
- OBSERVATION WELL
- LIGHT POLE
- FA FIRE ALARM
- TR TRASH RECEPTACLE
- MC METAL COVER
- BIT. BITUMINOUS
- CONC. CONCRETE
- VGC VERTICAL GRANITE CURB
- HPFS HIGH PRESSURE FIRE SERVICE
- ATM AUTOMATED TELLER MACHINE
- G.W. GRANITE WALL WITH METAL RAIL
- BD BUILDING DIMENSION
- SB STONE BOUND
- P.O.B. POINT OF BEGINNING
- A/C AIR CONDITIONING UNIT
- S.F. SQUARE FEET
- GAR. GARAGE
- ENT ENTRANCE
- E.C. ELECTRIC CONDUIT
- OV. OVER
- BK. BACK
- CAN. CANOPY
- O.H. OVERHEAD
- VP VERTICAL PIPE
- (#) TITLE EXCEPTIONS PER SCHEDULE B – SECTION 2 OF LAWYERS TITLE INSURANCE CORPORATION'S COMMITMENT FOR TITLE INSURANCE, CASE No. C15071, EFFECTIVE DATE: MAY 16, 2008 AT 9:34 A.M.
- ST–L STREET LIGHTING
- E ELECTRIC
- G GAS
- T TELEPHONE
- S SEWER
- CS COMBINED SEWER
- D DRAIN
- W WATER
- FS WATER–HIGH PRESSURE FIRE SERVICE
- LICENSE No. 4984
- LICENSE No. 5274
- LICENSE No. 5276
- LICENSE No. 5297

I hereby certify to the Hartford Life Insurance Company, Hartford Fire Insurance Company, Hartford Life and Annuity Insurance Company, their successors and assigns as their interests may appear, Lawyers Title Insurance Corporation and RHDC 70 East India LLC that:

1. This survey has been made (i) in accordance with "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS" jointly established and adopted by American Land Title Association ("ALTA"), and National Society of Professional Surveyors ("NSPS") in 2005, and includes items 1(the building monuments the property, 2, 3, 4, 6, 7(a), 7(b)(1), 7(c), 8, 9, 10, 11(b), 13, 14, 16, 17 and 18 of Table A thereof, and (ii) pursuant to the Accuracy Standards as adopted by ALTA and NSPS and in effect on the date of this certification, I further certify that in my professional opinion, as a land surveyor registered in the Commonwealth of Massachusetts, the Relative Positional Accuracy of this survey does no exceed that which is specified therein.

2. This survey was made on the ground between August 28, 2007 and February 8, 2008 and correctly shows the area of the subject property, the location and type of all buildings, visible structures and other visible improvements situated on the subject property, and any other matters situated on the subject property.

3. Except as shown on this survey, there are no visible easements or rights of way.

4. Except as shown or noted on this survey, there are no observable, above ground encroachments (a) by the improvements on the subject property upon adjoining properties, streets or alleys, or (b) by the improvements on adjoining properties, streets or alleys upon the subject property.

5. The location of each easement, right of way, and other matter affecting the subject property and listed in the title insurance commitment dated May 16, 2008, issued by Lawyers Title Insurance Corporation with respect to the subject property has been shown on this survey, together with appropriate recording references, to the extent such matters can be located. The property shown on this survey is the property described in that title commitment.

6. By graphic plotting only, the property shown hereon lies partially within a Zone "C", an area of minimal flooding, and partially within a Zone "A2" (Base Flood Elevation 10.0 NGVD), area of 100–year flood, as shown on the Federal Emergency Management Agency (F.E.M.A.) Flood Insurance Rate Map (F.I.R.M) for the City Of Boston, Suffolk County, Massachusetts, Community Panel Number 250286 0011 D having a revised date of November 2, 1990 (See Elevation Certificate dated February 8, 2008).

Harry R. Feldman, Inc.

Date: _____

_____
Robert G. Applegate, PLS
Vice President
Registration No. 28514

NOTE:

UNDERGROUND CABLE TELEVISION LINES EXIST IN ATLANTIC AVENUE, EAST INDIA ROW AND MILK STREET. RECORD PLANS ARE SCHEMATIC ONLY AND CANNOT BE PLOTTED.

VISIBLE ENCROACHMENTS

– THE BUILDING ON LOCUS (UP TO 0.22' OVER), ANTENNAE (2'± & 4'± OVER), LIGHTS (0.7'± OVER), CORNICES (0.2'± OVER) AND WIRES ATTACHED TO THE BUILDING (0.4'± OVER) ENCROACH INTO ATLANTIC AVENUE.

– AN ELECTRIC CONDUIT (0.3'± OVER), ANTENNAE (UP TO 1.8'± OVER), OVERHEAD SIGNS (2'± & 5.5'± OVER), A VERTICAL PIPE (0.5' OVER) AND A SPRINKLER CONTROL (0.3' OVER) ENCROACH INTO MILK STREET.

– THE BUILDING ON LOCUS (0.07' OVER), AN ELECTRIC CONDUIT (0.3' OVER), ANTENNAE (UP TO 1.8'± OVER), A SPRINKLER CONTROL (0.3' OVER) AND AN AIR CONDITIONING UNIT (1'± OVER) ENCROACH INTO EAST INDIA ROW.

ZONING CLASSIFICATION: "HARBORPARK DISTRICT"
SUBDISTRICT: DOWNTOWN WATERFRONT
SUBDISTRICT ZONE E
OVERLAY: RESTRICTED PARKING OVERLAY DISTRICT

WATERFRONT YARD AREA SETBACKS:

SETBACK (END OF PIERS)	50 FEET
SETBACK (SIDES OF PIERS)	12 FEET
SETBACK (SHORELINE, EXCLUDING PIERS)	35 FEET
MAXIMUM BUILDING HEIGHT	155 FEET
MAXIMUM FLOOR AREA RATIO	4.0

05/21/2008	EXCEPTIONS FROM COVERAGE AND CERTIFICATION REVISED
03/12/2008	ADDED TWO ENTITIES TO THE CERTIFICATION
12/06/2007	REVISED PARTY IN CERTIFICATION
11/13/2007	REVISED PER UPDATED TITLE COMMITMENT
11/12/2007	ADDED PARKING COUNT FOR LEVELS B1 & B2
11/06/2007	REVISED PER NEW TITLE COMMITMENT

ALTA/ACSM LAND TITLE SURVEY
BOSTON HARBOR GARAGE
70 EAST INDIA ROW
BOSTON, MASS.

SCALE: 1"=30'
HARRY R. FELDMAN, INC.
112 SHAWMUT AVENUE
BOSTON, MASS. 02118

AUGUST 28, 2007
LAND SURVEYORS
PHONE: (617)357–9740
WWW.HARRYRFELDMAN.COM

FELDMAN
Professional Land Surveyors

GRAPHIC SCALE
30 0 15 30 60 120

RESEARCH MJB	FIELD CHIEF JM	CHECKED	APPROVED	FILE NAME 12061–ALTA–5
CALC MB	CADD MJB	FIELD CHECKED MJB	CRD FILE 12061	JOB NO. 12061

Appendix B

Transportation

Appendix B – Transportation

Peak Hour Vehicle, Pedestrian, and Bicycle Counts
Seasonal Adjustment Factors
Crash Rate Worksheets
Transit Capacity Analysis
Proposed Trip Generation
Synchro Intersection Level of Service Reports

- Existing (2018) Condition
- No-Build (2026) Condition
- Build (2026) Condition
- Build (2026) Condition with Mitigation

Peak Hour Vehicle, Pedestrian, and Bicycle Counts

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 1
Location:	Boston, MA
Street 1:	Milk Street
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

TOTAL (CARS & TRUCKS)

	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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	2	0	0	0	0	0	0	0	0	9	32	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	11	34	0	0	1	0
7:30 AM	0	3	0	0	0	0	0	0	0	0	12	39	0	0	1	0
7:45 AM	0	4	0	0	0	0	0	0	0	0	14	44	0	0	0	0
8:00 AM	0	3	0	0	0	0	0	0	0	0	15	50	0	0	1	0
8:15 AM	0	5	0	0	0	0	0	0	0	0	14	49	0	0	0	0
8:30 AM	0	5	0	0	0	0	0	0	0	0	13	46	0	0	1	0
8:45 AM	0	4	0	0	0	0	0	0	0	0	12	43	0	0	0	0

	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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	24	0	17	0	0	0	0	0	0	23	8	0	0	0	0
4:15 PM	0	25	0	18	0	0	0	0	0	0	21	9	0	0	1	0
4:30 PM	0	26	0	18	0	0	0	0	0	0	19	10	0	0	1	0
4:45 PM	0	28	0	19	0	0	0	0	0	0	17	12	0	0	0	0
5:00 PM	0	29	0	20	0	0	0	0	0	0	15	12	0	0	1	0
5:15 PM	0	27	0	19	0	0	0	0	0	0	16	11	0	0	2	0
5:30 PM	0	28	0	17	0	0	0	0	0	0	14	12	0	0	0	0
5:45 PM	0	27	0	15	0	0	0	0	0	0	12	11	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**56**	**189**	**0**	**0**	**2**	**0**
PHF	**0.85**				**0.00**				**0.94**				**0.50**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**110**	**0**	**76**	**0**	**0**	**0**	**0**	**0**	**0**	**67**	**45**	**0**	**0**	**4**	**0**
PHF	**0.95**				**0.00**				**0.97**				**0.50**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 1
Location:	Boston, MA
Street 1:	Milk Street
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
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TRUCKS

	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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	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	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	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	0	0

	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	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	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	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 7:15 AM to 8:15 AM	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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**	**3**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Boston Harbor Garage Driveway Northbound				Southbound				Milk Street Eastbound				Milk 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**	**3**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 1
Location:	Boston, MA
Street 1:	Milk Street
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Boston Harbor Garage Driveway Northbound					Southbound					Milk Street Eastbound					Milk 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	18		0	0	0	0		0	0	0	5		0	0	0	11	
7:15 AM	0	0	0	20		0	0	0	0		0	1	0	8		0	0	0	13	
7:30 AM	0	0	0	22		0	0	0	0		0	1	0	6		0	0	0	14	
7:45 AM	0	0	0	24		0	0	0	0		0	2	0	9		0	1	0	17	
8:00 AM	0	0	0	25		0	0	0	0		0	0	0	7		0	0	0	15	
8:15 AM	0	0	0	28		0	0	0	0		0	2	0	10		0	0	0	14	
8:30 AM	0	0	0	26		0	0	0	0		0	3	0	12		0	0	0	16	
8:45 AM	0	0	0	30		0	0	0	0		0	2	0	11		0	0	0	15	

	Boston Harbor Garage Driveway Northbound					Southbound					Milk Street Eastbound					Milk 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	98		0	0	0	0		0	2	0	15		0	0	0	32	
4:15 PM	0	0	0	102		0	0	0	0		0	0	0	18		0	0	0	34	
4:30 PM	0	0	0	105		0	0	0	0		0	2	0	22		0	1	0	38	
4:45 PM	0	0	0	118		0	0	0	0		0	2	0	24		0	0	0	35	
5:00 PM	0	0	0	114		0	0	0	0		0	3	0	26		0	0	0	36	
5:15 PM	0	0	0	120		0	0	0	0		0	2	0	23		0	1	0	40	
5:30 PM	0	0	0	118		0	0	0	0		0	1	0	25		0	0	0	42	
5:45 PM	0	0	0	124		0	0	0	0		0	1	0	22		0	0	0	38	

AM PEAK HOUR[1]	Boston Harbor Garage Driveway Northbound					Southbound					Milk Street Eastbound					Milk Street Westbound				
7:45 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:45 AM	0	0	0	103		0	0	0	0		0	7	0	38		0	1	0	62	

PM PEAK HOUR[1]	Boston Harbor Garage Driveway Northbound					Southbound					Milk Street Eastbound					Milk Street Westbound				
4:30 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:30 PM	0	0	0	457		0	0	0	0		0	9	0	95		0	2	0	149	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 2
Location:	Boston, MA
Street 1:	East India Row
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Boston Harbor Garage Driveway								East India Row				East India Row			
	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	0	0	7	0	7	1	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	7	0	8	2	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	5	0	7	3	0	0	0	5	0
7:45 AM	0	0	0	0	0	0	0	8	0	8	4	0	0	0	5	0
8:00 AM	0	0	0	0	0	1	0	5	0	6	5	0	0	0	6	0
8:15 AM	0	0	0	0	0	1	0	6	0	6	6	0	0	0	7	0
8:30 AM	0	0	0	0	0	1	0	4	0	5	5	0	0	0	5	0
8:45 AM	0	0	0	0	0	0	0	5	0	8	3	0	0	0	3	0

	Boston Harbor Garage Driveway								East India Row				East India Row			
	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	0	0	4	0	5	4	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	3	0	3	7	0	0	0	6	2
4:30 PM	0	0	0	0	0	0	0	2	0	1	6	0	0	0	5	0
4:45 PM	0	0	0	0	0	0	0	5	0	3	5	0	0	0	4	0
5:00 PM	0	0	0	0	0	0	0	3	0	2	5	0	0	0	4	0
5:15 PM	0	0	0	0	0	0	0	7	0	2	4	0	0	0	3	1
5:30 PM	0	0	0	0	0	0	0	8	0	3	3	0	0	0	3	0
5:45 PM	0	0	0	0	0	0	0	6	0	5	2	0	0	0	3	0

AM PEAK HOUR	Boston Harbor Garage Driveway								East India Row				East India Row			
7:30 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
8:30 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**24**	**0**	**27**	**18**	**0**	**0**	**0**	**23**	**0**
PHF	**0.00**				**0.81**				**0.94**				**0.82**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR	Boston Harbor Garage Driveway								East India Row				East India Row			
4:00 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
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**12**	**22**	**0**	**0**	**0**	**18**	**2**
PHF	**0.00**				**0.70**				**0.85**				**0.63**			
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%**	**5.6%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 2
Location:	Boston, MA
Street 1:	East India Row
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Boston Harbor Garage Driveway								East India Row				East India Row			
	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	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	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	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	1	0	0	0	0	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	0	0

	Boston Harbor Garage Driveway								East India Row				East India Row			
	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	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	1	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	Boston Harbor Garage Driveway								East India Row				East India Row			
7:30 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
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.00**				**0.25**				**0.00**			

PM PEAK HOUR	Boston Harbor Garage Driveway								East India Row				East India Row			
4:00 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
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
PHF	**0.00**				**0.00**				**0.00**				**0.25**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 2
Location:	Boston, MA
Street 1:	East India Row
Street 2:	Boston Harbor Garage Driveway
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Boston Harbor Garage Driveway Northbound					Boston Harbor Garage Driveway Southbound					East India Row Eastbound					East India Row 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	18		0	0	0	0		0	0	0	3	
7:15 AM	0	0	0	0		0	0	0	22		0	0	0	0		0	0	0	5	
7:30 AM	0	0	0	0		0	0	0	25		0	1	0	2		0	1	0	6	
7:45 AM	0	0	0	0		0	0	0	28		0	0	0	3		0	1	0	9	
8:00 AM	0	0	0	0		0	0	0	35		0	0	0	5		0	0	0	12	
8:15 AM	0	0	0	0		0	0	0	32		0	0	0	3		0	1	0	14	
8:30 AM	0	0	0	0		0	0	0	34		0	1	0	4		0	1	0	15	
8:45 AM	0	0	0	0		0	0	0	36		0	0	0	3		0	0	0	18	

	Boston Harbor Garage Driveway Northbound					Boston Harbor Garage Driveway Southbound					East India Row Eastbound					East India Row 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	48		0	0	0	2		0	0	0	5	
4:15 PM	0	0	0	0		0	0	0	50		0	1	0	5		0	0	0	7	
4:30 PM	0	0	0	0		0	0	0	52		0	0	0	4		0	1	0	8	
4:45 PM	0	0	0	0		0	0	0	54		0	1	0	6		0	1	0	9	
5:00 PM	0	0	0	0		0	0	0	58		0	1	0	5		0	1	0	8	
5:15 PM	0	0	0	0		0	0	0	60		0	0	0	7		0	0	0	9	
5:30 PM	0	0	0	0		0	0	0	55		0	1	0	8		0	1	0	10	
5:45 PM	0	0	0	0		0	0	0	54		0	0	0	6		0	0	0	7	

AM PEAK HOUR[1]	Boston Harbor Garage Driveway Northbound					Boston Harbor Garage Driveway Southbound					East India Row Eastbound					East India Row Westbound				
7:30 AM to 8:30 AM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	0	0	120		0	1	0	13		0	3	0	41	

PM PEAK HOUR[1]	Boston Harbor Garage Driveway Northbound					Boston Harbor Garage Driveway Southbound					East India Row Eastbound					East India Row Westbound				
4:00 PM to 5:00 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	0	0	204		0	2	0	17		0	2	0	29	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 3
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk 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	124	9	0	0	0	0	0	15	32	0	0	0	0	2
7:15 AM	0	0	127	10	0	0	0	0	0	18	35	0	0	0	0	2
7:30 AM	0	0	130	13	0	0	0	0	0	21	38	0	0	0	0	4
7:45 AM	0	0	148	16	0	0	0	0	0	23	42	0	0	0	0	3
8:00 AM	0	0	163	19	0	0	0	0	0	25	46	0	0	0	0	4
8:15 AM	0	0	178	21	0	0	0	0	0	26	42	0	0	0	0	5
8:30 AM	0	0	180	20	0	0	0	0	0	25	39	0	0	0	0	6
8:45 AM	0	0	174	18	0	0	0	0	0	23	37	0	0	0	0	4

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk 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	122	8	0	0	0	0	0	33	23	0	0	0	0	24
4:15 PM	0	0	106	9	0	0	0	0	0	35	21	0	0	0	0	26
4:30 PM	0	0	109	10	0	0	0	0	0	41	19	0	0	0	0	27
4:45 PM	0	0	130	12	0	0	0	0	0	44	17	0	0	0	0	28
5:00 PM	0	0	169	11	0	0	0	0	0	46	16	0	0	0	0	30
5:15 PM	0	0	183	12	0	0	0	0	0	48	15	0	0	0	0	29
5:30 PM	0	0	193	11	0	0	0	0	0	46	14	0	0	0	0	28
5:45 PM	0	0	191	10	0	0	0	0	0	43	13	0	0	0	0	27

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**695**	**78**	**0**	**0**	**0**	**0**	**0**	**99**	**164**	**0**	**0**	**0**	**0**	**19**
PHF	**0.97**				**0.00**				**0.93**				**0.79**			
HV %	**0.0%**	**0.0%**	**2.4%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**736**	**44**	**0**	**0**	**0**	**0**	**0**	**183**	**58**	**0**	**0**	**0**	**0**	**114**
PHF	**0.96**				**0.00**				**0.96**				**0.95**			
HV %	**0.0%**	**0.0%**	**0.8%**	**2.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 3
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0
8:15 AM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk 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	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**18**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**
PHF	**0.79**				**0.00**				**1.00**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Milk Street Eastbound				Milk Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**
PHF	**0.67**				**0.00**				**0.50**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 3
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Milk Street Eastbound					Milk Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	10	0	15		0	0	0	14		0	0	0	5		0	0	0	96	
7:15 AM	0	11	0	16		0	0	0	15		0	1	0	6		0	0	0	104	
7:30 AM	0	12	0	18		0	0	0	16		1	1	0	5		0	0	0	108	
7:45 AM	0	14	1	22		0	0	0	20		0	1	0	8		0	0	1	126	
8:00 AM	0	15	0	24		0	0	0	24		1	0	0	10		0	0	0	144	
8:15 AM	0	16	0	26		0	0	0	28		1	2	0	12		0	0	0	152	
8:30 AM	0	15	1	30		0	0	0	32		0	2	0	15		0	0	0	145	
8:45 AM	0	18	1	28		0	0	0	30		0	1	0	14		0	0	0	140	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Milk Street Eastbound					Milk Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	11	1	40		0	0	0	50		0	1	0	22		0	0	0	136	
4:15 PM	0	13	0	42		0	0	0	54		1	0	0	24		0	0	0	142	
4:30 PM	0	17	0	45		0	0	0	56		0	2	0	25		0	0	1	148	
4:45 PM	0	18	1	47		0	0	0	58		0	1	0	28		0	0	0	150	
5:00 PM	0	21	1	50		0	0	0	60		1	2	0	30		0	0	0	156	
5:15 PM	0	20	0	52		0	0	0	58		0	2	0	26		0	0	1	158	
5:30 PM	0	18	1	48		0	0	0	55		1	0	0	28		0	0	0	155	
5:45 PM	0	17	0	46		0	0	0	54		0	1	0	25		0	0	0	148	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Milk Street Eastbound					Milk 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	64	2	108		0	0	0	114		2	5	0	51		0	0	0	581	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Milk Street Eastbound					Milk 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	76	2	196		0	0	0	227		2	5	0	109		0	0	1	617	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 4
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	India Street/ East India Row
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row 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	29	131	8	0	0	0	0	0	0	0	0	0	0	7	2
7:15 AM	0	32	134	10	0	0	0	0	0	0	0	0	0	0	8	3
7:30 AM	0	35	139	11	0	0	0	0	0	0	0	0	0	0	6	4
7:45 AM	0	34	157	12	0	0	0	0	0	0	0	0	0	0	7	6
8:00 AM	0	33	177	11	0	0	0	0	0	0	0	0	0	0	6	5
8:15 AM	0	31	192	12	0	0	0	0	0	0	0	0	0	0	7	6
8:30 AM	0	30	196	10	0	0	0	0	0	0	0	0	0	0	5	5
8:45 AM	0	29	188	11	0	0	0	0	0	0	0	0	0	0	4	4

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row 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	128	9	0	0	0	0	0	0	0	0	0	0	5	2
4:15 PM	0	23	112	10	0	0	0	0	0	0	0	0	0	0	6	4
4:30 PM	0	25	116	7	0	0	0	0	0	0	0	0	0	0	4	3
4:45 PM	0	22	138	8	0	0	0	0	0	0	0	0	0	0	5	4
5:00 PM	0	23	176	7	0	0	0	0	0	0	0	0	0	0	3	4
5:15 PM	0	19	190	6	0	0	0	0	0	0	0	0	0	0	5	5
5:30 PM	0	17	200	6	0	0	0	0	0	0	0	0	0	0	7	4
5:45 PM	0	15	198	7	0	0	0	0	0	0	0	0	0	0	6	3

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**123**	**753**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**20**
PHF	**0.97**				**0.00**				**0.00**				**0.81**			
HV %	**0.0%**	**1.6%**	**2.4%**	**2.3%**	**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 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**74**	**764**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**16**
PHF	**0.97**				**0.00**				**0.00**				**0.84**			
HV %	**0.0%**	**1.4%**	**0.9%**	**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:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 4
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	India Street/ East India Row
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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Office: 978-746-1259
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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row 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	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row 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	2	0	0	0	0	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	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**18**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.88**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				India Street Eastbound				East India Row Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
PHF	**0.92**				**0.00**				**0.00**				**0.25**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 4
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	India Street/ East India Row
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					India Street Eastbound					East India Row Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	1	10	0	22		0	0	0	12		0	0	0	0		0	0	0	115	
7:15 AM	2	11	0	25		0	0	0	15		0	0	0	1		0	0	0	126	
7:30 AM	1	12	1	26		0	0	0	14		0	0	0	2		0	1	0	132	
7:45 AM	2	14	0	28		0	0	0	16		0	0	0	6		0	0	1	148	
8:00 AM	1	15	0	25		0	0	0	20		0	0	0	9		0	0	0	160	
8:15 AM	1	16	0	26		0	0	0	17		0	0	0	10		0	1	0	178	
8:30 AM	4	15	1	24		0	0	0	18		0	0	0	12		0	0	1	185	
8:45 AM	1	19	0	25		0	0	0	16		0	0	0	11		0	0	0	180	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					India Street Eastbound					East India Row Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	2	12	0	40		0	0	0	10		0	0	0	9		0	0	0	122	
4:15 PM	1	13	1	45		0	0	0	14		0	0	0	11		0	0	0	135	
4:30 PM	2	16	0	48		0	0	0	12		0	0	0	10		0	0	1	156	
4:45 PM	1	19	1	52		0	0	0	13		0	0	0	12		0	1	0	190	
5:00 PM	1	21	1	58		0	0	0	18		0	0	0	14		0	0	1	268	
5:15 PM	3	20	0	60		0	0	0	24		0	0	0	11		0	0	0	315	
5:30 PM	0	19	1	64		0	0	0	30		0	0	0	12		0	1	0	340	
5:45 PM	1	17	0	62		0	0	0	28		0	0	0	10		0	0	0	332	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					India Street Eastbound					East India Row Westbound				
8:00 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	7	65	1	100		0	0	0	71		0	0	0	42		0	1	1	703	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					India Street Eastbound					East India Row Westbound				
5:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	5	77	2	244		0	0	0	100		0	0	0	47		0	1	1	1255	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 5
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	India Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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	43	3	0	0	0	0	0	16	16	0
7:15 AM	0	0	0	0	0	0	38	4	0	0	0	0	0	17	18	0
7:30 AM	0	0	0	0	0	0	35	5	0	0	0	0	0	18	20	0
7:45 AM	0	0	0	0	0	0	47	6	0	0	0	0	0	19	21	0
8:00 AM	0	0	0	0	0	0	56	8	0	0	0	0	0	23	22	0
8:15 AM	0	0	0	0	0	0	62	9	0	0	0	0	0	21	23	0
8:30 AM	0	0	0	0	0	0	61	8	0	0	0	0	0	19	22	0
8:45 AM	0	0	0	0	0	0	62	7	0	0	0	0	0	16	21	0

	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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	170	5	0	0	0	0	0	20	6	0
4:15 PM	0	0	0	0	0	0	161	7	0	0	0	0	0	22	7	0
4:30 PM	0	0	0	0	0	0	148	8	0	0	0	0	0	20	9	0
4:45 PM	0	0	0	0	0	0	128	6	0	0	0	0	0	17	10	0
5:00 PM	0	0	0	0	0	0	108	7	0	0	0	0	0	14	12	0
5:15 PM	0	0	0	0	0	0	106	5	0	0	0	0	0	11	13	0
5:30 PM	0	0	0	0	0	0	104	6	0	0	0	0	0	12	12	0
5:45 PM	0	0	0	0	0	0	102	5	0	0	0	0	0	10	11	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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**	**241**	**32**	**0**	**0**	**0**	**0**	**0**	**79**	**88**	**0**
PHF	**0.00**				**0.96**				**0.00**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**6.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**1.1%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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**	**607**	**26**	**0**	**0**	**0**	**0**	**0**	**79**	**32**	**0**
PHF	**0.00**				**0.90**				**0.00**				**0.96**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.5%**	**3.1%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 5
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	India Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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	2	0	0	0	0	0	0	1	1	0
7:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	2	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	1	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**
PHF	**0.00**				**0.80**				**0.00**				**0.75**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				India Street Eastbound				India 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**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**
PHF	**0.00**				**0.67**				**0.00**				**0.38**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 5
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	India Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					India Street Eastbound					India 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	10		0	6	0	15		0	0	0	35		0	1	0	32	
7:15 AM	0	0	0	12		0	7	1	16		0	0	0	38		1	1	0	35	
7:30 AM	0	0	0	14		0	9	1	18		0	0	0	42		0	2	0	38	
7:45 AM	0	0	0	11		1	10	0	23		0	0	0	46		2	0	0	42	
8:00 AM	0	0	0	10		0	9	0	28		0	0	0	54		0	1	0	45	
8:15 AM	0	0	0	11		0	11	1	32		0	0	0	60		1	1	0	48	
8:30 AM	0	0	0	9		1	10	0	34		0	0	0	65		1	3	0	46	
8:45 AM	0	0	0	8		0	8	0	33		0	0	0	62		0	1	0	45	

	Surface Road Northbound					Surface Road Southbound					India Street Eastbound					India 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	14		0	14	0	20		0	0	0	39		1	1	0	32	
4:15 PM	0	0	0	16		0	15	1	23		0	0	0	41		0	1	0	34	
4:30 PM	0	0	0	18		0	11	0	22		0	0	0	44		1	1	0	36	
4:45 PM	0	0	0	15		1	10	0	21		0	0	0	47		0	2	0	41	
5:00 PM	0	0	0	14		0	12	1	19		0	0	0	50		0	1	0	45	
5:15 PM	0	0	0	12		0	11	0	20		0	0	0	52		1	2	0	50	
5:30 PM	0	0	0	10		0	9	1	18		0	0	0	54		0	1	0	48	
5:45 PM	0	0	0	11		0	10	0	17		0	0	0	53		0	1	0	46	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					India Street Eastbound					India 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	38		1	38	1	127		0	0	0	241		2	6	0	184	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					India Street Eastbound					India Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	63		1	50	1	86		0	0	0	171		2	5	0	143	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 6
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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	32	43	0	0	0	15	3	0	0	0	0
7:15 AM	0	0	0	0	0	36	38	0	0	0	17	4	0	0	0	0
7:30 AM	0	0	0	0	0	40	36	0	0	0	19	4	0	0	0	0
7:45 AM	0	0	0	0	0	44	48	0	0	0	21	5	0	0	0	0
8:00 AM	0	0	0	0	0	48	61	0	0	0	23	3	0	0	0	0
8:15 AM	0	0	0	0	0	46	67	0	0	0	22	4	0	0	0	0
8:30 AM	0	0	0	0	0	43	66	0	0	0	21	3	0	0	0	0
8:45 AM	0	0	0	0	0	41	65	0	0	0	19	4	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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	27	172	0	0	0	29	3	0	0	0	0
4:15 PM	0	0	0	0	0	25	164	0	0	0	31	4	0	0	0	0
4:30 PM	0	0	0	0	0	28	152	0	0	0	32	4	0	0	0	0
4:45 PM	0	0	0	0	0	27	129	0	0	0	34	5	0	0	0	0
5:00 PM	0	0	0	0	0	26	111	0	0	0	36	4	0	0	0	0
5:15 PM	0	0	0	0	0	28	105	0	0	0	35	6	0	0	0	0
5:30 PM	0	0	0	0	0	27	106	0	0	0	33	4	0	0	0	0
5:45 PM	0	0	0	0	0	25	104	0	0	0	31	3	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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**	**178**	**259**	**0**	**0**	**0**	**85**	**14**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.97**				**0.95**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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**	**107**	**617**	**0**	**0**	**0**	**126**	**16**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.91**				**0.91**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 6
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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**	**2**	**16**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.90**				**0.25**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Milk Street Eastbound				Milk 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**	**2**	**8**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.83**				**0.25**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 6
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Milk Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					Milk Street Eastbound					Milk 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	20		0	6	0	12		0	0	0	32		0	0	0	14	
7:15 AM	0	0	0	24		0	8	0	15		0	1	0	38		0	0	0	18	
7:30 AM	0	0	0	26		0	10	0	14		0	2	0	40		0	0	0	16	
7:45 AM	0	0	0	28		0	10	0	18		0	1	1	48		0	0	0	20	
8:00 AM	0	0	0	38		0	9	0	28		0	1	0	55		0	0	0	18	
8:15 AM	0	0	0	40		0	12	0	35		0	3	0	62		0	0	0	15	
8:30 AM	0	0	0	36		0	10	0	38		0	2	1	65		0	0	0	16	
8:45 AM	0	0	0	35		0	8	0	36		0	1	0	64		0	0	0	15	

	Surface Road Northbound					Surface Road Southbound					Milk Street Eastbound					Milk 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	32		0	14	0	22		0	1	0	68		0	0	0	22	
4:15 PM	0	0	0	35		0	15	0	26		0	1	1	70		0	0	0	26	
4:30 PM	0	0	0	38		0	11	0	25		0	2	0	75		0	0	0	28	
4:45 PM	0	0	0	36		0	10	0	28		0	1	1	72		0	0	0	30	
5:00 PM	0	0	0	40		0	13	0	32		0	3	0	70		0	0	0	34	
5:15 PM	0	0	0	38		0	11	0	28		0	2	0	74		0	0	0	28	
5:30 PM	0	0	0	35		0	9	0	30		0	1	1	68		0	0	0	25	
5:45 PM	0	0	0	34		0	10	0	27		0	1	0	65		0	0	0	26	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Milk Street Eastbound					Milk 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	149		0	39	0	137		0	7	1	246		0	0	0	64	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Milk Street Eastbound					Milk Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	141		0	50	0	101		0	5	2	285		0	0	0	106	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 7
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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	67	146	0	0	0	0	0	8	32	0
7:15 AM	0	0	0	0	0	0	65	151	0	0	0	0	0	9	34	0
7:30 AM	0	0	0	0	0	0	66	155	0	0	0	0	0	11	38	0
7:45 AM	0	0	0	0	0	0	80	156	0	0	0	0	0	12	41	0
8:00 AM	0	0	0	0	0	0	95	161	0	0	0	0	0	14	45	0
8:15 AM	0	0	0	0	0	0	98	162	0	0	0	0	0	15	48	0
8:30 AM	0	0	0	0	0	0	93	160	0	0	0	0	0	16	47	0
8:45 AM	0	0	0	0	0	0	92	158	0	0	0	0	0	14	45	0

	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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	175	63	0	0	0	0	0	18	33	0
4:15 PM	0	0	0	0	0	0	169	65	0	0	0	0	0	20	35	0
4:30 PM	0	0	0	0	0	0	158	71	0	0	0	0	0	22	36	0
4:45 PM	0	0	0	0	0	0	133	75	0	0	0	0	0	23	37	0
5:00 PM	0	0	0	0	0	0	117	80	0	0	0	0	0	20	40	0
5:15 PM	0	0	0	0	0	0	116	84	0	0	0	0	0	17	43	0
5:30 PM	0	0	0	0	0	0	114	83	0	0	0	0	0	19	42	0
5:45 PM	0	0	0	0	0	0	111	81	0	0	0	0	0	18	40	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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**	**378**	**641**	**0**	**0**	**0**	**0**	**0**	**59**	**185**	**0**
PHF	**0.00**				**0.98**				**0.00**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.7%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**2.2%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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**	**635**	**274**	**0**	**0**	**0**	**0**	**0**	**83**	**141**	**0**
PHF	**0.00**				**0.95**				**0.00**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**2.8%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 7
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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TRUCKS

	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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	2	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	2	0	0	0	0	0	1	2	0
7:30 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	3	2	0	0	0	0	0	1	1	0
8:00 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	3	2	0	0	0	0	0	1	1	0
8:30 AM	0	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	3	1	0	0	0	0	0	0	1	0

	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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	3	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	2	1	0	0	0	0	0	1	1	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
5:30 PM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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**	**14**	**6**	**0**	**0**	**0**	**0**	**0**	**2**	**6**	**0**
PHF	**0.00**				**1.00**				**0.00**				**0.67**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Surface Road Northbound				Surface Road Southbound				State Street Eastbound				State 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**	**7**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**
PHF	**0.00**				**0.69**				**0.00**				**0.75**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 7
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					State Street Eastbound					State 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	46		0	6	0	20		0	0	0	29		0	1	0	22	
7:15 AM	0	0	0	52		0	8	0	22		0	0	0	33		0	2	0	26	
7:30 AM	0	0	0	58		0	9	1	24		0	0	0	34		0	1	0	25	
7:45 AM	0	0	0	65		0	10	0	30		0	0	0	36		1	3	0	28	
8:00 AM	0	0	0	78		0	9	1	48		0	0	0	40		0	2	0	35	
8:15 AM	0	0	0	82		0	11	0	58		0	0	0	42		0	3	0	42	
8:30 AM	0	0	0	84		0	10	2	65		0	0	0	38		1	2	0	40	
8:45 AM	0	0	0	88		0	8	1	62		0	0	0	39		0	3	0	41	

	Surface Road Northbound					Surface Road Southbound					State Street Eastbound					State 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	114		0	14	0	72		0	0	0	52		0	2	0	18	
4:15 PM	0	0	0	125		0	15	1	80		0	0	0	54		0	3	0	22	
4:30 PM	0	0	0	128		0	11	2	85		0	0	0	55		1	2	0	20	
4:45 PM	0	0	0	132		0	10	0	78		0	0	0	58		0	4	0	24	
5:00 PM	0	0	0	129		0	12	1	75		0	0	0	62		0	3	0	27	
5:15 PM	0	0	0	135		0	11	2	70		0	0	0	60		1	2	0	32	
5:30 PM	0	0	0	130		0	9	1	78		0	0	0	58		0	3	0	30	
5:45 PM	0	0	0	128		0	10	0	74		0	0	0	62		0	2	0	28	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					State Street Eastbound					State 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	332		0	38	4	233		0	0	0	159		1	10	0	158	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					State Street Eastbound					State Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	499		0	50	3	315		0	0	0	219		1	11	0	84	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 8
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State 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	29	106	10	0	0	0	0	0	0	0	0	0	0	11	1
7:15 AM	0	31	108	12	0	0	0	0	0	0	0	0	0	0	12	2
7:30 AM	0	34	113	11	0	0	0	0	0	0	0	0	0	0	15	5
7:45 AM	0	36	122	13	0	0	0	0	0	0	0	0	0	0	17	7
8:00 AM	0	40	138	12	0	0	0	0	0	0	0	0	0	0	19	9
8:15 AM	0	42	151	13	0	0	0	0	0	0	0	0	0	0	21	11
8:30 AM	0	41	153	12	0	0	0	0	0	0	0	0	0	0	20	10
8:45 AM	0	40	149	11	0	0	0	0	0	0	0	0	0	0	19	9

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State 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	38	143	4	0	0	0	0	0	0	0	0	0	0	13	9
4:15 PM	0	40	137	6	0	0	0	0	0	0	0	0	0	0	15	10
4:30 PM	0	39	145	7	0	0	0	0	0	0	0	0	0	0	19	11
4:45 PM	0	37	167	8	0	0	0	0	0	0	0	0	0	0	23	12
5:00 PM	0	32	209	10	0	0	0	0	0	0	0	0	0	0	28	14
5:15 PM	0	30	231	9	0	0	0	0	0	0	0	0	0	0	30	13
5:30 PM	0	32	234	8	0	0	0	0	0	0	0	0	0	0	29	12
5:45 PM	0	31	227	7	0	0	0	0	0	0	0	0	0	0	27	11

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**163**	**591**	**48**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**79**	**39**
PHF	**0.97**				**0.00**				**0.00**				**0.92**			
HV %	**0.0%**	**1.2%**	**2.9%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**125**	**901**	**34**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**114**	**50**
PHF	**0.97**				**0.00**				**0.00**				**0.95**			
HV %	**0.0%**	**0.8%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 8
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State 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	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
PHF	**0.88**				**0.00**				**0.00**				**0.25**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				State Street Eastbound				State Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
PHF	**1.00**				**0.00**				**0.00**				**0.50**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 8
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	State Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					State Street Eastbound					State Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	10	0	48		0	0	0	35		0	0	0	6		0	0	0	108	
7:15 AM	0	11	0	52		0	0	0	38		0	0	0	8		0	1	0	120	
7:30 AM	1	12	1	54		0	0	0	40		0	0	0	10		0	2	1	132	
7:45 AM	0	16	0	60		0	0	0	44		0	0	0	11		0	0	1	155	
8:00 AM	2	15	0	55		0	0	0	40		0	0	0	12		0	1	0	170	
8:15 AM	1	16	1	50		0	0	0	42		0	0	0	15		0	0	1	185	
8:30 AM	0	15	1	58		0	0	0	38		0	0	0	13		0	1	0	172	
8:45 AM	1	16	0	52		0	0	0	40		0	0	0	11		0	1	0	168	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					State Street Eastbound					State Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	11	1	130		0	0	0	138		0	0	0	10		0	0	1	135	
4:15 PM	0	16	0	127		0	0	0	65		0	0	0	12		0	1	0	140	
4:30 PM	1	19	0	125		0	0	0	50		0	0	0	15		0	2	1	142	
4:45 PM	0	18	1	134		0	0	0	46		0	0	0	22		0	1	0	165	
5:00 PM	1	21	0	142		0	0	0	45		0	0	0	28		0	2	1	182	
5:15 PM	1	17	2	148		0	0	0	40		0	0	0	20		0	1	1	195	
5:30 PM	0	19	1	152		0	0	0	44		0	0	0	24		0	1	0	205	
5:45 PM	0	18	0	160		0	0	0	48		0	0	0	25		0	0	1	198	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					State Street Eastbound					State 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	4	62	2	215		0	0	0	160		0	0	0	51		0	3	1	695	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					State Street Eastbound					State 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	2	75	3	602		0	0	0	177		0	0	0	97		0	4	3	780	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 9
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Broad Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				Broad 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	0	0	0	0	59	0	0	0	0	11	0	0	0	0
7:15 AM	0	0	0	0	0	0	55	0	0	0	0	14	0	0	0	0
7:30 AM	0	0	0	0	0	0	53	0	0	0	0	17	0	0	0	0
7:45 AM	0	0	0	0	0	0	66	0	0	0	0	19	0	0	0	0
8:00 AM	0	0	0	0	0	0	79	0	0	0	0	21	0	0	0	0
8:15 AM	0	0	0	0	0	0	83	0	0	0	0	20	0	0	0	0
8:30 AM	0	0	0	0	0	0	80	0	0	0	0	19	0	0	0	0
8:45 AM	0	0	0	0	0	0	78	0	0	0	0	17	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				Broad 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	190	0	0	0	0	17	0	0	0	0
4:15 PM	0	0	0	0	0	0	183	0	0	0	0	16	0	0	0	0
4:30 PM	0	0	0	0	0	0	168	0	0	0	0	15	0	0	0	0
4:45 PM	0	0	0	0	0	0	145	0	0	0	0	14	0	0	0	0
5:00 PM	0	0	0	0	0	0	122	0	0	0	0	13	0	0	0	0
5:15 PM	0	0	0	0	0	0	117	0	0	0	0	15	0	0	0	0
5:30 PM	0	0	0	0	0	0	116	0	0	0	0	14	0	0	0	0
5:45 PM	0	0	0	0	0	0	112	0	0	0	0	13	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				Broad Street Eastbound				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**	**320**	**0**	**0**	**0**	**0**	**77**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.96**				**0.92**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Broad Street Eastbound				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**	**686**	**0**	**0**	**0**	**0**	**62**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.90**				**0.91**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 9
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Broad Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Surface Road Northbound				Surface Road Southbound				Broad 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	0	0	0	0	2	0	0	0	0	1	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				Broad 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	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
5:15 PM	0	0	0	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	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Surface Road Northbound				Surface Road Southbound				Broad Street Eastbound				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**	**15**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.75**				**0.50**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Broad Street Eastbound				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**	**10**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.83**				**0.25**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 9
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Broad Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					Broad Street 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	12		0	6	0	5		0	0	2	36		0	0	0	0	
7:15 AM	0	0	0	18		0	7	0	8		0	0	1	40		0	0	0	0	
7:30 AM	0	0	0	22		0	8	0	10		0	0	2	45		0	0	0	0	
7:45 AM	0	0	0	24		0	11	0	12		0	0	1	48		0	0	0	0	
8:00 AM	0	0	0	25		0	10	0	8		0	0	1	52		0	0	0	0	
8:15 AM	0	0	0	30		0	12	0	9		0	0	1	60		0	0	0	0	
8:30 AM	0	0	0	28		0	11	0	10		0	0	1	58		0	0	0	0	
8:45 AM	0	0	0	26		0	7	0	8		0	0	2	55		0	0	0	0	

	Surface Road Northbound					Surface Road Southbound					Broad Street 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	22		0	16	0	12		0	0	2	42		0	0	0	0	
4:15 PM	0	0	0	30		0	14	0	14		0	0	1	56		0	0	0	0	
4:30 PM	0	0	0	38		0	12	0	11		0	0	1	70		0	0	0	0	
4:45 PM	0	0	0	45		0	10	0	12		0	0	2	82		0	0	0	0	
5:00 PM	0	0	0	52		0	11	0	15		0	0	3	98		0	0	0	0	
5:15 PM	0	0	0	58		0	12	0	14		0	0	1	105		0	0	0	0	
5:30 PM	0	0	0	60		0	9	0	16		0	0	2	102		0	0	0	0	
5:45 PM	0	0	0	55		0	10	0	15		0	0	2	96		0	0	0	0	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Broad Street 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	0	0	109		0	40	0	35		0	0	5	225		0	0	0	0	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Broad Street Eastbound					Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	135		0	52	0	49		0	0	6	250		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 10
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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	14	56	0	0	0	10	33	0	0	0	0
7:15 AM	0	0	0	0	0	15	54	0	0	0	11	35	0	0	0	0
7:30 AM	0	0	0	0	0	17	53	0	0	0	14	36	0	0	0	0
7:45 AM	0	0	0	0	0	19	66	0	0	0	16	34	0	0	0	0
8:00 AM	0	0	0	0	0	20	80	0	0	0	19	35	0	0	0	0
8:15 AM	0	0	0	0	0	21	82	0	0	0	21	36	0	0	0	0
8:30 AM	0	0	0	0	0	20	79	0	0	0	20	37	0	0	0	0
8:45 AM	0	0	0	0	0	19	76	0	0	0	18	35	0	0	0	0

	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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	12	195	0	0	0	22	14	0	0	0	0
4:15 PM	0	0	0	0	0	13	186	0	0	0	24	15	0	0	0	0
4:30 PM	0	0	0	0	0	14	169	0	0	0	32	17	0	0	0	0
4:45 PM	0	0	0	0	0	12	147	0	0	0	39	19	0	0	0	0
5:00 PM	0	0	0	0	0	13	122	0	0	0	49	22	0	0	0	0
5:15 PM	0	0	0	0	0	12	120	0	0	0	58	24	0	0	0	0
5:30 PM	0	0	0	0	0	13	117	0	0	0	56	23	0	0	0	0
5:45 PM	0	0	0	0	0	11	114	0	0	0	54	22	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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**	**80**	**317**	**0**	**0**	**0**	**78**	**143**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.96**				**0.97**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**4.7%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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**	**51**	**697**	**0**	**0**	**0**	**117**	**65**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.90**				**0.78**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.0%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**1.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 10
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	3	0	0	0	0	1	0	0	0	0
4:45 PM	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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**	**2**	**15**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.71**				**0.50**				**0.00**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Purchase Street Northbound				Surface Road Southbound				High Street Eastbound				High 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**	**11**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.75**				**0.75**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 10
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Purchase Street Northbound					Surface Road Southbound					High Street Eastbound					High 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	75		0	8	0	30		0	0	0	22		0	0	0	4	
7:15 AM	0	0	0	84		1	7	0	32		0	1	0	25		0	0	0	6	
7:30 AM	0	0	0	92		0	9	0	35		0	0	1	24		0	0	0	8	
7:45 AM	0	0	0	105		2	11	0	38		0	1	0	30		0	0	0	9	
8:00 AM	0	0	0	120		1	9	0	36		0	1	1	42		0	0	0	7	
8:15 AM	0	0	0	115		2	11	0	33		0	0	0	48		0	0	0	8	
8:30 AM	0	0	0	118		0	12	0	32		0	1	0	55		0	0	0	10	
8:45 AM	0	0	0	110		1	7	0	34		0	0	1	52		0	0	0	8	

	Purchase Street Northbound					Surface Road Southbound					High Street Eastbound					High 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	80		1	14	0	22		0	1	0	62		0	0	0	10	
4:15 PM	0	0	0	82		0	13	0	24		0	1	1	65		0	0	0	13	
4:30 PM	0	0	0	86		1	12	0	25		0	2	0	64		0	0	0	12	
4:45 PM	0	0	0	92		1	11	0	28		0	0	1	70		0	0	0	15	
5:00 PM	0	0	0	102		0	13	1	30		0	1	1	78		0	0	0	12	
5:15 PM	0	0	0	105		1	12	0	32		0	0	1	85		0	0	0	14	
5:30 PM	0	0	0	114		0	11	0	35		0	1	0	82		0	0	0	15	
5:45 PM	0	0	0	108		0	11	0	34		0	1	1	86		0	0	0	11	

AM PEAK HOUR[1]	Purchase Street Northbound					Surface Road Southbound					High Street Eastbound					High 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	463		4	39	0	135		0	2	2	197		0	0	0	33	

PM PEAK HOUR[1]	Purchase Street Northbound					Surface Road Southbound					High Street Eastbound					High Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	340		3	50	0	99		0	4	2	261		0	0	0	50	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 11
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High 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	144	0	0	0	0	0	0	24	0	0	0	0	0	0
7:15 AM	0	0	150	0	0	0	0	0	0	26	0	0	0	0	0	0
7:30 AM	0	0	154	0	0	0	0	0	0	31	0	0	0	0	0	0
7:45 AM	0	0	168	0	0	0	0	0	0	35	0	0	0	0	0	0
8:00 AM	0	0	182	0	0	0	0	0	0	39	0	0	0	0	0	0
8:15 AM	0	0	193	0	0	0	0	0	0	42	0	0	0	0	0	0
8:30 AM	0	0	196	0	0	0	0	0	0	40	0	0	0	0	0	0
8:45 AM	0	0	191	0	0	0	0	0	0	37	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High 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	124	0	0	0	0	0	0	34	0	0	0	0	0	0
4:15 PM	0	0	108	0	0	0	0	0	0	37	0	0	0	0	0	0
4:30 PM	0	0	102	0	0	0	0	0	0	46	0	0	0	0	0	0
4:45 PM	0	0	117	0	0	0	0	0	0	51	0	0	0	0	0	0
5:00 PM	0	0	144	0	0	0	0	0	0	62	0	0	0	0	0	0
5:15 PM	0	0	145	0	0	0	0	0	0	70	0	0	0	0	0	0
5:30 PM	0	0	154	0	0	0	0	0	0	69	0	0	0	0	0	0
5:45 PM	0	0	155	0	0	0	0	0	0	65	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**762**	**0**	**0**	**0**	**0**	**0**	**0**	**158**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.97**				**0.00**				**0.94**				**0.00**			
HV %	**0.0%**	**0.0%**	**2.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**598**	**0**	**0**	**0**	**0**	**0**	**0**	**266**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.96**				**0.00**				**0.95**				**0.00**			
HV %	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 11
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High 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	4	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	5	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0
8:15 AM	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High 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	2	0	0	0	0	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	2	0	0	0	0	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	1	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	2	0	0	0	0	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.90**				**0.00**				**0.75**				**0.00**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				High Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.67**				**0.00**				**0.75**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 11
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	High Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					High Street Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	11	0	78		0	0	0	35		0	0	0	8		0	0	0	0	
7:15 AM	0	11	0	88		0	0	0	34		2	0	0	10		0	0	0	0	
7:30 AM	0	12	0	95		0	0	0	40		1	0	1	12		0	0	0	0	
7:45 AM	0	14	0	108		0	0	0	42		2	0	1	10		0	0	0	0	
8:00 AM	0	14	0	116		0	0	0	38		2	0	0	11		0	0	0	0	
8:15 AM	0	17	0	122		0	0	0	36		1	0	1	12		0	0	0	0	
8:30 AM	0	20	0	125		0	0	0	32		0	0	1	9		0	0	0	0	
8:45 AM	0	19	0	118		0	0	0	30		1	0	0	10		0	0	0	0	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					High Street Eastbound					Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	13	0	78		0	0	0	25		1	0	1	18		0	0	0	0	
4:15 PM	0	14	0	84		0	0	0	26		1	0	0	20		0	0	0	0	
4:30 PM	0	15	0	86		0	0	0	28		2	0	1	22		0	0	0	0	
4:45 PM	0	20	0	94		0	0	0	26		1	0	1	24		0	0	0	0	
5:00 PM	0	21	0	105		0	0	0	32		2	0	0	22		0	0	0	0	
5:15 PM	0	23	0	102		0	0	0	30		0	0	1	25		0	0	0	0	
5:30 PM	0	21	0	108		0	0	0	34		1	0	0	24		0	0	0	0	
5:45 PM	0	17	0	105		0	0	0	32		0	0	1	22		0	0	0	0	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					High Street 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	70	0	481		0	0	0	136		4	0	2	42		0	0	0	0	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					High Street 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	82	0	420		0	0	0	128		3	0	2	93		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 12
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Seaport Blvd/I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
7:00 AM	21	36	95	27	0	0	0	0	2	7	108	0	0	61	21	42
7:15 AM	22	42	97	28	0	0	0	0	2	9	111	0	0	72	23	44
7:30 AM	23	47	99	29	0	0	0	0	1	8	115	0	0	82	29	47
7:45 AM	25	53	112	30	0	0	0	0	2	7	119	0	0	88	34	49
8:00 AM	24	58	122	31	0	0	0	0	1	6	123	0	0	95	39	54
8:15 AM	23	56	129	31	0	0	0	0	2	7	120	0	0	94	43	57
8:30 AM	22	53	135	30	0	0	0	0	2	5	121	0	0	90	42	56
8:45 AM	21	52	133	29	0	0	0	0	1	4	118	0	0	85	41	54

	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
4:00 PM	22	58	86	36	0	0	0	0	1	1	85	0	0	55	41	37
4:15 PM	21	61	68	31	0	0	0	0	2	1	83	0	0	48	43	39
4:30 PM	19	60	59	25	0	0	0	0	2	2	81	0	0	42	47	41
4:45 PM	18	61	75	22	0	0	0	0	1	2	82	0	0	36	51	40
5:00 PM	16	59	101	18	0	0	0	0	2	1	78	0	0	31	56	42
5:15 PM	18	60	102	19	0	0	0	0	2	2	76	0	0	32	59	41
5:30 PM	17	57	113	17	0	0	0	0	1	1	77	0	0	30	58	40
5:45 PM	16	55	114	16	0	0	0	0	1	2	73	0	0	28	56	39

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
	90	**219**	**519**	**121**	**0**	**0**	**0**	**0**	**6**	**22**	**482**	**0**	**0**	**364**	**165**	**221**
PHF		**0.99**				**0.00**				**0.98**				**0.97**		
HV %	**1.1%**	**3.7%**	**3.9%**	**5.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
	67	**231**	**430**	**70**	**0**	**0**	**0**	**0**	**6**	**6**	**304**	**0**	**0**	**121**	**229**	**162**
PHF		**0.98**				**0.00**				**0.98**				**0.97**		
HV %	**1.5%**	**2.6%**	**1.6%**	**7.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 12
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Seaport Blvd/I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
7:00 AM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	1	4	0	0	0	0	0	0	0	0	0	0	1	0	0
7:45 AM	1	1	3	2	0	0	0	0	0	1	1	0	0	2	0	0
8:00 AM	0	2	5	1	0	0	0	0	0	0	2	0	0	1	0	0
8:15 AM	1	1	5	2	0	0	0	0	0	0	1	0	0	0	0	0
8:30 AM	0	3	6	1	0	0	0	0	0	0	2	0	0	1	0	0
8:45 AM	0	2	4	2	0	0	0	0	0	0	0	0	0	1	0	0

	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
Start Time	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
4:00 PM	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	2	1	0	0	0	0	0	0	0	0	0	1	0	0
4:45 PM	1	1	2	2	0	0	0	0	0	0	2	0	0	0	0	0
5:00 PM	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	2	2	2	0	0	0	0	0	0	1	0	0	2	0	0
5:30 PM	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	2	1	0	0	0	0	0	0	1	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
	2	**7**	**19**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**4**	**0**	**0**
PHF	**0.85**				**0.00**				**0.88**				**0.50**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Atlantic Avenue Northbound				Atlantic Avenue/I-93 Northbound On-Ramp Southbound				Seaport Boulevard Eastbound				Seaport Boulevard Westbound			
	Left	Thru (I-93)	Thru	Right	U-Turn	Left	Thru	Right	Left (I-93)	Left	Thru	Right	Left	Thru	Right (I-93)	Right
	1	**6**	**8**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**	**0**	**0**
PHF	**0.88**				**0.00**				**0.38**				**0.38**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 12
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Seaport Blvd/I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue/I-93 Northbound On-Ramp 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	10	0	55		0	0	0	52		0	3	0	0		0	3	1	165	
7:15 AM	0	11	1	58		0	0	0	56		0	4	0	1		0	5	0	178	
7:30 AM	0	11	1	62		0	0	0	60		0	3	0	0		0	3	1	192	
7:45 AM	1	12	2	68		0	0	0	65		0	4	0	1		0	4	2	204	
8:00 AM	0	13	3	75		0	0	0	62		1	5	0	2		0	4	0	190	
8:15 AM	1	16	2	86		0	0	0	58		0	3	0	4		0	3	1	184	
8:30 AM	1	18	3	90		0	0	0	54		0	4	0	1		0	4	2	186	
8:45 AM	0	17	2	88		0	0	0	58		1	5	0	2		0	3	1	178	

	Atlantic Avenue Northbound					Atlantic Avenue/I-93 Northbound On-Ramp 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	11	1	75		0	0	0	62		0	7	0	5		0	6	2	172	
4:15 PM	0	12	1	80		0	0	0	65		1	5	0	6		0	7	1	184	
4:30 PM	1	15	2	84		0	0	0	72		0	4	0	4		0	6	0	190	
4:45 PM	0	19	2	92		0	0	0	80		0	5	0	7		0	7	1	205	
5:00 PM	1	20	1	108		0	0	0	85		1	6	0	10		0	5	0	218	
5:15 PM	2	21	3	120		0	0	0	88		0	4	0	12		0	4	2	226	
5:30 PM	1	19	1	126		0	0	0	94		1	5	0	18		0	5	1	232	
5:45 PM	1	16	2	122		0	0	0	90		0	4	0	15		0	4	1	228	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue/I-93 Northbound On-Ramp 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	64	10	339		0	0	0	232		2	17	0	9		0	14	4	738	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue/I-93 Northbound On-Ramp 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	5	76	7	476		0	0	0	357		2	19	0	55		0	18	4	904	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 13
Location:	Boston, MA
Street 1:	Purchase Street/ I-93 SB Off-Ramp
Street 2:	Oliver Street/ Seaport Boulevard
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
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TOTAL (CARS & TRUCKS)

	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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	75	14	0	117	87	29	0	43	39	0
7:15 AM	0	0	0	0	0	0	73	16	0	122	89	28	0	52	41	0
7:30 AM	0	0	0	0	0	0	71	18	0	124	88	26	0	59	43	0
7:45 AM	0	0	0	0	0	0	80	20	0	128	92	25	0	66	46	0
8:00 AM	0	0	0	0	0	0	92	23	0	130	89	24	0	71	48	0
8:15 AM	0	0	0	0	0	0	93	25	0	129	90	25	0	70	47	0
8:30 AM	0	0	0	0	0	0	92	24	0	127	87	23	0	67	45	0
8:45 AM	0	0	0	0	0	0	88	23	0	123	85	22	0	63	43	0

	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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	182	27	0	87	29	12	0	39	38	0
4:15 PM	0	0	0	0	0	0	172	29	0	86	32	12	0	35	34	0
4:30 PM	0	0	0	0	0	0	158	28	0	85	34	11	0	31	30	0
4:45 PM	0	0	0	0	0	0	139	27	0	84	37	12	0	27	27	0
5:00 PM	0	0	0	0	0	0	118	26	0	81	39	10	0	23	24	0
5:15 PM	0	0	0	0	0	0	119	25	0	80	37	11	0	24	26	0
5:30 PM	0	0	0	0	0	0	113	27	0	78	35	10	0	22	25	0
5:45 PM	0	0	0	0	0	0	110	26	0	76	33	11	0	21	23	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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**	**357**	**92**	**0**	**514**	**358**	**97**	**0**	**274**	**186**	**0**
PHF	**0.00**				**0.95**				**0.99**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.2%**	**1.1%**	**0.0%**	**1.4%**	**1.1%**	**1.0%**	**0.0%**	**0.7%**	**2.2%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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**	**651**	**111**	**0**	**342**	**132**	**47**	**0**	**132**	**129**	**0**
PHF	**0.00**				**0.91**				**0.98**				**0.85**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**0.9%**	**0.0%**	**0.9%**	**3.8%**	**0.0%**	**0.0%**	**0.8%**	**1.6%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 13
Location:	Boston, MA
Street 1:	Purchase Street/ I-93 SB Off-Ramp
Street 2:	Oliver Street/ Seaport Boulevard
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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	2	0	0	0	1	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	1	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	4	0	0	0	1	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	5	0	0	2	2	0	0	1	2	0
8:00 AM	0	0	0	0	0	0	4	1	0	2	1	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	3	0	0	1	1	1	0	0	1	0
8:30 AM	0	0	0	0	0	0	3	0	0	2	0	0	0	1	0	0
8:45 AM	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1	0

	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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	3	0	0	1	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	3	0	0	0	1	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	3	1	0	2	2	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	3	0	0	1	2	0	0	1	1	0
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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**	**16**	**1**	**0**	**5**	**5**	**1**	**0**	**1**	**5**	**0**
PHF	**0.00**				**0.85**				**0.69**				**0.50**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Purchase Street Northbound				Purchase Street Southbound				I-93 Southbound Off-Ramp Southbound				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**	**11**	**1**	**0**	**3**	**6**	**0**	**0**	**2**	**2**	**0**
PHF	**0.00**				**0.75**				**0.56**				**0.50**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 13
Location:	Boston, MA
Street 1:	Purchase Street/ I-93 SB Off-Ramp
Street 2:	Oliver Street/ Seaport Boulevard
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Purchase Street Northbound					Purchase Street Southbound					Oliver Street 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	45		0	8	0	28		0	0	0	65		0	2	0	0	
7:15 AM	0	0	0	48		0	7	0	32		0	0	0	72		1	4	0	0	
7:30 AM	0	0	0	52		0	9	1	34		0	1	0	80		0	3	0	0	
7:45 AM	0	0	0	78		1	10	0	42		0	0	0	114		1	3	0	0	
8:00 AM	0	0	0	96		0	8	0	53		0	0	1	148		2	2	0	0	
8:15 AM	0	0	0	124		1	11	0	58		0	0	0	184		0	3	0	0	
8:30 AM	0	0	0	135		2	9	1	60		0	0	0	212		1	4	0	0	
8:45 AM	0	0	0	130		0	8	0	55		0	0	0	204		1	2	0	0	

	Purchase Street Northbound					Purchase Street Southbound					Oliver Street 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	75		0	11	0	70		0	0	0	108		1	5	0	0	
4:15 PM	0	0	0	80		1	10	0	78		0	0	0	116		0	7	0	0	
4:30 PM	0	0	0	82		0	9	1	75		0	0	1	125		2	6	0	0	
4:45 PM	0	0	0	85		1	11	0	80		0	1	0	122		1	5	0	0	
5:00 PM	0	0	0	90		0	12	1	76		0	0	0	116		0	6	0	0	
5:15 PM	0	0	0	98		0	11	1	74		0	0	1	120		1	5	0	0	
5:30 PM	0	0	0	105		1	10	0	72		0	0	0	118		1	4	0	0	
5:45 PM	0	0	0	96		0	9	0	75		0	0	0	112		0	5	0	0	

AM PEAK HOUR[1]	Purchase Street Northbound					Purchase Street Southbound					Oliver Street Eastbound					Seaport Boulevard Westbound				
7:45 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:45 AM	0	0	0	433		4	38	1	213		0	0	1	658		4	12	0	0	

PM PEAK HOUR[1]	Purchase Street Northbound					Purchase Street Southbound					Oliver Street Eastbound					Seaport Boulevard Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	322		2	41	1	303		0	1	1	471		4	23	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 14
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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	188	17	0	0	0	0	0	12	58	0
7:15 AM	0	0	0	0	0	0	194	20	0	0	0	0	0	14	59	0
7:30 AM	0	0	0	0	0	0	197	21	0	0	0	0	0	13	62	0
7:45 AM	0	0	0	0	0	0	216	22	0	0	0	0	0	14	63	0
8:00 AM	0	0	0	0	0	0	229	23	0	0	0	0	0	16	64	0
8:15 AM	0	0	0	0	0	0	228	24	0	0	0	0	0	15	78	0
8:30 AM	0	0	0	0	0	0	221	25	0	0	0	0	0	14	91	0
8:45 AM	0	0	0	0	0	0	213	23	0	0	0	0	0	13	85	0

	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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	232	18	0	0	0	0	0	13	42	0
4:15 PM	0	0	0	0	0	0	219	20	0	0	0	0	0	14	35	0
4:30 PM	0	0	0	0	0	0	204	19	0	0	0	0	0	13	31	0
4:45 PM	0	0	0	0	0	0	186	17	0	0	0	0	0	12	32	0
5:00 PM	0	0	0	0	0	0	164	16	0	0	0	0	0	11	31	0
5:15 PM	0	0	0	0	0	0	165	15	0	0	0	0	0	10	36	0
5:30 PM	0	0	0	0	0	0	156	14	0	0	0	0	0	11	39	0
5:45 PM	0	0	0	0	0	0	151	13	0	0	0	0	0	9	37	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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**	**891**	**95**	**0**	**0**	**0**	**0**	**0**	**58**	**318**	**0**
PHF	**0.00**				**0.98**				**0.00**				**0.90**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.8%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**0.3%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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**	**841**	**74**	**0**	**0**	**0**	**0**	**0**	**52**	**140**	**0**
PHF	**0.00**				**0.92**				**0.00**				**0.87**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.8%**	**2.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**1.4%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 14
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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	3	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	0	6	1	0	0	0	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0

	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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	3	1	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	1	1	0
5:15 PM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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**	**20**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**
PHF	**0.00**				**0.79**				**0.00**				**0.63**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Purchase Street Northbound				Purchase Street Southbound				Pearl Street Eastbound				Pearl 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**	**16**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**
PHF	**0.00**				**0.75**				**0.00**				**0.50**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 14
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Purchase Street Northbound					Purchase Street Southbound					Pearl Street Eastbound					Pearl 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	38		0	6	0	42		0	0	0	50		0	4	0	35	
7:15 AM	0	0	0	42		0	5	0	48		0	0	0	54		1	1	0	38	
7:30 AM	0	0	0	70		0	8	1	56		0	0	0	78		0	2	0	46	
7:45 AM	0	0	0	92		0	10	0	68		0	0	0	105		1	3	0	58	
8:00 AM	0	0	0	105		0	8	2	75		0	0	0	122		1	3	0	62	
8:15 AM	0	0	0	114		0	11	0	86		0	0	0	130		0	3	0	75	
8:30 AM	0	0	0	125		0	8	1	90		0	0	0	136		1	3	0	80	
8:45 AM	0	0	0	120		0	9	0	88		0	0	0	132		0	2	0	78	

	Purchase Street Northbound					Purchase Street Southbound					Pearl Street Eastbound					Pearl 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	62		0	7	0	28		0	0	0	35		1	0	0	34	
4:15 PM	0	0	0	65		0	10	1	30		0	0	0	38		0	2	0	36	
4:30 PM	0	0	0	78		0	9	0	48		0	0	0	52		1	1	0	35	
4:45 PM	0	0	0	87		0	11	0	62		0	0	0	64		0	1	0	38	
5:00 PM	0	0	0	94		0	10	1	80		0	0	0	78		0	2	0	42	
5:15 PM	0	0	0	108		0	11	0	92		0	0	0	88		1	0	0	40	
5:30 PM	0	0	0	112		0	9	1	98		0	0	0	92		0	3	0	44	
5:45 PM	0	0	0	118		0	8	0	104		0	0	0	96		0	1	0	46	

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Purchase Street Northbound					Purchase Street Southbound					Pearl Street Eastbound					Pearl Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	464		0	36	3	339		0	0	0	520		2	11	0	295	

PM PEAK HOUR[1] 4:00 PM to 5:00 PM	Purchase Street Northbound					Purchase Street Southbound					Pearl Street Eastbound					Pearl Street Westbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	292		0	37	1	168		0	0	0	189		2	4	0	143	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 15
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension 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	70	176	1	0	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	73	189	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	74	198	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	77	219	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	78	235	1	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	92	238	0	0	0	0	0	0	0	0	0	0	0	1	1
8:30 AM	0	105	240	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	98	235	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension 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	53	203	0	0	0	0	0	0	0	0	0	0	0	2	1
4:15 PM	0	49	181	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	44	158	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	43	176	1	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	42	194	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	45	199	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	49	204	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	46	201	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**373**	**948**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**
PHF	**0.96**				**0.00**				**0.00**				**0.38**			
HV %	**0.0%**	**0.5%**	**3.7%**	**0.0%**	**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 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**182**	**798**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**
PHF	**0.97**				**0.00**				**0.00**				**0.75**			
HV %	**0.0%**	**1.6%**	**2.4%**	**0.0%**	**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:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 15
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension 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	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**34**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.93**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Pearl Street Eastbound				Pearl Street Extension Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**4**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.89**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 15
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Pearl Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Pearl Street Eastbound					Pearl Street Extension Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	4	10	0	17		0	0	0	31		0	0	0	16		0	0	0	22	
7:15 AM	2	12	0	22		0	0	0	35		0	0	0	34		0	0	0	32	
7:30 AM	2	11	0	25		0	0	0	48		0	0	0	42		0	0	0	40	
7:45 AM	3	14	0	28		0	0	0	58		0	0	0	53		0	1	0	54	
8:00 AM	4	16	0	31		0	0	0	55		0	0	0	58		0	0	0	58	
8:15 AM	3	19	0	35		0	0	0	60		0	0	0	65		0	0	0	65	
8:30 AM	4	22	0	32		0	0	0	54		0	0	0	67		0	0	0	70	
8:45 AM	2	20	0	34		0	0	0	56		0	0	0	64		0	0	0	68	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Pearl Street Eastbound					Pearl Street Extension Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	1	11	0	15		0	0	0	38		0	0	0	28		0	0	0	54	
4:15 PM	2	13	0	16		0	0	0	42		0	0	0	32		0	0	0	58	
4:30 PM	2	17	0	22		0	0	0	51		0	0	0	45		0	0	0	76	
4:45 PM	1	20	0	29		0	0	0	64		0	0	0	56		0	0	1	82	
5:00 PM	2	22	0	32		0	0	0	72		0	0	0	69		0	0	0	90	
5:15 PM	1	26	0	34		0	1	0	83		0	0	0	78		0	0	0	102	
5:30 PM	3	21	0	30		0	0	0	78		0	0	0	83		0	0	0	96	
5:45 PM	1	18	0	33		0	0	0	76		0	0	0	80		0	0	0	95	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Pearl Street Eastbound					Pearl Street Extension Westbound				
8:00 AM to 9:00 AM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	13	77	0	132		0	0	0	225		0	0	0	254		0	0	0	261	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Pearl Street Eastbound					Pearl Street Extension Westbound				
5:00 PM to 6:00 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	7	87	0	129		0	1	0	309		0	0	0	310		0	0	0	383	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 16
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Congress Street/ I-93 SB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	91	69	40	0	0	109	43	31	0	0	0	0
7:15 AM	0	0	0	0	95	72	41	0	0	113	47	37	0	0	0	0
7:30 AM	0	0	0	0	99	73	38	0	0	111	51	42	0	0	0	0
7:45 AM	0	0	0	0	104	78	48	0	0	126	55	38	0	0	0	0
8:00 AM	0	0	0	0	107	82	56	0	0	138	58	33	0	0	0	0
8:15 AM	0	0	0	0	106	83	54	0	0	137	57	35	0	0	0	0
8:30 AM	0	0	0	0	102	81	52	0	0	133	56	33	0	0	0	0
8:45 AM	0	0	0	0	98	78	50	0	0	128	53	34	0	0	0	0

	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	89	89	67	0	0	156	82	70	0	0	0	0
4:15 PM	0	0	0	0	84	84	65	0	0	149	83	72	0	0	0	0
4:30 PM	0	0	0	0	78	78	61	0	0	139	85	69	0	0	0	0
4:45 PM	0	0	0	0	73	75	50	0	0	125	88	65	0	0	0	0
5:00 PM	0	0	0	0	67	72	36	0	0	108	87	64	0	0	0	0
5:15 PM	0	0	0	0	69	68	38	0	0	106	89	61	0	0	0	0
5:30 PM	0	0	0	0	65	62	40	0	0	102	85	63	0	0	0	0
5:45 PM	0	0	0	0	63	58	39	0	0	97	81	62	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**419**	**324**	**210**	**0**	**0**	**534**	**226**	**139**	**0**	**0**	**0**	**0**
PHF		**0.00**				**0.97**				**0.98**				**0.00**		
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**2.8%**	**2.4%**	**0.0%**	**0.0%**	**1.9%**	**0.4%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**324**	**326**	**243**	**0**	**0**	**569**	**338**	**276**	**0**	**0**	**0**	**0**
PHF		**0.00**				**0.91**				**0.96**				**0.00**		
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**2.5%**	**1.2%**	**0.0%**	**0.0%**	**1.1%**	**0.6%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 16
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Congress Street/ I-93 SB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	2	1	0	0	2	0	0	0	0	0	0
7:30 AM	0	0	0	0	2	3	2	0	0	3	1	0	0	0	0	0
7:45 AM	0	0	0	0	1	2	2	0	0	3	1	1	0	0	0	0
8:00 AM	0	0	0	0	2	2	1	0	0	1	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	2	2	0	0	4	0	1	0	0	0	0
8:30 AM	0	0	0	0	1	3	0	0	0	2	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	2	1	0	0	2	1	0	0	0	0	0

	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
Start Time	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0
4:15 PM	0	0	0	0	1	1	1	0	0	1	0	1	0	0	0	0
4:30 PM	0	0	0	0	2	3	0	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	3	1	0	0	3	1	0	0	0	0	0
5:00 PM	0	0	0	0	1	2	1	0	0	2	1	1	0	0	0	0
5:15 PM	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	0	0
5:45 PM	0	0	0	0	1	2	0	0	0	1	1	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**5**	**9**	**7**	**0**	**0**	**11**	**2**	**2**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.75**				**0.75**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Purchase Street Northbound				Purchase Street Southbound				Congress Street Eastbound				Congress Street Westbound			
	U-Turn	Left	Thru	Right	Left	Thru (I-93)	Thru	Right	Left	Thru	Right (I-93)	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**5**	**9**	**3**	**0**	**0**	**7**	**2**	**2**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.85**				**0.69**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 16
Location:	Boston, MA
Street 1:	Purchase Street
Street 2:	Congress Street/ I-93 SB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Purchase Street Northbound					Purchase 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	40		0	6	0	68		0	5	1	52		0	0	0	35	
7:15 AM	0	0	0	42		0	8	0	75		0	7	2	56		0	0	0	38	
7:30 AM	0	0	0	65		1	7	0	98		0	6	2	68		0	0	0	52	
7:45 AM	0	0	0	90		2	9	0	135		0	5	3	80		0	0	0	65	
8:00 AM	0	0	0	102		0	8	0	170		0	6	2	92		0	0	0	72	
8:15 AM	0	0	0	114		1	10	0	182		0	6	3	95		0	0	0	78	
8:30 AM	0	0	0	120		0	8	0	195		0	7	4	102		0	0	0	84	
8:45 AM	0	0	0	115		1	9	0	186		0	5	3	98		0	0	0	80	

	Purchase Street Northbound					Purchase 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	68		1	6	0	75		0	4	2	54		0	0	0	26	
4:15 PM	0	0	0	72		2	8	0	78		0	5	3	58		0	0	0	30	
4:30 PM	0	0	0	95		0	10	0	108		0	5	2	82		0	0	0	32	
4:45 PM	0	0	0	126		1	9	0	146		0	5	4	125		0	0	0	28	
5:00 PM	0	0	0	140		1	10	0	182		0	5	3	146		0	0	0	30	
5:15 PM	0	0	0	154		2	11	0	205		0	5	4	162		0	0	0	34	
5:30 PM	0	0	0	165		1	9	0	212		0	7	3	170		0	0	0	36	
5:45 PM	0	0	0	158		0	8	0	210		0	5	3	165		0	0	0	35	

AM PEAK HOUR[1]	Purchase Street Northbound					Purchase Street Southbound					Congress Street Eastbound					Congress Street Westbound				
7:45 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:45 AM	0	0	0	426		3	35	0	682		0	24	12	369		0	0	0	299	

PM PEAK HOUR[1]	Purchase Street Northbound					Purchase Street Southbound					Congress Street Eastbound					Congress Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	361		4	33	0	407		0	19	11	319		0	0	0	116	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 17
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Congress Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue 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	113	37	0	0	0	0	0	60	112	0	0	0	0	74
7:15 AM	0	0	124	39	0	0	0	0	0	62	115	0	0	0	0	76
7:30 AM	0	0	128	38	0	0	0	0	0	65	121	0	0	0	0	80
7:45 AM	0	0	147	36	0	0	0	0	0	66	124	0	0	0	0	83
8:00 AM	0	0	149	35	0	0	0	0	0	68	130	0	0	0	0	97
8:15 AM	0	0	152	34	0	0	0	0	0	69	133	0	0	0	0	109
8:30 AM	0	0	167	37	0	0	0	0	0	71	132	0	0	0	0	107
8:45 AM	0	0	164	35	0	0	0	0	0	67	129	0	0	0	0	102

	Atlantic Avenue Northbound				Atlantic Avenue 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	135	15	0	0	0	0	0	43	114	0	0	0	0	78
4:15 PM	0	0	106	14	0	0	0	0	0	45	118	0	0	0	0	80
4:30 PM	0	0	87	16	0	0	0	0	0	44	119	0	0	0	0	73
4:45 PM	0	0	93	15	0	0	0	0	0	48	121	0	0	0	0	79
5:00 PM	0	0	108	14	0	0	0	0	0	51	123	0	0	0	0	78
5:15 PM	0	0	116	13	0	0	0	0	0	52	122	0	0	0	0	76
5:30 PM	0	0	123	14	0	0	0	0	0	53	120	0	0	0	0	77
5:45 PM	0	0	122	12	0	0	0	0	0	50	117	0	0	0	0	75

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue 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**	**632**	**141**	**0**	**0**	**0**	**0**	**0**	**275**	**524**	**0**	**0**	**0**	**0**	**415**
PHF	**0.95**				**0.00**				**0.98**				**0.95**			
HV %	**0.0%**	**0.0%**	**4.7%**	**3.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue 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**	**469**	**53**	**0**	**0**	**0**	**0**	**0**	**206**	**482**	**0**	**0**	**0**	**0**	**306**
PHF	**0.95**				**0.00**				**0.99**				**0.98**			
HV %	**0.0%**	**0.0%**	**3.4%**	**5.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**1.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 17
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Congress Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue 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	4	1	0	0	0	0	0	0	2	0	0	0	0	0
7:15 AM	0	0	6	0	0	0	0	0	0	1	2	0	0	0	0	0
7:30 AM	0	0	5	2	0	0	0	0	0	1	3	0	0	0	0	1
7:45 AM	0	0	6	1	0	0	0	0	0	2	4	0	0	0	0	1
8:00 AM	0	0	7	2	0	0	0	0	0	1	3	0	0	0	0	0
8:15 AM	0	0	8	1	0	0	0	0	0	0	2	0	0	0	0	1
8:30 AM	0	0	7	2	0	0	0	0	0	2	4	0	0	0	0	2
8:45 AM	0	0	8	0	0	0	0	0	0	1	2	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue 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	2	0	0	0	0	0	0	1	2	0	0	0	0	1
4:15 PM	0	0	5	2	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	4	1	0	0	0	0	0	1	2	0	0	0	0	1
4:45 PM	0	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0
5:00 PM	0	0	6	1	0	0	0	0	0	1	2	0	0	0	0	0
5:15 PM	0	0	4	1	0	0	0	0	0	2	2	0	0	0	0	1
5:30 PM	0	0	3	0	0	0	0	0	0	1	1	0	0	0	0	1
5:45 PM	0	0	3	1	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Atlantic Avenue 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**	**28**	**6**	**0**	**0**	**0**	**0**	**0**	**5**	**13**	**0**	**0**	**0**	**0**	**4**
PHF	**0.94**				**0.00**				**0.75**				**0.50**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Atlantic Avenue Northbound				Atlantic Avenue 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**	**19**	**3**	**0**	**0**	**0**	**0**	**0**	**4**	**9**	**0**	**0**	**0**	**0**	**2**
PHF	**0.79**				**0.00**				**0.81**				**0.50**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 17
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Congress Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue 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	10	1	23		0	0	0	56		1	4	0	34		0	0	3	102	
7:15 AM	0	11	2	30		0	0	0	72		2	5	0	52		0	0	1	135	
7:30 AM	0	10	1	34		0	0	0	84		1	6	0	70		0	0	2	163	
7:45 AM	0	17	3	62		0	0	0	102		0	7	0	78		0	0	0	182	
8:00 AM	0	18	2	78		0	0	0	120		1	5	0	86		0	0	1	226	
8:15 AM	0	21	3	107		0	0	0	138		1	6	0	94		0	0	0	254	
8:30 AM	0	22	2	112		0	0	0	158		2	5	0	107		0	0	2	285	
8:45 AM	0	21	1	108		0	0	0	152		0	6	0	102		0	0	1	270	

	Atlantic Avenue Northbound					Atlantic Avenue 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	9	1	54		0	0	0	75		1	4	0	80		0	0	2	196	
4:15 PM	0	12	0	58		0	0	0	80		1	6	0	92		0	0	2	208	
4:30 PM	0	16	1	62		0	0	0	84		0	5	0	105		0	0	3	224	
4:45 PM	0	17	0	80		0	0	0	102		2	4	0	124		0	0	2	230	
5:00 PM	0	20	2	128		0	0	0	125		1	5	0	146		0	0	3	242	
5:15 PM	0	24	0	164		0	0	0	143		1	6	0	164		0	0	2	252	
5:30 PM	0	17	1	182		0	0	0	165		3	5	0	180		0	0	4	258	
5:45 PM	0	15	0	178		0	0	0	160		1	4	0	176		0	0	3	255	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue 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	
	0	82	8	405		0	0	0	568		4	22	0	389		0	0	4	1035	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue 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	76	3	652		0	0	0	593		6	20	0	666		0	0	12	1007	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 18
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Summer Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic 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	42	105	71	0	0	0	0	0	9	91	0	0	0	79	36
7:15 AM	0	44	114	73	0	0	0	0	0	10	87	0	0	0	82	39
7:30 AM	0	45	117	74	0	0	0	0	0	11	82	0	0	0	74	38
7:45 AM	0	47	137	75	0	0	0	0	0	9	76	0	0	0	64	37
8:00 AM	0	48	138	76	0	0	0	0	0	10	69	0	0	0	55	36
8:15 AM	0	49	141	74	0	0	0	0	0	11	70	0	1	0	45	34
8:30 AM	0	47	162	75	0	0	0	0	0	9	67	0	0	0	44	33
8:45 AM	0	45	157	73	0	0	0	0	0	10	65	0	0	0	43	32

	Atlantic Avenue Northbound				Atlantic 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	28	105	44	0	0	0	0	0	11	68	0	0	0	61	34
4:15 PM	0	27	74	46	0	0	0	0	0	10	67	0	0	0	64	36
4:30 PM	0	25	56	48	0	0	0	0	1	9	64	0	1	0	66	38
4:45 PM	0	24	61	51	0	0	0	0	0	10	63	0	0	0	67	37
5:00 PM	0	22	78	53	0	0	0	0	0	8	61	0	0	0	69	36
5:15 PM	0	24	85	52	0	0	0	0	0	9	62	0	0	0	70	35
5:30 PM	0	23	93	51	0	0	0	0	0	8	59	0	0	0	67	36
5:45 PM	0	21	91	49	0	0	0	0	0	9	56	0	0	0	68	34

AM PEAK HOUR 7:00 AM to 8:00 AM	Atlantic Avenue Northbound				Atlantic 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	**178**	**473**	**293**	**0**	**0**	**0**	**0**	**0**	**39**	**336**	**0**	**0**	**0**	**299**	**150**
PHF	**0.91**				**0.00**				**0.94**				**0.93**			
HV %	**0.0%**	**1.7%**	**4.2%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**7.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**2.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic 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	**90**	**347**	**205**	**0**	**0**	**0**	**0**	**0**	**34**	**238**	**0**	**0**	**0**	**274**	**141**
PHF	**0.96**				**0.00**				**0.96**				**0.99**			
HV %	**0.0%**	**1.1%**	**4.9%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.9%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.4%**	**0.7%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 18
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Summer Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Atlantic Avenue Northbound				Atlantic 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	5	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	6	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	5	1	0	0	0	0	0	0	1	0	0	0	0	2
7:45 AM	0	2	4	1	0	0	0	0	0	2	0	0	0	0	1	0
8:00 AM	0	1	6	2	0	0	0	0	0	1	0	0	0	0	0	1
8:15 AM	0	0	9	0	0	0	0	0	0	0	1	0	0	0	0	0
8:30 AM	0	1	8	1	0	0	0	0	0	1	0	0	0	0	1	0
8:45 AM	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	1

	Atlantic Avenue Northbound				Atlantic 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	2	1	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	1	5	0	0	0	0	0	0	1	0	0	0	0	1	0
4:30 PM	0	0	4	1	0	0	0	0	0	0	1	0	0	0	0	2
4:45 PM	0	1	3	1	0	0	0	0	0	0	0	0	0	0	1	1
5:00 PM	0	0	7	0	0	0	0	0	0	1	1	0	0	0	0	0
5:15 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	2	1	0	0	0	0	0	0	1	0	0	0	1	0
5:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Atlantic 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	**4**	**27**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**2**	**1**
PHF	**0.88**				**0.00**				**0.63**				**0.75**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Atlantic Avenue Northbound				Atlantic 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	**2**	**19**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**2**	**3**
PHF	**0.82**				**0.00**				**0.50**				**0.63**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 18
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Summer Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic 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	12	0	256		0	0	0	68		0	2	0	158		0	6	1	92	
7:15 AM	0	13	1	368		0	0	0	105		0	3	0	188		0	8	2	140	
7:30 AM	0	12	0	475		0	0	0	164		0	5	0	225		0	10	3	165	
7:45 AM	0	19	1	542		0	0	0	225		0	3	0	248		0	7	2	206	
8:00 AM	0	20	2	560		0	0	0	248		0	4	0	262		0	8	2	228	
8:15 AM	0	25	0	538		0	0	0	275		0	3	0	280		0	9	1	255	
8:30 AM	0	23	1	494		0	0	0	260		0	2	0	268		0	6	3	262	
8:45 AM	0	22	0	436		0	0	0	254		0	3	0	255		0	7	1	242	

	Atlantic Avenue Northbound					Atlantic 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	11	0	585		0	0	0	120		0	3	0	448		0	4	2	225	
4:15 PM	0	12	1	622		0	0	0	128		0	2	0	455		0	5	3	248	
4:30 PM	0	18	2	705		0	0	0	142		0	4	0	472		0	7	2	285	
4:45 PM	0	17	1	792		0	0	0	165		0	2	0	505		0	8	2	320	
5:00 PM	0	21	1	886		0	0	0	172		0	3	0	586		0	6	3	368	
5:15 PM	0	24	2	926		0	0	0	180		0	3	0	628		0	7	2	420	
5:30 PM	0	17	0	945		0	0	0	186		0	2	0	642		0	9	1	445	
5:45 PM	0	16	1	930		0	0	0	182		0	2	0	630		0	8	2	438	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Summer Street Eastbound					Summer Street Westbound				
7:00 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:00 AM	0	56	2	1641		0	0	0	562		0	13	0	819		0	31	8	603	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue 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	0	78	4	3687		0	0	0	720		0	10	0	2486		0	30	8	1671	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 19
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road 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	0	213	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	216	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	221	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	236	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	256	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	260	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	256	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	250	0	0	0	0	0	0	0	0	0

	Surface Road Northbound				Surface Road 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	0	233	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	234	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	229	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	197	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	200	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	197	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	192	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				Eastbound				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**	**1022**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.98**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Eastbound				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**	**904**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.97**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 19
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Surface Road Northbound				Surface Road 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	0	3	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0

	Surface Road Northbound				Surface Road 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	0	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Surface Road Northbound				Surface Road Southbound				Eastbound				Westbound			
7:45 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.92**				**0.00**				**0.00**			

PM PEAK HOUR	Surface Road Northbound				Surface Road Southbound				Eastbound				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**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.92**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 19
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road 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	7	0	56		0	0	0	0		0	0	0	0	
7:15 AM	0	0	0	0		0	9	0	68		0	0	0	0		0	0	0	0	
7:30 AM	0	0	0	0		0	10	0	72		0	0	0	0		0	0	0	0	
7:45 AM	0	0	0	0		0	11	0	78		0	0	0	0		0	0	0	0	
8:00 AM	0	0	0	0		0	10	0	85		0	0	0	0		0	0	0	0	
8:15 AM	0	0	0	0		0	13	0	88		0	0	0	0		0	0	0	0	
8:30 AM	0	0	0	0		0	12	0	90		0	0	0	0		0	0	0	0	
8:45 AM	0	0	0	0		0	11	0	86		0	0	0	0		0	0	0	0	

	Surface Road Northbound					Surface Road 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	14	0	265		0	0	0	0		0	0	0	0	
4:15 PM	0	0	0	0		0	15	0	272		0	0	0	0		0	0	0	0	
4:30 PM	0	0	0	0		0	14	0	285		0	0	0	0		0	0	0	0	
4:45 PM	0	0	0	0		0	12	0	306		0	0	0	0		0	0	0	0	
5:00 PM	0	0	0	0		0	14	0	328		0	0	0	0		0	0	0	0	
5:15 PM	0	0	0	0		0	13	0	340		0	0	0	0		0	0	0	0	
5:30 PM	0	0	0	0		0	12	0	355		0	0	0	0		0	0	0	0	
5:45 PM	0	0	0	0		0	11	0	364		0	0	0	0		0	0	0	0	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Eastbound					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	0		0	46	0	349		0	0	0	0		0	0	0	0	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Eastbound					Westbound				
4:00 PM to 5:00 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	55	0	1128		0	0	0	0		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 20
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue 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	107	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	110	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	118	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	129	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	159	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue 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	148	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	149	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	156	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	219	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	238	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	240	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	237	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**615**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.97**				**0.00**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**2.8%**	**0.0%**	**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 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**934**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.97**				**0.00**				**0.00**				**0.00**			
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:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 20
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	4	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	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Westbound			
7:45 AM to 8:45 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.90**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				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**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 20
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Christopher Columbus Park Path
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue 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	10	0	54		0	0	0	0		0	0	0	0		0	0	0	0	
7:15 AM	0	11	0	62		0	0	0	0		0	0	0	0		0	0	0	0	
7:30 AM	0	14	0	65		0	0	0	0		0	0	0	0		0	0	0	0	
7:45 AM	0	16	0	80		0	0	0	0		0	0	0	0		0	0	0	0	
8:00 AM	0	15	0	95		0	0	0	0		0	0	0	0		0	0	0	0	
8:15 AM	0	17	0	92		0	0	0	0		0	0	0	0		0	0	0	0	
8:30 AM	0	15	0	88		0	0	0	0		0	0	0	0		0	0	0	0	
8:45 AM	0	16	0	90		0	0	0	0		0	0	0	0		0	0	0	0	

	Atlantic Avenue Northbound					Atlantic Avenue 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	12	0	260		0	0	0	0		0	0	0	0		0	0	0	0	
4:15 PM	0	16	0	256		0	0	0	0		0	0	0	0		0	0	0	0	
4:30 PM	0	20	0	278		0	0	0	0		0	0	0	0		0	0	0	0	
4:45 PM	0	18	0	296		0	0	0	0		0	0	0	0		0	0	0	0	
5:00 PM	0	21	0	318		0	0	0	0		0	0	0	0		0	0	0	0	
5:15 PM	0	19	0	335		0	0	0	0		0	0	0	0		0	0	0	0	
5:30 PM	0	20	0	348		0	0	0	0		0	0	0	0		0	0	0	0	
5:45 PM	0	19	0	355		0	0	0	0		0	0	0	0		0	0	0	0	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					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	63	0	365		0	0	0	0		0	0	0	0		0	0	0	0	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					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	79	0	1356		0	0	0	0		0	0	0	0		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 21
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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	29	186	0	0	0	0	0	0	27	0	0
7:15 AM	0	0	0	0	0	31	187	0	0	0	0	0	0	29	0	0
7:30 AM	0	0	0	0	0	33	189	0	0	0	0	0	0	32	0	0
7:45 AM	0	0	0	0	0	32	201	0	0	0	0	0	0	35	0	0
8:00 AM	0	0	0	0	0	34	218	0	0	0	0	0	0	38	0	0
8:15 AM	0	0	0	0	0	33	220	0	0	0	0	0	0	40	0	0
8:30 AM	0	0	0	0	0	32	217	0	0	0	0	0	0	39	0	0
8:45 AM	0	0	0	0	0	30	213	0	0	0	0	0	0	37	0	0

	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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	25	189	0	0	0	0	0	0	41	0	0
4:15 PM	0	0	0	0	0	27	191	0	0	0	0	0	0	43	0	0
4:30 PM	0	0	0	0	0	36	184	0	0	0	0	0	0	45	0	0
4:45 PM	0	0	0	0	0	44	162	0	0	0	0	0	0	46	0	0
5:00 PM	0	0	0	0	0	52	150	0	0	0	0	0	0	47	0	0
5:15 PM	0	0	0	0	0	58	152	0	0	0	0	0	0	48	0	0
5:30 PM	0	0	0	0	0	56	148	0	0	0	0	0	0	49	0	0
5:45 PM	0	0	0	0	0	53	147	0	0	0	0	0	0	45	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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**	**129**	**868**	**0**	**0**	**0**	**0**	**0**	**0**	**154**	**0**	**0**
PHF	**0.00**				**0.99**				**0.00**				**0.96**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.6%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.5%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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**	**132**	**726**	**0**	**0**	**0**	**0**	**0**	**0**	**175**	**0**	**0**
PHF	**0.00**				**0.98**				**0.00**				**0.95**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.9%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 21
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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	2	0	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0
7:30 AM	0	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	2	3	0	0	0	0	0	0	2	0	0
8:00 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	2	0	0
8:15 AM	0	0	0	0	0	1	5	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	2	0	0
8:45 AM	0	0	0	0	0	1	3	0	0	0	0	0	0	2	0	0

	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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	2	0	0	0	0	0	0	1	0	0
4:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	0	0	0	1	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	1	0	0
5:30 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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**	**4**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**
PHF	**0.00**				**0.83**				**0.00**				**0.75**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Surface Road Northbound				Surface Road Southbound				Eastbound				Mercantile 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**	**3**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**
PHF	**0.00**				**0.69**				**0.00**				**0.50**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 21
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					Eastbound					Mercantile 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	8	0	0		0	0	0	0		3	0	0	18	
7:15 AM	0	0	0	0		2	6	0	0		0	0	0	0		7	0	0	20	
7:30 AM	0	0	0	0		2	9	0	3		0	0	0	0		4	0	0	22	
7:45 AM	0	0	0	1		4	6	0	4		0	0	0	0		5	0	0	25	
8:00 AM	0	0	0	3		5	7	0	4		0	0	0	0		6	0	0	28	
8:15 AM	0	0	0	2		4	8	0	3		0	0	0	0		7	0	0	30	
8:30 AM	0	0	0	10		4	7	0	2		0	0	0	0		9	0	0	34	
8:45 AM	0	0	0	4		3	8	0	2		0	0	0	0		8	0	0	32	

	Surface Road Northbound					Surface Road Southbound					Eastbound					Mercantile 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		3	11	0	3		0	0	0	0		3	0	0	18	
4:15 PM	0	0	0	4		3	12	0	2		0	0	0	0		3	0	0	20	
4:30 PM	0	0	0	6		4	10	0	3		0	0	0	0		4	0	0	22	
4:45 PM	0	0	0	7		3	9	0	4		0	0	0	0		3	0	0	28	
5:00 PM	0	0	0	8		4	10	0	5		0	0	0	0		5	0	0	35	
5:15 PM	0	0	0	10		3	9	0	4		0	0	0	0		4	0	0	42	
5:30 PM	0	0	0	9		3	8	0	5		0	0	0	0		5	0	0	40	
5:45 PM	0	0	0	10		3	9	0	4		0	0	0	0		4	0	0	38	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Eastbound					Mercantile 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	19		16	30	0	11		0	0	0	0		30	0	0	124	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					Eastbound					Mercantile Street Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	20		13	42	0	12		0	0	0	0		13	0	0	88	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 22
Location:	Boston, MA
Street 1:	Atlantic Avenue/ Cross Street
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic 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	3	77	24	0	0	0	0	0	7	22	0	0	0	24	9
7:15 AM	0	4	73	36	0	0	0	0	0	6	25	0	0	0	25	8
7:30 AM	0	3	72	47	0	0	0	0	0	7	26	0	0	0	29	7
7:45 AM	0	4	71	54	0	0	0	0	0	8	24	0	0	0	31	6
8:00 AM	0	4	82	59	0	0	0	0	0	6	28	0	0	0	34	5
8:15 AM	0	5	96	58	0	0	0	0	0	7	26	0	0	0	35	6
8:30 AM	0	3	99	56	0	0	0	0	0	6	27	0	0	0	36	5
8:45 AM	0	3	97	54	0	0	0	0	0	5	25	0	0	0	34	4

	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic 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	3	54	89	0	0	0	0	0	10	15	0	0	0	38	7
4:15 PM	0	4	55	92	0	0	0	0	0	11	16	0	0	0	39	6
4:30 PM	0	5	61	94	0	0	0	0	0	9	27	0	0	0	40	5
4:45 PM	0	4	74	99	0	0	0	0	0	10	34	0	0	0	42	5
5:00 PM	0	6	106	102	0	0	0	0	0	8	44	0	0	0	41	4
5:15 PM	0	5	127	101	0	0	0	0	0	9	49	0	0	0	43	5
5:30 PM	0	3	133	98	0	0	0	0	0	8	48	0	0	0	46	5
5:45 PM	0	4	131	96	0	0	0	0	0	7	46	0	0	0	41	4

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**15**	**374**	**227**	**0**	**0**	**0**	**0**	**0**	**24**	**106**	**0**	**0**	**0**	**139**	**20**
PHF	**0.97**				**0.00**				**0.96**				**0.97**			
HV %	**0.0%**	**0.0%**	**4.3%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.0%**	**0.0%**	**0.0%**	**5.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**18**	**497**	**397**	**0**	**0**	**0**	**0**	**0**	**32**	**187**	**0**	**0**	**0**	**171**	**18**
PHF	**0.97**				**0.00**				**0.94**				**0.93**			
HV %	**0.0%**	**0.0%**	**1.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 22
Location:	Boston, MA
Street 1:	Atlantic Avenue/ Cross Street
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PO BOX 1723, Framingham, MA 01701
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TRUCKS

	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic 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	3	0	0	0	0	0	0	0	1	0	0	0	1	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0
7:45 AM	0	0	5	0	0	0	0	0	0	0	2	0	0	0	2	0
8:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0
8:15 AM	0	0	3	1	0	0	0	0	0	0	1	0	0	0	1	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	1	0	0	0	2	0

	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic 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	3	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	2	0	0	0	0	0	0	1	0	0	0	0	2	0
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	4	0	0	0	0	0	0	0	1	0	0	0	1	0
5:00 PM	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**0**
PHF	**0.90**				**0.00**				**0.38**				**0.88**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Atlantic Avenue Northbound				Cross Street Southbound				Mercantile Street Eastbound				Atlantic Avenue 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**	**1**	**1**	**0**	**0**	**0**	**5**	**0**
PHF	**0.75**				**0.00**				**0.50**				**0.63**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 22
Location:	Boston, MA
Street 1:	Atlantic Avenue/ Cross Street
Street 2:	Mercantile Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Cross Street Southbound					Mercantile Street Eastbound					Atlantic Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	10	0	3		0	0	0	2		0	1	0	6		0	3	0	55	
7:15 AM	1	11	0	5		0	0	0	4		0	2	0	7		0	6	0	58	
7:30 AM	0	13	1	6		0	0	0	5		0	2	0	8		0	4	1	62	
7:45 AM	1	15	0	4		0	0	0	6		1	3	0	7		0	4	0	65	
8:00 AM	0	14	1	5		0	0	0	4		1	4	0	9		0	6	0	68	
8:15 AM	0	17	0	6		0	0	0	5		0	4	0	8		0	7	1	72	
8:30 AM	1	15	0	4		0	0	0	3		1	3	0	6		0	8	0	75	
8:45 AM	0	14	1	5		0	0	0	4		0	3	0	6		0	8	0	70	

	Atlantic Avenue Northbound					Cross Street Southbound					Mercantile Street Eastbound					Atlantic Avenue Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	13	0	12		0	0	0	38		0	3	0	18		0	3	0	54	
4:15 PM	1	14	1	15		0	0	0	42		1	2	0	10		0	2	0	58	
4:30 PM	0	19	1	18		0	0	0	45		0	4	0	22		0	4	1	60	
4:45 PM	0	18	0	14		0	0	0	40		0	3	0	25		0	3	0	85	
5:00 PM	1	20	0	12		0	0	0	34		1	3	0	28		0	4	1	108	
5:15 PM	0	19	0	15		0	0	0	30		0	3	0	32		0	4	1	122	
5:30 PM	0	20	1	10		0	0	0	28		1	2	0	30		0	5	0	135	
5:45 PM	1	18	0	12		0	0	0	25		0	3	0	28		0	3	0	130	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Cross Street Southbound					Mercantile Street Eastbound					Atlantic 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	1	60	2	20		0	0	0	16		2	14	0	29		0	29	1	285	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Cross Street Southbound					Mercantile Street Eastbound					Atlantic 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	2	77	1	49		0	0	0	117		2	11	0	118		0	16	2	495	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 23
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Clinton Street/I-93 Southbound Off-
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
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	107	22	0	108	41	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	114	23	0	104	43	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	119	24	0	103	42	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	131	25	0	102	44	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	142	23	0	110	46	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	140	24	0	113	45	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	138	22	0	111	43	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	134	21	0	109	41	0	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
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	122	10	0	92	17	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	121	12	0	97	19	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	117	14	0	103	18	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	113	17	0	93	19	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	106	19	0	96	17	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	105	18	0	105	18	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	103	17	0	101	16	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	101	15	0	99	14	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
	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**	**554**	**90**	**0**	**443**	**175**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.98**				**0.98**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.0%**	**1.1%**	**0.0%**	**1.6%**	**2.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
	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**	**473**	**53**	**0**	**385**	**73**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.99**				**0.95**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**1.9%**	**0.0%**	**0.8%**	**2.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 23
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Clinton Street/I-93 Southbound Off-
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
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	2	0	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	1	0	2	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	3	0	0	2	1	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	4	1	0	1	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	4	0	0	2	1	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	3	1	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	0

	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
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	1	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	2	1	0	2	1	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	2	0	0	1	1	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
	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**	**13**	**1**	**0**	**7**	**4**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.70**				**0.69**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Surface Road Northbound				Surface Road Southbound				I-93 Southbound Off-Ramp Southwestbound				Clinton Street Eastbound			
	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**	**7**	**2**	**0**	**4**	**3**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.75**				**0.58**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 23
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	Clinton Street/I-93 Southbound Off-
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					I-93 Southbound Off-Ramp Southwestbound					Clinton Street Eastbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	32		0	9	0	4		0	0	0	6		0	0	0	38	
7:15 AM	0	0	0	34		0	10	0	8		0	0	0	10		0	0	0	40	
7:30 AM	0	0	0	35		0	11	0	10		0	0	0	12		0	0	0	45	
7:45 AM	0	0	0	38		0	9	0	15		0	0	0	14		0	0	1	48	
8:00 AM	0	0	0	40		0	11	1	18		0	0	0	16		0	0	0	55	
8:15 AM	0	0	0	42		0	12	0	20		0	0	0	15		0	0	0	62	
8:30 AM	0	0	0	48		0	11	0	16		0	0	0	18		0	0	1	56	
8:45 AM	0	0	0	55		0	10	0	22		0	0	0	20		0	0	0	60	

	Surface Road Northbound					Surface Road Southbound					I-93 Southbound Off-Ramp Southwestbound					Clinton Street Eastbound				
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	14	0	8		0	0	0	20		0	0	0	124	
4:15 PM	0	0	0	32		0	15	0	10		0	0	0	22		0	0	0	135	
4:30 PM	0	0	0	30		0	14	0	12		0	0	0	25		0	0	1	142	
4:45 PM	0	0	0	35		0	13	1	11		0	0	0	30		0	0	0	168	
5:00 PM	0	0	0	45		0	12	0	15		0	0	0	26		0	0	0	182	
5:15 PM	0	0	0	60		0	13	0	18		0	0	0	32		0	0	1	194	
5:30 PM	0	0	0	52		0	12	0	20		0	0	0	28		0	0	0	210	
5:45 PM	0	0	0	55		0	11	0	22		0	0	0	30		0	0	0	205	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					I-93 Southbound Off-Ramp Southwestbound					Clinton Street Eastbound				
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	185		0	44	1	76		0	0	0	69		0	0	1	233	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					I-93 Southbound Off-Ramp Southwestbound					Clinton Street Eastbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	0	0	0	125		0	56	1	41		0	0	0	97		0	0	1	569	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 24
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Commercial Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TOTAL (CARS & TRUCKS)

	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial 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	90	0	0	0	0	0	0	0	0	0	0	0	0	6
7:15 AM	0	0	87	0	0	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	0	88	0	0	0	0	0	0	0	0	0	0	0	0	10
7:45 AM	0	0	86	0	0	0	0	0	0	0	0	0	0	0	0	12
8:00 AM	0	0	93	0	0	0	0	0	0	0	0	0	0	0	0	15
8:15 AM	0	0	109	0	0	0	0	0	0	0	0	0	0	0	0	17
8:30 AM	0	0	110	0	0	0	0	0	0	0	0	0	0	0	0	16
8:45 AM	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	14

	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial 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	75	0	0	0	0	0	0	0	0	0	0	0	0	7
4:15 PM	0	0	77	0	0	0	0	0	0	0	0	0	0	0	0	8
4:30 PM	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	9
4:45 PM	0	0	91	0	0	0	0	0	0	0	0	0	0	0	0	7
5:00 PM	0	0	118	0	0	0	0	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	137	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	6
5:45 PM	0	0	136	0	0	0	0	0	0	0	0	0	0	0	0	5

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**418**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**62**
PHF	**0.95**				**0.00**				**0.00**				**0.91**			
HV %	**0.0%**	**0.0%**	**4.1%**	**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 5:00 PM to 6:00 PM	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**531**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**
PHF	**0.95**				**0.00**				**0.00**				**0.92**			
HV %	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 24
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Commercial Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.85**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Cross Street Northbound				Cross Street Southbound				Eastbound				Commercial Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.81**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 24
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Commercial Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Cross Street Northbound					Cross Street Southbound					Eastbound					Commercial Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	10	0	28		0	0	0	0		0	0	0	0		0	0	0	72	
7:15 AM	0	12	0	32		0	0	0	0		0	0	0	0		0	0	0	76	
7:30 AM	0	14	0	38		0	0	0	0		0	0	0	0		0	0	0	82	
7:45 AM	0	16	0	45		0	0	0	0		0	0	0	0		0	0	0	88	
8:00 AM	0	15	0	50		0	0	0	0		0	0	0	0		0	0	0	92	
8:15 AM	0	18	0	56		0	0	0	0		0	0	0	0		0	0	1	95	
8:30 AM	0	16	0	54		0	0	0	0		0	0	0	0		0	0	0	90	
8:45 AM	0	14	0	58		0	0	0	0		0	0	0	0		0	0	0	86	

	Cross Street Northbound					Cross Street Southbound					Eastbound					Commercial Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	14	0	60		0	0	0	0		0	0	0	0		0	0	0	108	
4:15 PM	0	16	0	64		0	0	0	0		0	0	0	0		0	0	0	126	
4:30 PM	0	19	0	72		0	0	0	0		0	0	0	0		0	0	0	148	
4:45 PM	0	18	0	80		0	0	0	0		0	0	0	0		0	0	1	184	
5:00 PM	0	22	0	86		0	0	0	0		0	0	0	0		0	0	0	242	
5:15 PM	0	21	0	95		0	0	0	0		0	0	0	0		0	0	0	270	
5:30 PM	0	20	0	92		0	0	0	0		0	0	0	0		0	0	0	265	
5:45 PM	0	19	0	88		0	0	0	0		0	0	0	0		0	0	0	258	

AM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Eastbound					Commercial 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	63	0	218		0	0	0	0		0	0	0	0		0	0	1	363	

PM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Eastbound					Commercial 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	82	0	361		0	0	0	0		0	0	0	0		0	0	0	1035	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 25
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	North Street/ I-93 NB Off-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
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	65	13	0	0	0	17	0	47	67	0
7:15 AM	0	0	0	0	0	0	69	14	0	0	0	18	0	50	72	0
7:30 AM	0	0	0	0	0	0	72	17	0	0	0	21	0	51	76	0
7:45 AM	0	0	0	0	0	0	73	18	0	0	0	23	0	60	79	0
8:00 AM	0	0	0	0	0	0	75	16	0	0	0	25	0	65	82	0
8:15 AM	0	0	0	0	0	0	76	15	0	0	0	26	0	62	81	0
8:30 AM	0	0	0	0	0	0	75	14	0	0	0	25	0	60	80	0
8:45 AM	0	0	0	0	0	0	74	13	0	0	0	23	0	58	78	0

	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
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	64	18	0	0	0	31	0	37	35	0
4:15 PM	0	0	0	0	0	0	68	20	0	0	0	33	0	32	38	0
4:30 PM	0	0	0	0	0	0	67	18	0	0	0	31	0	33	37	0
4:45 PM	0	0	0	0	0	0	64	16	0	0	0	29	0	37	35	0
5:00 PM	0	0	0	0	0	0	62	15	0	0	0	27	0	36	34	0
5:15 PM	0	0	0	0	0	0	59	14	0	0	0	24	0	40	33	0
5:30 PM	0	0	0	0	0	0	58	15	0	0	0	25	0	37	34	0
5:45 PM	0	0	0	0	0	0	55	14	0	0	0	23	0	38	32	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
	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**	**299**	**63**	**0**	**0**	**0**	**99**	**0**	**247**	**322**	**0**
PHF	**0.00**				**0.99**				**0.95**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.3%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**1.6%**	**0.9%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
	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**	**263**	**72**	**0**	**0**	**0**	**124**	**0**	**139**	**145**	**0**
PHF	**0.00**				**0.95**				**0.94**				**0.99**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**	**1.4%**	**2.1%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 25
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	North Street/ I-93 NB Off-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
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	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0
7:45 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	2	0	0	0	0	1	0	1	1	0
8:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0

	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
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	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
	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**	**10**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**4**	**0**
PHF	**0.00**				**0.69**				**0.25**				**0.88**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Surface Road Northbound				Surface Road Southbound				North Street Northeastbound				I-93 Northbound Off-Ramp Southwestbound			
	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**	**4**	**1**	**0**	**0**	**0**	**1**	**0**	**4**	**2**	**0**
PHF	**0.00**				**0.63**				**0.25**				**0.75**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 25
Location:	Boston, MA
Street 1:	Surface Road
Street 2:	North Street/ I-93 NB Off-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Surface Road Northbound					Surface Road Southbound					North Street Northeastbound					I-93 Northbound Off-Ramp Southwestbound				
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	9	0	30		0	0	0	22		0	0	0	10	
7:15 AM	0	0	0	0		0	9	0	34		0	0	1	26		0	0	0	15	
7:30 AM	0	0	0	0		0	10	1	38		0	0	1	28		0	0	0	12	
7:45 AM	0	0	0	0		0	9	1	36		0	0	0	30		0	0	0	18	
8:00 AM	0	0	0	0		0	11	0	40		0	0	1	32		0	0	0	16	
8:15 AM	0	0	0	0		0	10	1	38		0	0	2	38		0	0	0	20	
8:30 AM	0	0	0	0		0	10	0	35		0	0	1	35		0	0	0	15	
8:45 AM	0	0	0	0		0	10	1	36		0	0	0	40		0	0	0	16	

	Surface Road Northbound					Surface Road Southbound					North Street Northeastbound					I-93 Northbound Off-Ramp Southwestbound				
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	13	0	122		0	0	1	78		0	0	0	18	
4:15 PM	0	0	0	0		0	13	1	135		0	0	2	82		0	0	0	22	
4:30 PM	0	0	0	0		0	14	0	148		0	0	0	85		0	0	0	20	
4:45 PM	0	0	0	0		0	13	1	132		0	0	1	90		0	0	0	18	
5:00 PM	0	0	0	0		0	12	2	126		0	0	0	85		0	0	0	16	
5:15 PM	0	0	0	0		0	12	1	115		0	0	1	82		0	0	0	12	
5:30 PM	0	0	0	0		0	12	1	120		0	0	0	86		0	0	0	15	
5:45 PM	0	0	0	0		0	10	0	118		0	0	1	84		0	0	0	14	

AM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					North Street Northeastbound					I-93 Northbound Off-Ramp Southwestbound				
7:45 AM to 8:45 AM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	40	2	149		0	0	4	135		0	0	0	69	

PM PEAK HOUR[1]	Surface Road Northbound					Surface Road Southbound					North Street Northeastbound					I-93 Northbound Off-Ramp Southwestbound				
4:00 PM to 5:00 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	53	2	537		0	0	4	335		0	0	0	78	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 26
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	I-93 NB Off-Ramp/ North Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
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	87	3	0	0	0	0	0	128	17	0	0	0	0	0
7:15 AM	0	0	89	4	0	0	0	0	0	130	16	0	0	0	0	0
7:30 AM	0	0	91	5	0	0	0	0	0	131	14	0	0	0	0	0
7:45 AM	0	0	93	7	0	0	0	0	0	133	13	0	0	0	0	0
8:00 AM	0	0	99	8	0	0	0	0	0	134	11	0	0	0	0	0
8:15 AM	0	0	109	7	0	0	0	0	0	132	12	0	0	0	0	0
8:30 AM	0	0	116	6	0	0	0	0	0	129	11	0	0	0	0	0
8:45 AM	0	0	112	5	0	0	0	0	0	126	10	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
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	93	4	0	0	0	0	0	74	15	0	0	0	0	0
4:15 PM	0	0	96	3	0	0	0	0	0	65	14	0	0	0	0	0
4:30 PM	0	0	97	4	0	0	0	0	0	54	13	0	0	0	0	0
4:45 PM	0	0	112	5	0	0	0	0	0	49	12	0	0	0	0	0
5:00 PM	0	0	124	3	0	0	0	0	0	43	11	0	0	0	0	0
5:15 PM	0	0	128	4	0	0	0	0	0	44	12	0	0	0	0	0
5:30 PM	0	0	129	3	0	0	0	0	0	45	10	0	0	0	0	0
5:45 PM	0	0	125	3	0	0	0	0	0	43	9	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**436**	**26**	**0**	**0**	**0**	**0**	**0**	**521**	**44**	**0**	**0**	**0**	**0**	**0**
PHF	**0.95**				**0.00**				**0.97**				**0.00**			
HV %	**0.0%**	**0.0%**	**3.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**506**	**13**	**0**	**0**	**0**	**0**	**0**	**175**	**42**	**0**	**0**	**0**	**0**	**0**
PHF	**0.98**				**0.00**				**0.97**				**0.00**			
HV %	**0.0%**	**0.0%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 26
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	I-93 NB Off-Ramp/ North Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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TRUCKS

	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
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	0	0	0	1	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	2	0	0	0	0	0	0
7:30 AM	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0
7:45 AM	0	0	5	0	0	0	0	0	0	3	0	0	0	0	0	0
8:00 AM	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0
8:15 AM	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	0	0	0	4	0	0	0	0	0	0
8:45 AM	0	0	4	0	0	0	0	0	0	3	0	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
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	3	0	0	0	0	0	0	2	0	0	0	0	0	0
4:15 PM	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0
4:30 PM	0	0	4	0	0	0	0	0	0	3	0	0	0	0	0	0
4:45 PM	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0
5:15 PM	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.85**				**0.00**				**0.88**				**0.00**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Cross Street Northbound				Cross Street Southbound				I-93 Northbound Off-Ramp Northeastbound				North Street Southwestbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.81**				**0.00**				**0.67**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 26
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	I-93 NB Off-Ramp/ North Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Cross Street Northbound					Cross Street Southbound					I-93 Northbound Off-Ramp Northeastbound					North Street Southwestbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	11	0	0		0	0	0	34		0	0	0	0		0	0	0	40	
7:15 AM	0	13	0	0		0	0	0	38		0	0	0	0		0	0	0	42	
7:30 AM	0	14	0	0		0	0	0	40		0	0	0	0		0	0	0	45	
7:45 AM	0	17	0	0		0	0	0	46		0	0	0	0		0	0	0	48	
8:00 AM	0	19	0	0		0	0	0	60		0	0	0	0		0	0	0	52	
8:15 AM	0	18	1	0		0	0	0	72		0	0	0	0		0	0	0	58	
8:30 AM	0	16	0	0		0	0	0	84		0	0	0	0		0	0	0	66	
8:45 AM	0	15	0	0		0	0	0	75		0	0	0	0		0	0	0	70	

	Cross Street Northbound					Cross Street Southbound					I-93 Northbound Off-Ramp Northeastbound					North Street Southwestbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	15	0	0		0	0	0	78		0	0	0	0		0	0	0	62	
4:15 PM	0	17	0	0		0	0	0	82		0	0	0	0		0	0	0	68	
4:30 PM	0	20	0	0		0	0	0	105		0	0	0	0		0	0	0	80	
4:45 PM	0	21	0	0		0	0	0	126		0	0	0	0		0	0	0	98	
5:00 PM	0	22	1	0		0	0	0	138		0	0	0	0		0	0	0	115	
5:15 PM	0	20	0	0		0	0	0	157		0	0	0	0		0	0	0	126	
5:30 PM	0	21	0	0		0	0	0	164		0	0	0	0		0	0	0	132	
5:45 PM	0	19	0	0		0	0	0	172		0	0	0	0		0	0	0	154	

AM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					I-93 Northbound Off-Ramp Northeastbound					North Street Southwestbound				
8:00 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
9:00 AM	0	68	1	0		0	0	0	291		0	0	0	0		0	0	0	246	

PM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					I-93 Northbound Off-Ramp Northeastbound					North Street Southwestbound				
5:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
6:00 PM	0	82	1	0		0	0	0	631		0	0	0	0		0	0	0	527	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 27
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Hanover Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
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TOTAL (CARS & TRUCKS)

	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover 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	176	8	0	0	0	0	0	4	7	0	0	0	21	15
7:15 AM	0	33	177	9	0	0	0	0	0	5	8	0	0	0	22	18
7:30 AM	0	41	170	11	0	0	0	0	0	7	9	0	0	0	23	20
7:45 AM	0	48	165	13	0	0	0	0	0	6	10	0	0	0	25	22
8:00 AM	0	55	163	15	0	0	0	0	0	8	12	0	0	0	26	23
8:15 AM	0	61	164	16	0	0	0	0	0	6	11	0	0	0	25	22
8:30 AM	0	60	170	15	0	0	0	0	0	7	10	0	0	0	24	21
8:45 AM	0	57	167	14	0	0	0	0	0	5	9	0	0	0	22	19

	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover 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	13	147	7	0	0	0	0	0	7	9	0	0	0	27	11
4:15 PM	0	15	138	8	0	0	0	0	0	8	10	0	0	0	30	13
4:30 PM	0	13	131	7	0	0	0	0	0	7	13	0	0	0	32	14
4:45 PM	0	11	145	5	0	0	0	0	0	8	15	0	0	0	35	16
5:00 PM	0	9	152	6	0	0	0	0	0	9	18	0	0	0	38	18
5:15 PM	0	7	161	4	0	0	0	0	0	7	21	0	0	0	37	17
5:30 PM	0	8	161	5	0	0	0	0	0	8	20	0	0	0	36	16
5:45 PM	0	6	159	3	0	0	0	0	0	7	19	0	0	0	34	15

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**233**	**664**	**60**	**0**	**0**	**0**	**0**	**0**	**26**	**42**	**0**	**0**	**0**	**97**	**85**
PHF	**0.98**				**0.00**				**0.85**				**0.93**			
HV %	**0.0%**	**0.4%**	**4.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.8%**	**2.4%**	**0.0%**	**0.0%**	**0.0%**	**2.1%**	**3.5%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**30**	**633**	**18**	**0**	**0**	**0**	**0**	**0**	**31**	**78**	**0**	**0**	**0**	**145**	**66**
PHF	**0.98**				**0.00**				**0.97**				**0.94**			
HV %	**0.0%**	**0.0%**	**3.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**1.5%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 27
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Hanover Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover 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	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1	0
8:00 AM	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	7	0	0	0	0	0	0	0	1	0	0	0	1	0
8:30 AM	0	0	9	0	0	0	0	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	1	0

	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover 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	5	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	4	0	0	0	0	0	0	1	0	0	0	0	1	0
4:30 PM	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0
5:00 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**3**
PHF	**0.92**				**0.00**				**0.50**				**0.63**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Cross Street Northbound				Cross Street Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**1**	**2**
PHF	**0.92**				**0.00**				**0.75**				**0.75**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 27
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Hanover Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Cross Street Northbound					Cross Street Southbound					Hanover Street Eastbound					Hanover Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	11	0	58		0	0	0	62		0	1	0	15		0	2	0	22	
7:15 AM	0	13	0	62		0	0	0	68		0	2	0	18		0	3	0	24	
7:30 AM	0	15	0	64		0	0	0	74		1	1	0	20		0	2	1	25	
7:45 AM	1	17	0	72		0	0	0	90		0	3	0	22		0	1	0	32	
8:00 AM	0	16	1	85		0	0	0	112		1	2	0	24		0	3	1	55	
8:15 AM	1	17	0	92		0	0	0	124		0	2	0	28		0	2	0	64	
8:30 AM	0	18	0	105		0	0	0	132		0	1	0	25		0	3	1	70	
8:45 AM	0	16	1	112		0	0	0	128		1	2	0	26		0	2	0	75	

	Cross Street Northbound					Cross Street Southbound					Hanover Street Eastbound					Hanover Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	15	0	84		0	0	0	122		0	2	0	30		0	1	0	48	
4:15 PM	0	17	0	88		0	0	0	135		0	2	0	32		0	2	1	52	
4:30 PM	0	18	1	92		0	0	0	140		1	3	0	35		0	1	0	54	
4:45 PM	1	21	0	116		0	0	0	158		0	1	0	40		0	3	0	60	
5:00 PM	0	20	0	125		0	0	0	172		0	2	0	44		0	2	1	66	
5:15 PM	0	21	1	130		0	0	0	180		1	2	0	52		0	1	0	70	
5:30 PM	1	19	0	138		0	0	0	192		0	1	0	56		0	2	1	75	
5:45 PM	0	20	0	145		0	0	0	204		0	2	0	60		0	1	0	78	

AM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Hanover Street Eastbound					Hanover 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	1	67	2	394		0	0	0	496		2	7	0	103		0	10	2	264	

PM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Hanover Street Eastbound					Hanover 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	1	80	1	538		0	0	0	748		1	7	0	212		0	6	2	289	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 28
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Salem Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem 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	189	6	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	193	7	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	190	7	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	185	8	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	187	7	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	183	9	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	190	8	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	184	7	0	0	0	0	0	0	0	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem 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	157	8	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	152	7	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	143	9	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	161	8	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	170	9	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	175	10	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	177	8	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	174	7	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**757**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.98**				**0.00**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**3.4%**	**0.0%**	**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 5:00 PM to 6:00 PM	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**696**	**34**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.99**				**0.00**				**0.00**				**0.00**			
HV %	**0.0%**	**0.0%**	**3.4%**	**0.0%**	**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:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 28
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Salem Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem 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	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem 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	5	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.90**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Cross Street Northbound				Cross Street Southbound				Eastbound				Salem Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.88**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 28
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Salem Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Cross Street Northbound					Cross Street Southbound					Eastbound					Salem Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	11	0	52		0	0	0	0		0	0	0	0		0	0	0	30	
7:15 AM	0	13	0	74		0	0	0	0		0	0	0	0		0	0	0	35	
7:30 AM	0	15	0	88		0	0	0	0		0	0	0	0		0	0	0	42	
7:45 AM	0	18	0	105		0	0	0	0		0	0	0	0		0	0	0	45	
8:00 AM	0	17	0	116		0	0	0	5		0	0	0	0		0	0	0	48	
8:15 AM	0	18	0	108		0	0	0	0		0	0	0	0		0	0	0	52	
8:30 AM	0	19	0	115		0	0	0	0		0	0	0	0		0	0	0	55	
8:45 AM	0	17	0	120		0	0	0	0		0	0	0	0		0	0	0	62	

	Cross Street Northbound					Cross Street Southbound					Eastbound					Salem Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	15	0	96		0	0	0	0		0	0	0	0		0	0	0	38	
4:15 PM	0	17	0	108		0	0	0	0		0	0	0	0		0	0	0	42	
4:30 PM	0	19	0	115		0	0	0	0		0	0	0	0		0	0	0	46	
4:45 PM	0	21	0	122		0	0	0	0		0	0	0	0		0	0	0	50	
5:00 PM	0	20	0	128		0	0	0	0		0	0	0	0		0	0	0	54	
5:15 PM	0	21	0	135		0	0	0	0		0	0	0	0		0	0	0	58	
5:30 PM	0	19	0	132		0	0	0	0		0	0	0	0		0	0	0	62	
5:45 PM	0	21	0	138		0	0	0	0		0	0	0	0		0	0	0	65	

AM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Eastbound					Salem Street Westbound				
7:00 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:00 AM	0	57	0	319		0	0	0	0		0	0	0	0		0	0	0	152	

PM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Eastbound					Salem 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	81	0	533		0	0	0	0		0	0	0	0		0	0	0	239	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 29
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Sudbury Street/ I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
Start Time	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	33	156	0	0	0	0	0	37	23	0	0	0	0	0
7:15 AM	0	0	35	158	0	0	0	0	0	41	25	0	0	0	0	0
7:30 AM	0	0	34	156	0	0	0	0	0	42	27	0	0	0	0	0
7:45 AM	0	0	33	152	0	0	0	0	0	43	26	0	0	0	0	0
8:00 AM	0	0	32	155	0	0	0	0	0	44	28	0	0	0	0	0
8:15 AM	0	0	31	152	0	0	0	0	0	45	27	0	0	0	0	0
8:30 AM	0	0	30	160	0	0	0	0	0	44	26	0	0	0	0	0
8:45 AM	0	0	29	155	0	0	0	0	0	42	25	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
Start Time	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	65	92	0	0	0	0	0	65	39	0	0	0	0	0
4:15 PM	0	0	67	85	0	0	0	0	0	68	41	0	0	0	0	0
4:30 PM	0	0	66	77	0	0	0	0	0	70	43	0	0	0	0	0
4:45 PM	0	0	64	97	0	0	0	0	0	69	45	0	0	0	0	0
5:00 PM	0	0	63	107	0	0	0	0	0	71	51	0	0	0	0	0
5:15 PM	0	0	61	114	0	0	0	0	0	70	56	0	0	0	0	0
5:30 PM	0	0	62	115	0	0	0	0	0	69	55	0	0	0	0	0
5:45 PM	0	0	60	114	0	0	0	0	0	67	54	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
	0	**0**	**134**	**621**	**0**	**0**	**0**	**0**	**0**	**170**	**106**	**0**	**0**	**0**	**0**	**0**
PHF	**0.98**				**0.00**				**0.96**				**0.00**			
HV %	**0.0%**	**0.0%**	**10.4%**	**2.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**1.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
	0	**0**	**246**	**450**	**0**	**0**	**0**	**0**	**0**	**277**	**216**	**0**	**0**	**0**	**0**	**0**
PHF	**0.98**				**0.00**				**0.98**				**0.00**			
HV %	**0.0%**	**0.0%**	**4.1%**	**3.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.7%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 29
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Sudbury Street/ I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
Start Time	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	3	3	0	0	0	0	0	1	0	0	0	0	0	0
7:30 AM	0	0	4	4	0	0	0	0	0	2	1	0	0	0	0	0
7:45 AM	0	0	3	4	0	0	0	0	0	1	0	0	0	0	0	0
8:00 AM	0	0	4	5	0	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	0	4	4	0	0	0	0	0	1	2	0	0	0	0	0
8:30 AM	0	0	3	7	0	0	0	0	0	0	1	0	0	0	0	0
8:45 AM	0	0	3	6	0	0	0	0	0	1	0	0	0	0	0	0

	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
Start Time	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	2	3	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM	0	0	3	3	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	3	5	0	0	0	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	4	3	0	0	0	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	2	4	0	0	0	0	0	1	1	0	0	0	0	0
5:15 PM	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	3	0	0	0	0	0	1	0	0	0	0	0	0
5:45 PM	0	0	2	3	0	0	0	0	0	0	1	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
	0	**0**	**14**	**22**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**0**	**0**	**0**
PHF	**0.90**				**0.00**				**0.50**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Cross Street Northbound				Cross Street Southbound				Sudbury Street Eastbound				I-93 Northbound On-Ramp Southbound			
	U-Turn	Left	Thru (I-93)	Thru	U-Turn	Left	Thru	Right	U-Turn	Left (I-93)	Left	Right	U-Turn	Left	Thru	Right
	0	**0**	**12**	**15**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**
PHF	**0.84**				**0.00**				**0.63**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 29
Location:	Boston, MA
Street 1:	Cross Street
Street 2:	Sudbury Street/ I-93 NB On-Ramp
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Cross Street Northbound					Cross Street Southbound					Sudbury Street Eastbound					I-93 Northbound On-Ramp Southbound				
Start Time	Left	Thru (I-93)	Thru	PED		Left	Thru	Right	PED		Left (I-93)	Left	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	11	70		0	0	0	0		0	0	0	42		0	0	0	0	
7:15 AM	0	0	13	85		0	0	0	0		0	0	0	45		0	0	0	0	
7:30 AM	0	0	15	92		0	0	0	0		0	0	0	48		0	0	0	0	
7:45 AM	0	0	18	98		0	0	0	0		0	0	0	50		0	0	0	0	
8:00 AM	0	0	17	104		0	0	0	0		0	0	0	54		0	0	0	0	
8:15 AM	0	0	18	118		0	0	0	0		0	0	0	55		0	0	0	0	
8:30 AM	0	0	19	124		0	0	0	1		0	0	0	56		0	0	0	1	
8:45 AM	0	0	17	128		0	0	0	0		0	0	0	52		0	0	0	0	

	Cross Street Northbound					Cross Street Southbound					Sudbury Street Eastbound					I-93 Northbound On-Ramp Southbound				
Start Time	Left	Thru (I-93)	Thru	PED		Left	Thru	Right	PED		Left (I-93)	Left	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	15	125		0	0	0	0		0	0	0	25		0	0	0	0	
4:15 PM	0	0	17	134		0	0	0	1		0	0	0	28		0	0	0	1	
4:30 PM	0	0	19	148		0	0	0	0		0	0	0	32		0	0	0	0	
4:45 PM	0	0	21	155		0	0	0	2		0	0	0	36		0	0	0	2	
5:00 PM	0	0	20	164		0	0	0	1		0	0	0	40		0	0	0	1	
5:15 PM	0	0	21	172		0	0	0	0		0	0	0	45		0	0	0	0	
5:30 PM	0	0	19	178		0	0	0	1		0	0	0	52		0	0	0	1	
5:45 PM	0	0	21	176		0	0	0	0		0	0	0	55		0	0	0	0	

AM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Sudbury Street Eastbound					I-93 Northbound On-Ramp Southbound				
7:15 AM to 8:15 AM	Left	Thru (I-93)	Thru	PED		Left	Thru	Right	PED		Left (I-93)	Left	Right	PED		Left	Thru	Right	PED	
	0	0	63	379		0	0	0	0		0	0	0	197		0	0	0	0	

PM PEAK HOUR[1]	Cross Street Northbound					Cross Street Southbound					Sudbury Street Eastbound					I-93 Northbound On-Ramp Southbound				
5:00 PM to 6:00 PM	Left	Thru (I-93)	Thru	PED		Left	Thru	Right	PED		Left (I-93)	Left	Right	PED		Left	Thru	Right	PED	
	0	0	81	690		0	0	0	2		0	0	0	192		0	0	0	2	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 30
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central 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	141	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	147	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30 AM	0	0	152	0	0	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	0	169	0	0	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	0	187	0	0	0	0	0	0	0	0	0	0	0	0	6
8:15 AM	0	0	203	0	0	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	0	207	0	0	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	0	0	198	0	0	0	0	0	0	0	0	0	0	0	0	3

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central 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	174	0	0	0	0	0	0	0	0	0	0	0	0	15
4:15 PM	0	0	167	0	0	0	0	0	0	0	0	0	0	0	0	10
4:30 PM	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	14
4:45 PM	0	0	198	0	0	0	0	0	0	0	0	0	0	0	0	17
5:00 PM	0	0	239	0	0	0	0	0	0	0	0	0	0	0	0	18
5:15 PM	0	0	254	0	0	0	0	0	0	0	0	0	0	0	0	21
5:30 PM	0	0	262	0	0	0	0	0	0	0	0	0	0	0	0	18
5:45 PM	0	0	253	0	0	0	0	0	0	0	0	0	0	0	0	13

AM PEAK HOUR 8:00 AM to 9:00 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**795**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**
PHF	**0.96**				**0.00**				**0.00**				**0.79**			
HV %	**0.0%**	**0.0%**	**2.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.3%**

PM PEAK HOUR 5:00 PM to 6:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**1008**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**70**
PHF	**0.96**				**0.00**				**0.00**				**0.83**			
HV %	**0.0%**	**0.0%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 30
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TRUCKS

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central 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	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
PHF	**0.83**				**0.00**				**0.00**				**0.25**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Atlantic Avenue Northbound				Atlantic Avenue Southbound				Eastbound				Central Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
PHF	**0.83**				**0.00**				**0.00**				**0.25**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 30
Location:	Boston, MA
Street 1:	Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Eastbound					Central Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	10	0	0		0	0	0	0		0	0	0	0		0	0	0	114	
7:15 AM	0	11	0	0		0	0	0	0		0	0	0	0		0	0	0	125	
7:30 AM	0	13	0	2		0	0	0	0		0	0	0	0		0	0	0	128	
7:45 AM	0	15	0	0		0	0	0	0		0	0	0	0		0	0	1	137	
8:00 AM	0	16	0	0		0	0	0	0		0	0	0	0		0	0	0	156	
8:15 AM	0	17	0	0		0	0	0	0		0	0	0	0		0	0	1	168	
8:30 AM	0	16	0	0		0	0	0	0		0	0	0	0		0	0	1	158	
8:45 AM	0	17	0	0		0	0	0	0		0	0	0	0		0	0	0	152	

	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Eastbound					Central Street Westbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	11	0	0		0	0	0	0		0	0	0	0		0	0	0	145	
4:15 PM	0	14	0	0		0	0	0	0		0	0	0	0		0	0	1	152	
4:30 PM	0	18	0	0		0	0	0	0		0	0	0	0		0	0	1	158	
4:45 PM	0	19	0	0		0	0	0	0		0	0	0	0		0	0	0	162	
5:00 PM	0	21	0	0		0	0	0	0		0	0	0	0		0	0	1	168	
5:15 PM	0	20	0	0		0	0	0	0		0	0	0	0		0	0	0	170	
5:30 PM	0	19	0	0		0	0	0	0		0	0	0	0		0	0	1	162	
5:45 PM	0	18	0	0		0	0	0	0		0	0	0	0		0	0	0	157	

AM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Eastbound					Central 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	66	0	0		0	0	0	0		0	0	0	0		0	0	2	634	

PM PEAK HOUR[1]	Atlantic Avenue Northbound					Atlantic Avenue Southbound					Eastbound					Central 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	78	0	0		0	0	0	0		0	0	0	0		0	0	2	657	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 31
Location:	Boston, MA
Street 1:	Old Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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	2	7	0	0	0	0	2	0	0	0	0	0	0	0	0
7:15 AM	0	3	8	0	0	0	1	1	0	0	0	0	0	0	0	0
7:30 AM	0	3	9	0	0	0	1	3	0	0	0	0	0	0	0	0
7:45 AM	0	4	10	0	0	0	0	2	0	0	0	0	0	0	0	0
8:00 AM	0	3	12	0	0	0	1	3	0	0	0	0	0	0	0	0
8:15 AM	0	4	10	0	0	0	1	2	0	0	0	0	0	0	0	0
8:30 AM	0	2	11	0	0	0	1	2	0	0	0	0	0	0	0	0
8:45 AM	0	2	10	0	0	0	0	1	0	0	0	0	0	0	0	0

	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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	14	26	0	0	0	1	1	0	0	0	0	0	0	0	0
4:15 PM	0	10	29	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	13	24	0	0	0	1	1	0	0	0	0	0	0	0	0
4:45 PM	0	16	20	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM	0	18	17	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	20	15	0	0	0	2	1	0	0	0	0	0	0	0	0
5:30 PM	0	17	14	0	0	0	0	1	0	0	0	0	0	0	0	0
5:45 PM	0	12	15	0	0	0	1	1	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**14**	**41**	**0**	**0**	**0**	**3**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF		**0.92**				**0.81**				**0.00**				**0.00**		
HV %	**0.0%**	**7.1%**	**4.9%**	**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%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central Street Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**53**	**99**	**0**	**0**	**0**	**4**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF		**0.95**				**0.88**				**0.00**				**0.00**		
HV %	**0.0%**	**1.9%**	**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%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 31
Location:	Boston, MA
Street 1:	Old Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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	0	0	0	0	0	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	1	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	1	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 7:15 AM to 8:15 AM	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.00**				**0.00**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Old Atlantic Avenue Northbound				Old Atlantic Avenue Southbound				Central 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**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 31
Location:	Boston, MA
Street 1:	Old Atlantic Avenue
Street 2:	Central Street
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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PEDESTRIANS & BICYCLES

	Old Atlantic Avenue Northbound					Old Atlantic Avenue Southbound					Central Street 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	8		0	0	0	5		0	0	0	18		0	0	0	0	
7:15 AM	0	0	0	10		0	0	0	7		0	0	0	20		0	0	0	0	
7:30 AM	0	1	0	14		0	0	0	8		0	0	0	21		0	0	0	0	
7:45 AM	1	0	0	16		0	1	0	14		0	0	0	25		0	0	0	0	
8:00 AM	0	1	0	15		0	0	0	16		0	0	0	28		0	0	0	0	
8:15 AM	0	2	0	18		0	0	1	18		0	0	0	30		0	0	0	0	
8:30 AM	1	1	0	15		0	0	0	20		0	0	0	32		0	0	0	0	
8:45 AM	0	1	0	19		0	0	0	17		0	0	0	29		0	0	0	0	

	Old Atlantic Avenue Northbound					Old Atlantic Avenue Southbound					Central Street Eastbound					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	9		0	0	0	40		0	0	0	28		0	0	0	0	
4:15 PM	0	0	0	11		0	0	1	42		0	0	0	30		0	0	0	0	
4:30 PM	1	1	0	12		0	1	0	45		0	0	0	32		0	0	0	0	
4:45 PM	0	2	0	18		0	0	0	47		0	0	0	38		0	0	0	0	
5:00 PM	0	2	0	20		0	0	1	49		0	0	0	47		0	0	0	0	
5:15 PM	0	1	0	22		0	1	0	52		0	0	0	56		0	0	0	0	
5:30 PM	1	0	0	25		0	0	0	48		0	0	0	60		0	0	0	0	
5:45 PM	0	1	0	23		0	0	0	46		0	0	0	58		0	0	0	0	

AM PEAK HOUR[1]	Old Atlantic Avenue Northbound					Old Atlantic Avenue Southbound					Central Street Eastbound					Westbound				
7:30 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:30 AM	1	4	0	63		0	1	1	56		0	0	0	104		0	0	0	0	

PM PEAK HOUR[1]	Old Atlantic Avenue Northbound					Old Atlantic Avenue Southbound					Central Street Eastbound					Westbound				
4:00 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:00 PM	1	4	0	50		0	1	1	174		0	0	0	128		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 32
Location:	Boston, MA
Street 1:	Old Atlantic Avenue
Street 2:	State Street/ Long Wharf
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

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TOTAL (CARS & TRUCKS)

	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf 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	0	4	0	0	0	0	1	0	7	2	0	0	8	0
7:15 AM	0	4	0	5	0	0	0	0	0	0	10	2	0	0	10	0
7:30 AM	0	3	0	6	0	0	0	0	0	0	7	4	0	0	17	0
7:45 AM	0	2	0	8	0	0	0	0	0	0	11	2	0	0	22	0
8:00 AM	0	3	0	9	0	0	0	0	0	0	8	4	0	0	25	0
8:15 AM	0	2	0	8	0	0	0	0	0	0	11	2	0	1	30	0
8:30 AM	0	4	0	7	0	0	0	0	0	0	9	3	0	0	26	0
8:45 AM	0	4	0	6	0	0	0	0	0	0	10	1	0	0	24	0

	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf 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	1	11	0	14	0	0	0	0	0	0	3	1	0	0	11	0
4:15 PM	0	16	0	13	0	0	0	0	0	0	4	2	0	0	9	0
4:30 PM	0	13	0	11	0	0	0	0	0	0	5	2	0	0	17	0
4:45 PM	0	11	0	9	0	0	0	0	0	0	7	1	0	0	24	0
5:00 PM	0	10	0	7	0	0	0	0	0	0	9	1	0	0	32	0
5:15 PM	0	7	0	8	0	0	0	0	0	0	6	3	0	0	36	0
5:30 PM	0	8	0	6	0	0	0	0	0	0	7	1	0	0	33	0
5:45 PM	0	10	0	5	0	0	0	0	0	0	5	2	0	0	28	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**11**	**0**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**39**	**11**	**0**	**1**	**103**	**0**
PHF	**0.90**				**0.00**				**0.96**				**0.84**			
HV %	**0.0%**	**9.1%**	**0.0%**	**3.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**9.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:45 PM to 5:45 PM	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**36**	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**6**	**0**	**0**	**125**	**0**
PHF	**0.83**				**0.00**				**0.88**				**0.87**			
HV %	**0.0%**	**2.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 32
Location:	Boston, MA
Street 1:	Old Atlantic Avenue
Street 2:	State Street/ Long Wharf
Count Date:	6/19/2018
Day of Week:	Tuesday
Weather:	Partly Sunny, 80°F

BOSTON TRAFFIC DATA
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TRUCKS

	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf 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	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	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf 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	1	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 7:45 AM to 8:45 AM	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.00**				**0.25**				**0.00**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Old Atlantic Avenue Northbound				Southbound				State Street Eastbound				Long Wharf 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**	**0**	**0**	**0**	**0**	**1**	**0**
PHF	**0.25**				**0.00**				**0.00**				**0.25**			

Client:	Melissa Restrepo
Project #:	223_073_HSH
BTD #:	Location 32
Location:	Boston, MA
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Count Date:	6/19/2018
Day of Week:	Tuesday
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PEDESTRIANS & BICYCLES

	Old Atlantic Avenue Northbound					Southbound					State Street Eastbound					Long Wharf 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	0		0	0	0	14		0	0	0	30	
7:15 AM	0	0	0	15		0	0	0	0		0	0	0	16		0	0	0	32	
7:30 AM	1	0	0	14		0	0	0	0		0	0	0	18		0	0	0	35	
7:45 AM	0	0	0	18		0	0	0	0		0	0	0	15		1	0	0	38	
8:00 AM	1	0	0	20		0	0	0	0		0	0	0	16		0	0	0	40	
8:15 AM	1	0	1	22		0	0	0	0		0	0	1	20		0	1	0	42	
8:30 AM	1	0	0	25		0	0	0	0		0	0	0	22		2	0	0	44	
8:45 AM	0	0	1	28		0	0	0	0		0	0	0	25		0	0	0	48	

	Old Atlantic Avenue Northbound					Southbound					State Street Eastbound					Long Wharf 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	185		0	0	0	0		0	0	0	40		0	0	0	55	
4:15 PM	0	0	0	90		0	0	0	0		0	0	1	42		0	1	0	58	
4:30 PM	1	0	0	86		0	0	0	0		0	0	0	45		1	0	0	62	
4:45 PM	1	0	1	92		0	0	0	0		0	0	0	43		0	0	0	65	
5:00 PM	2	0	0	88		0	0	0	0		0	0	1	35		0	1	0	70	
5:15 PM	0	0	1	82		0	0	0	0		0	0	0	32		1	0	0	72	
5:30 PM	0	0	0	85		0	0	0	0		0	0	0	30		0	0	0	68	
5:45 PM	1	0	0	90		0	0	0	0		0	0	0	35		0	0	0	65	

AM PEAK HOUR[1]	Old Atlantic Avenue Northbound					Southbound					State Street Eastbound					Long Wharf Westbound				
7:45 AM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
8:45 AM	3	0	1	85		0	0	0	0		0	0	1	73		3	1	0	164	

PM PEAK HOUR[1]	Old Atlantic Avenue Northbound					Southbound					State Street Eastbound					Long Wharf Westbound				
4:45 PM																				
to	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
5:45 PM	3	0	2	347		0	0	0	0		0	0	1	140		1	1	0	275	

[1] *Peak hours corresponds to vehicular peak hours.*

Seasonal Adjustment Factors

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

Crash Rate Worksheets

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

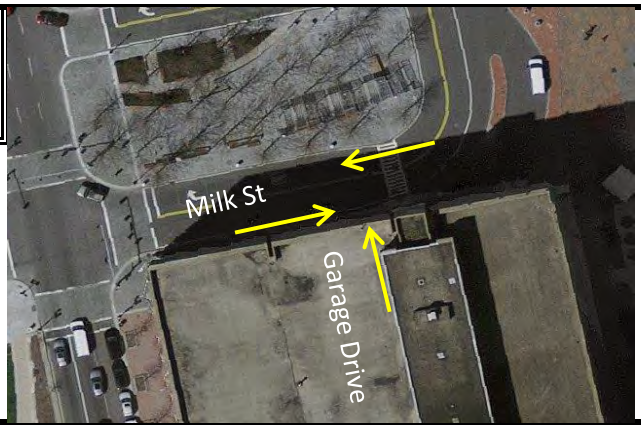
DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Milk Street

MINOR STREET(S) : Garage Driveway

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	357	6	203			**566**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **3,144**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.58)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

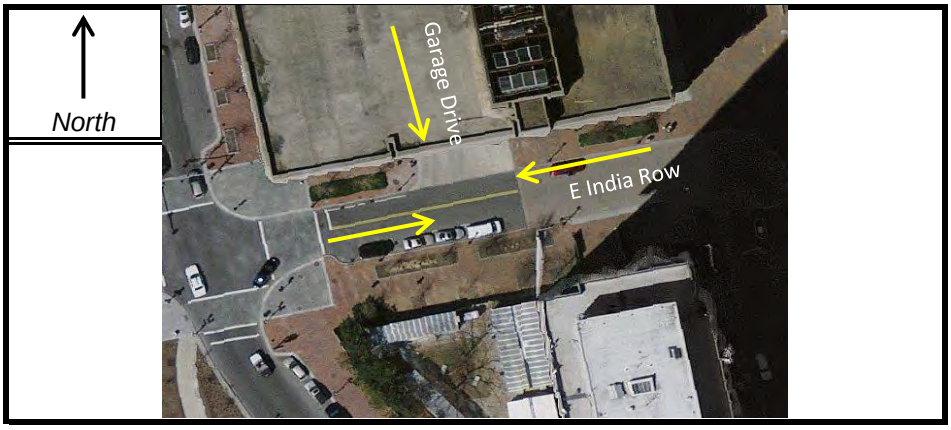
DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : East India Row

MINOR STREET(S) : Garage Driveway

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	SB			
PEAK HOURLY VOLUMES (AM/PM) :	79	43	40			162

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **900**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.58)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

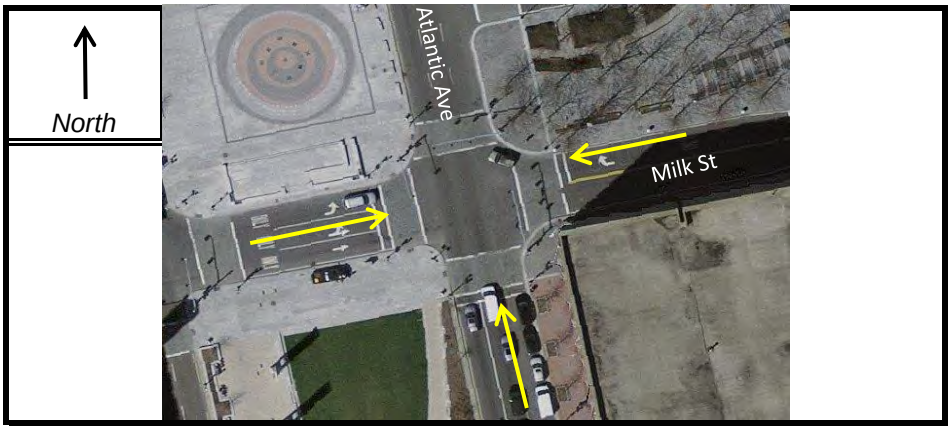
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : Milk Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	504	133	1,553			**2,190**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,167**

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.00**

CRASH RATE CALCULATION : 0.23

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 Average (0.17<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

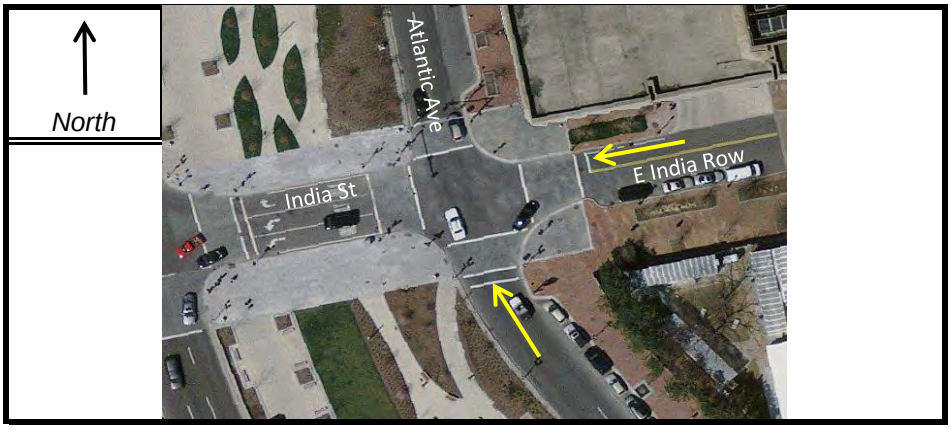
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : India Street / East India Row

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	79	1,784				**1,863**

" K " FACTOR :	**0.180**	INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :	**10,350**
TOTAL # OF CRASHES :	1	# OF YEARS : 3	AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.09**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.13<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

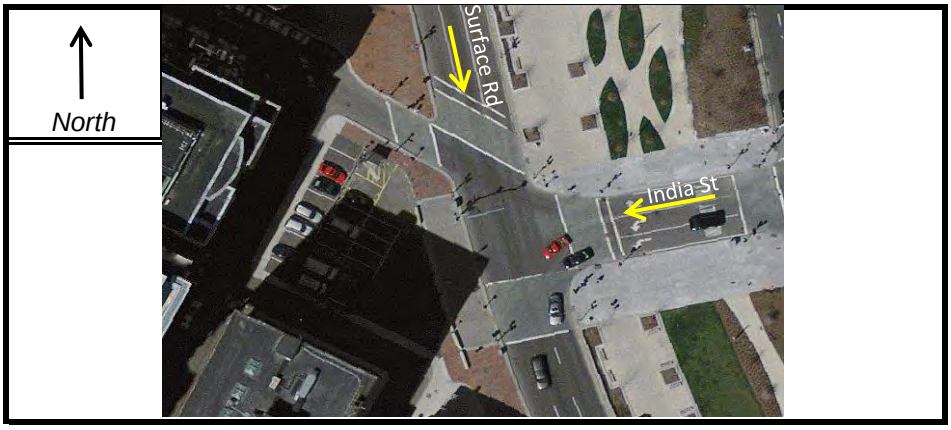
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : India Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	278	906				1,184

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **6,578**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.14**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.10<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

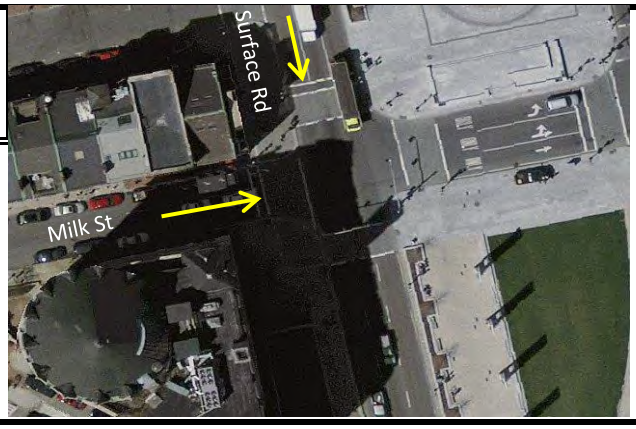
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : Milk Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	241	1,161				1,402

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **7,789**

TOTAL # OF CRASHES : 2

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.67**

CRASH RATE CALCULATION : **0.23**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 Average (0.18<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

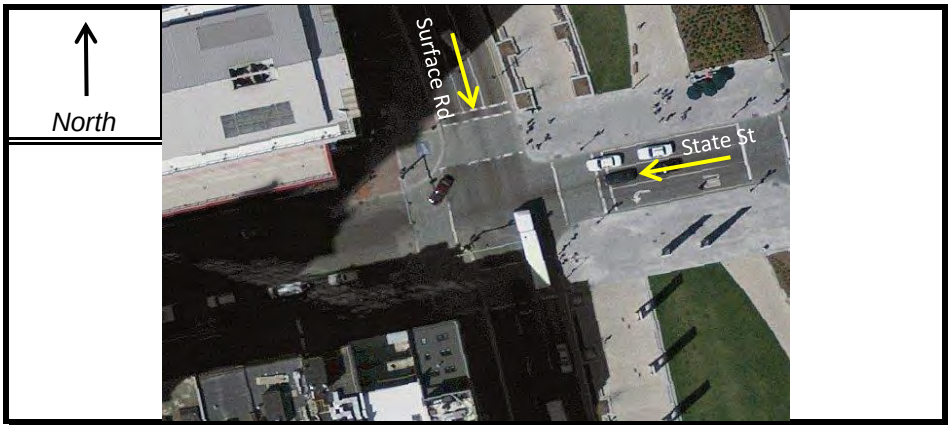
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : State Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	468	1,928				**2,396**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **13,311**

TOTAL # OF CRASHES : 8

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **2.67**

CRASH RATE CALCULATION : 0.55

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.41<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

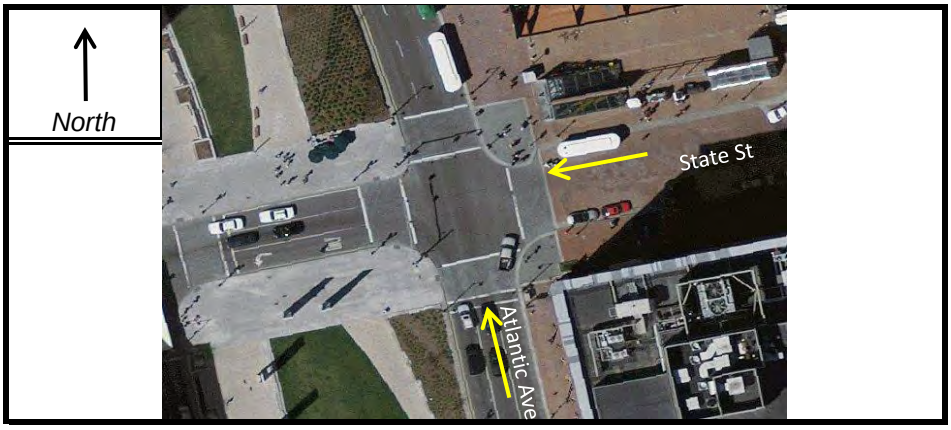
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : State Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	282	1,862				**2,144**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **11,911**

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.00**

CRASH RATE CALCULATION : **0.23**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 Average (0.17<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

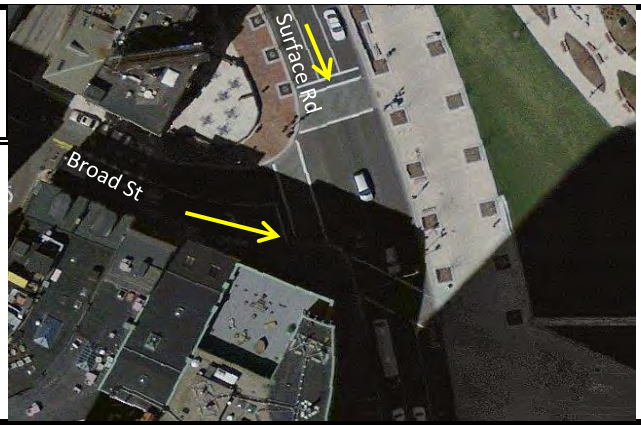
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : Broad Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	139	1,006				**1,145**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **6,361**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road / Purchase Street

MINOR STREET(S) : High Street

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	403	1,145				**1,548**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **8,600**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.11**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.16<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

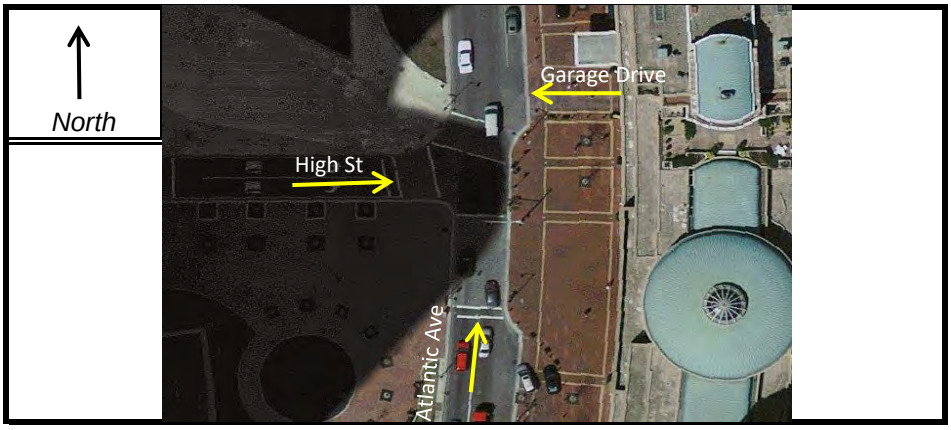
~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : High Street

Garage Driveway

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	424	1,360				**1,784**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **9,911**

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.00**

CRASH RATE CALCULATION : **0.28**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.21<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

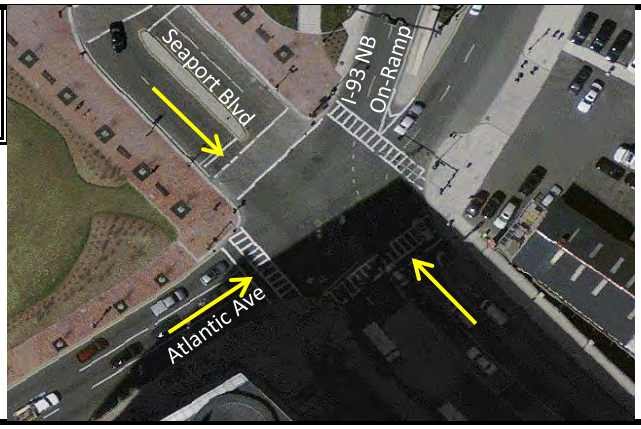
~ INTERSECTION DATA ~

MAJOR STREET : Seaport Boulevard

MINOR STREET(S) : Atlantic Avenue

I-93 Northbound On-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	826	1,262	1,747			**3,835**

" K " FACTOR : **0.180** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **21,306**

TOTAL # OF CRASHES : 12 | # OF YEARS : 3 | AVERAGE # OF CRASHES PER YEAR (**A**) : **4.00**

CRASH RATE CALCULATION : 0.51 RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.55<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

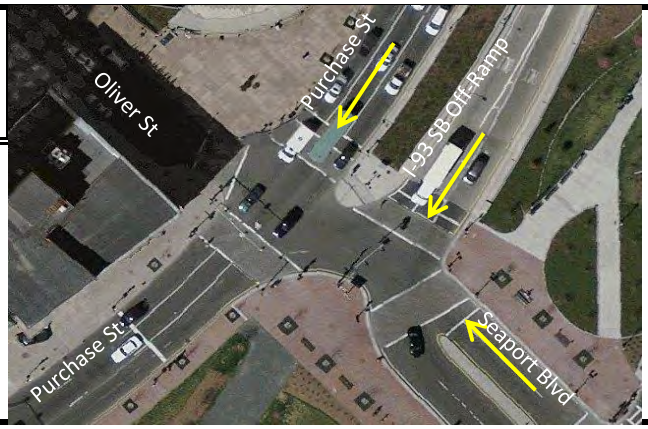
~ INTERSECTION DATA ~

MAJOR STREET : Purchase Street

MINOR STREET(S) : Oliver Street / Seaport Boulevard

I-93 Southbound Off-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB	SWB			
PEAK HOURLY VOLUMES (AM/PM) :	721	1,211	1,490			**3,422**

" K " FACTOR : **0.180** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **19,011**

TOTAL # OF CRASHES : 10 | # OF YEARS : 3 | AVERAGE # OF CRASHES PER YEAR (**A**) : **3.33**

CRASH RATE CALCULATION : **0.48**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.43>0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

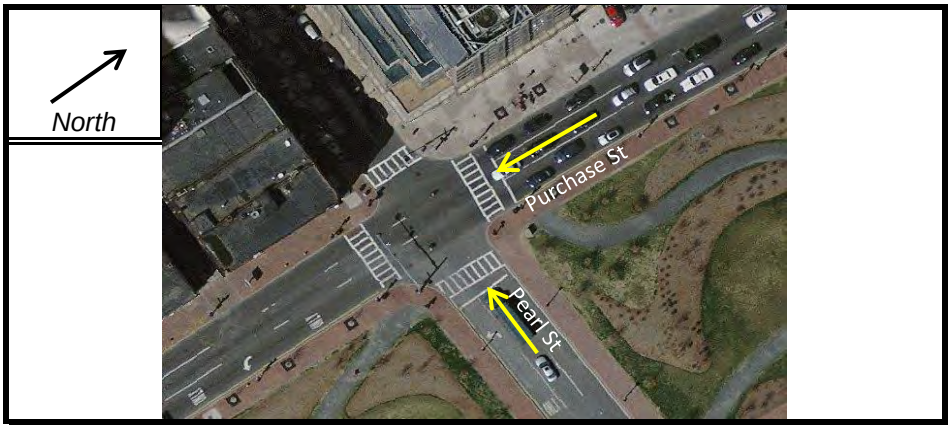
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Purchase Street

MINOR STREET(S) : Pearl Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	568	1,901				**2,469**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **13,717**

TOTAL # OF CRASHES : 2

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.67**

CRASH RATE CALCULATION : **0.13**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.10<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

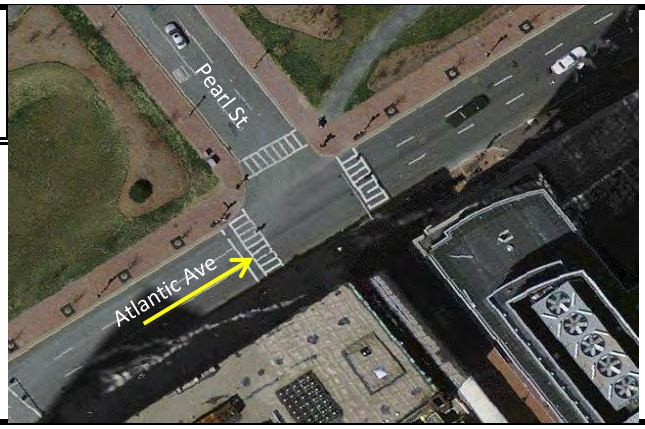
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : Pearl Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB					
PEAK HOURLY VOLUMES (AM/PM) :	2,303					**2,303**

" K " FACTOR :	**0.180**	INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :			**12,794**
TOTAL # OF CRASHES :	0	# OF YEARS :	3	AVERAGE # OF CRASHES PER YEAR (**A**) :	**0.00**

CRASH RATE CALCULATION : **0.00** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.05<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

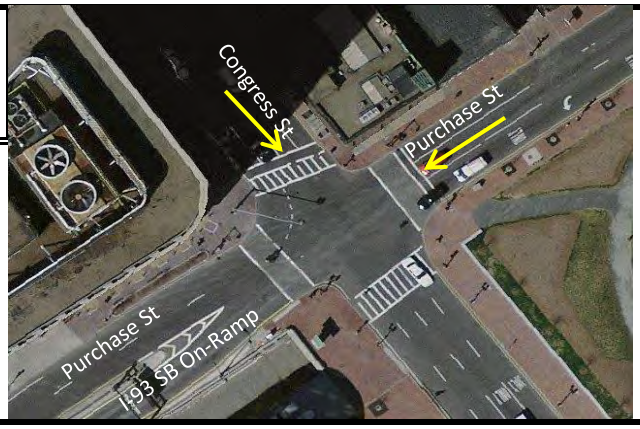
~ INTERSECTION DATA ~

MAJOR STREET : Congress Street

MINOR STREET(S) : Surface Road

I-93 Southbound On-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	2,082	1,846				**3,928**

" K " FACTOR : **0.180** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **21,822**

TOTAL # OF CRASHES : 17 | # OF YEARS : 3 | AVERAGE # OF CRASHES PER YEAR (**A**) : **5.67**

CRASH RATE CALCULATION : **0.71**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 Average (0.69<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

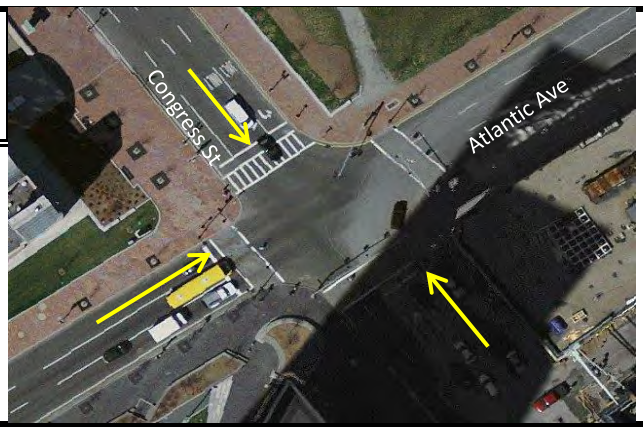
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Congress Street

MINOR STREET(S) : Atlantic Avenue

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	1,487	721	1,295			**3,503**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **19,461**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.05<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

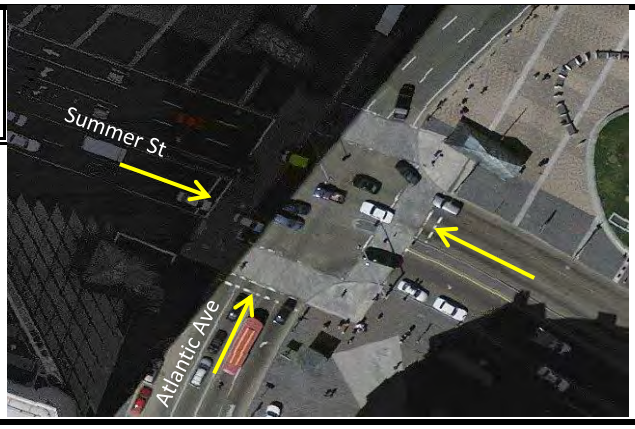
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : Atlantic Avenue

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	647	864	1,586			**3,097**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **17,206**

TOTAL # OF CRASHES : 4

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.33**

CRASH RATE CALCULATION : **0.21**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 Average (0.20<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

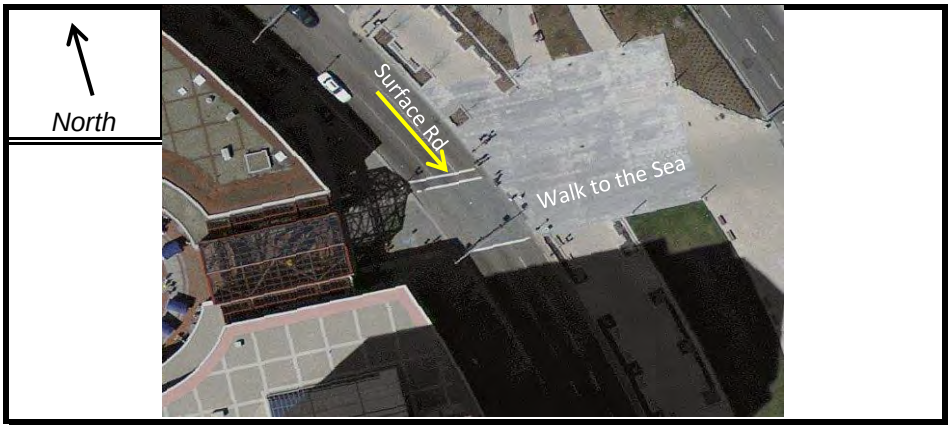
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : Walk to the Sea

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB					
PEAK HOURLY VOLUMES (AM) :	1,926					**1,926**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **21,400**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

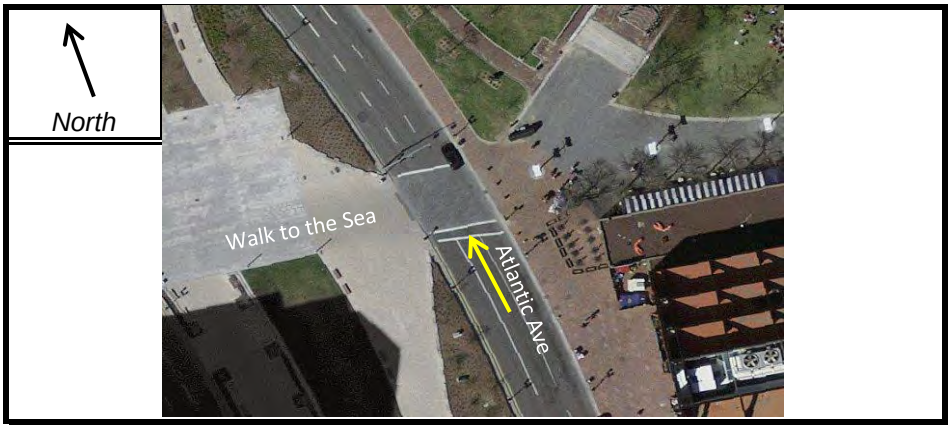
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : Walk to the Sea

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB					
PEAK HOURLY VOLUMES (AM) :	1,549					**1,549**

" K " FACTOR :	**0.180**	INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :			**8,606**
TOTAL # OF CRASHES :	0	# OF YEARS :	3	AVERAGE # OF CRASHES PER YEAR (**A**) :	**0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

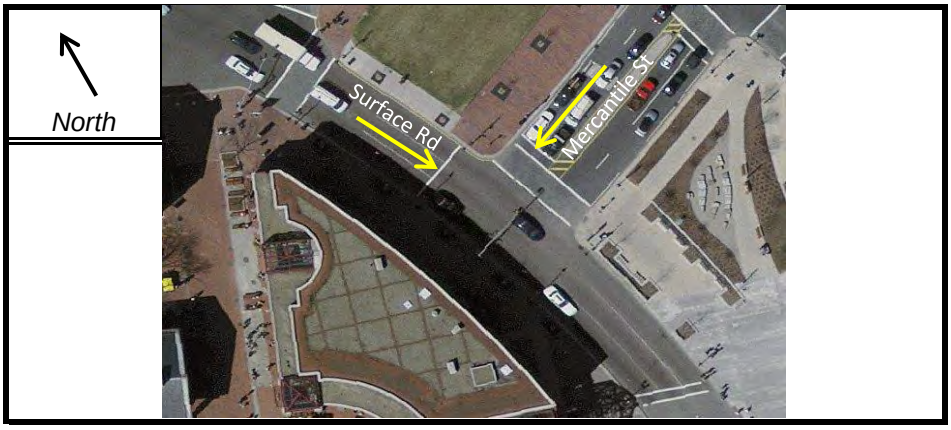
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : Mercantile Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	329	1,855				**2,184**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,133**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.08<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

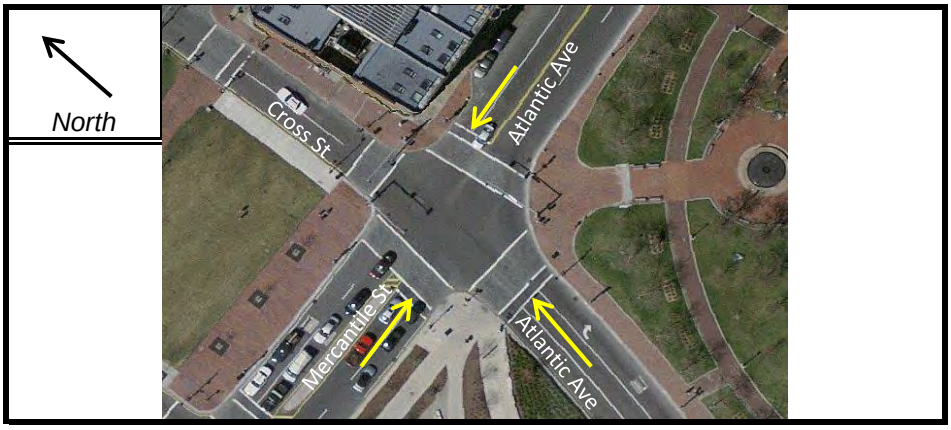
~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : Cross Street

Mercantile Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	349	348	1,528			**2,225**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,361**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.06<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

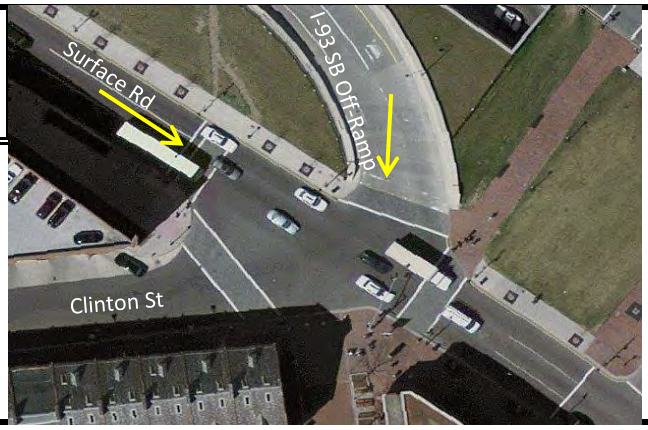
~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : Clinton Street

I-93 Southbound Off-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	1,170	1,076				2,246

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,478**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.07**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.11<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

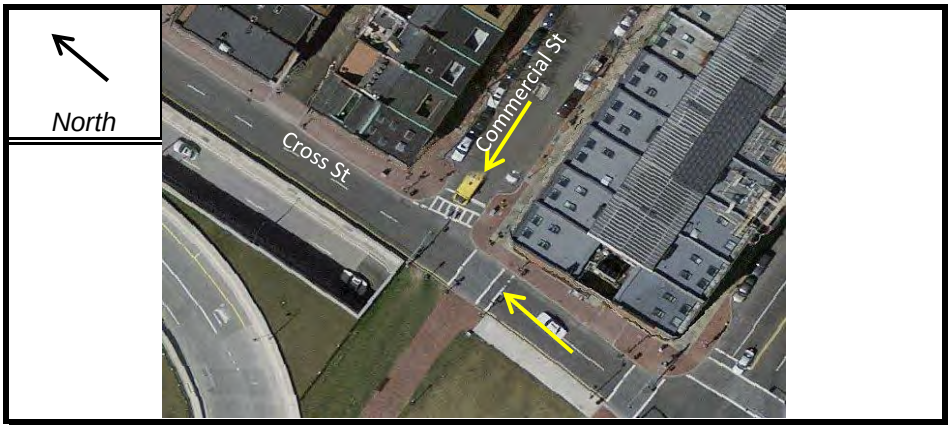
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : Commercial Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	84	949				1,033

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **5,739**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

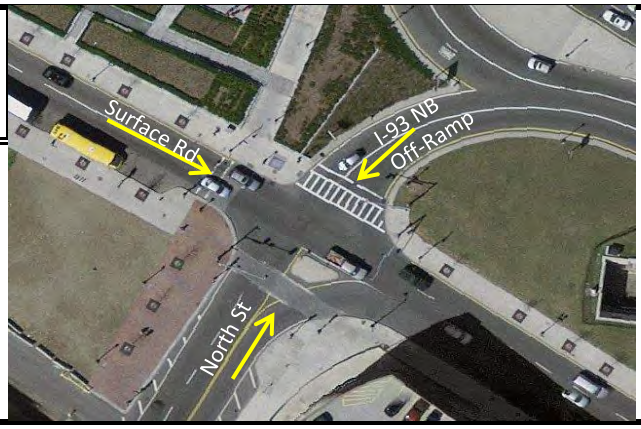
~ INTERSECTION DATA ~

MAJOR STREET : Surface Road

MINOR STREET(S) : North Street

I-93 Northbound Off-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	SB			
PEAK HOURLY VOLUMES (AM/PM) :	223	853	697			1,773

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **9,850**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.09**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.07<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

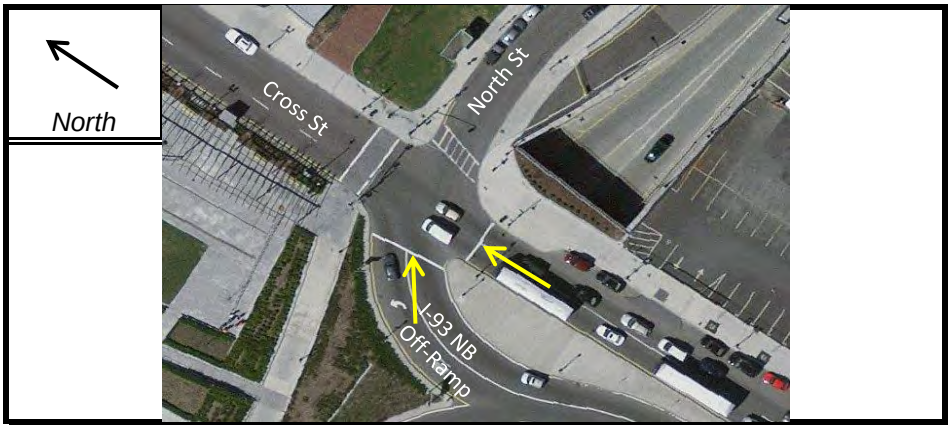
~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : North Street

I-93 Northbound Off-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	WB				
PEAK HOURLY VOLUMES (AM/PM) :	782	981				1,763

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **9,794**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : 0.09

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.07<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

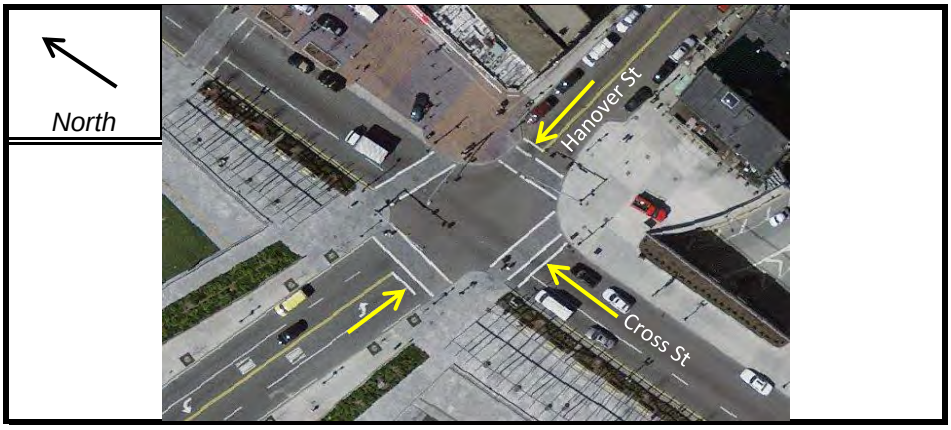
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : Hanover Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	1,638	177	393			**2,208**

" K " FACTOR : **0.180** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,267**

TOTAL # OF CRASHES : 8 | # OF YEARS : 3 | AVERAGE # OF CRASHES PER YEAR (**A**) : **2.67**

CRASH RATE CALCULATION : **0.60**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.45<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : Salem Street

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB					
PEAK HOURLY VOLUMES (AM/PM) :	1,515					**1,515**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **8,417**

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.00**

CRASH RATE CALCULATION : **0.33**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.24<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

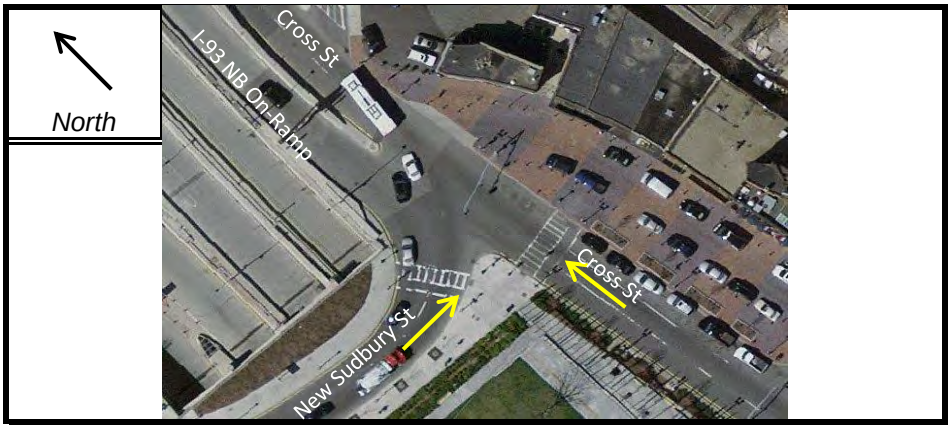
~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : New Sudbury Street

I-93 Northbound On-Ramp

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	769	1,451				2,220

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,333**

TOTAL # OF CRASHES : 4

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.33**

CRASH RATE CALCULATION : 0.30

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.22<0.76)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

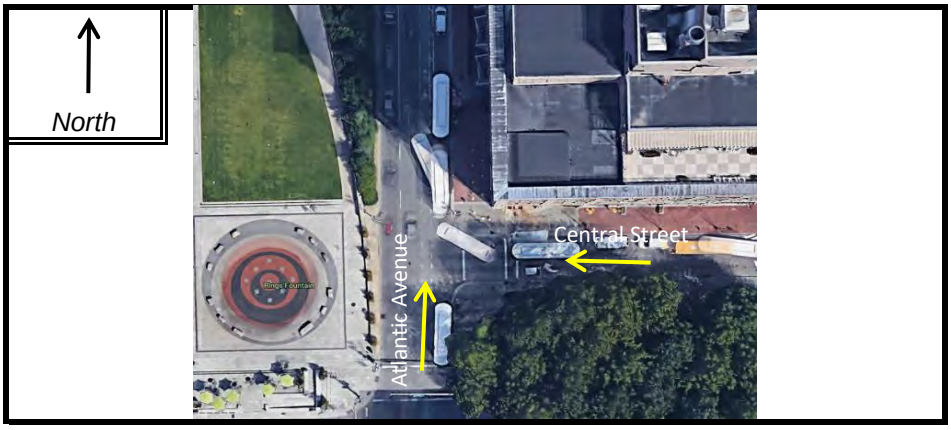
DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Atlantic Avenue

MINOR STREET(S) : Central Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	NB				
PEAK HOURLY VOLUMES (AM/PM) :	94	1,936				**2,030**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **11,278**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.58)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

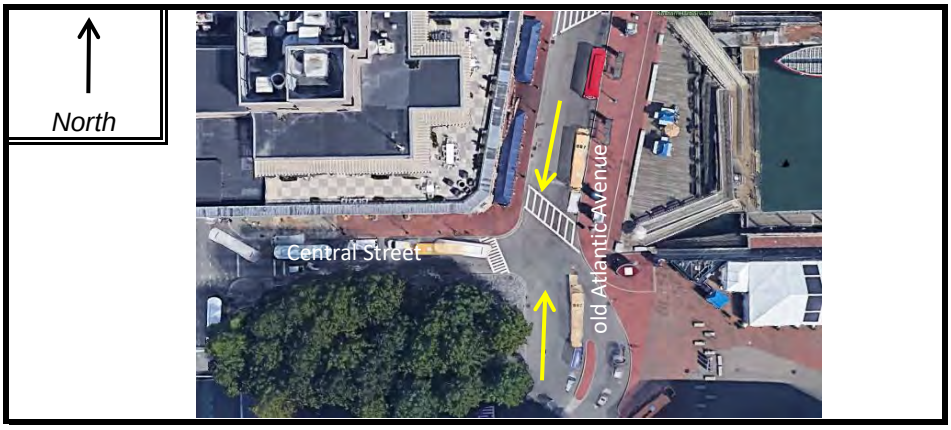
DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Old Atlantic Avenue

MINOR STREET(S) : Central Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	222	21				**243**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **1,350**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.58)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : 6/19/2018

DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : State Street

MINOR STREET(S) : Old Atlantic Avenue

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	85	240	142			**467**

" K " FACTOR : **0.180**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **2,594**

TOTAL # OF CRASHES : 0

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 Average (0.00<0.58)

Project Title & Date: Harbor Garage, 2009004.03, October 2019

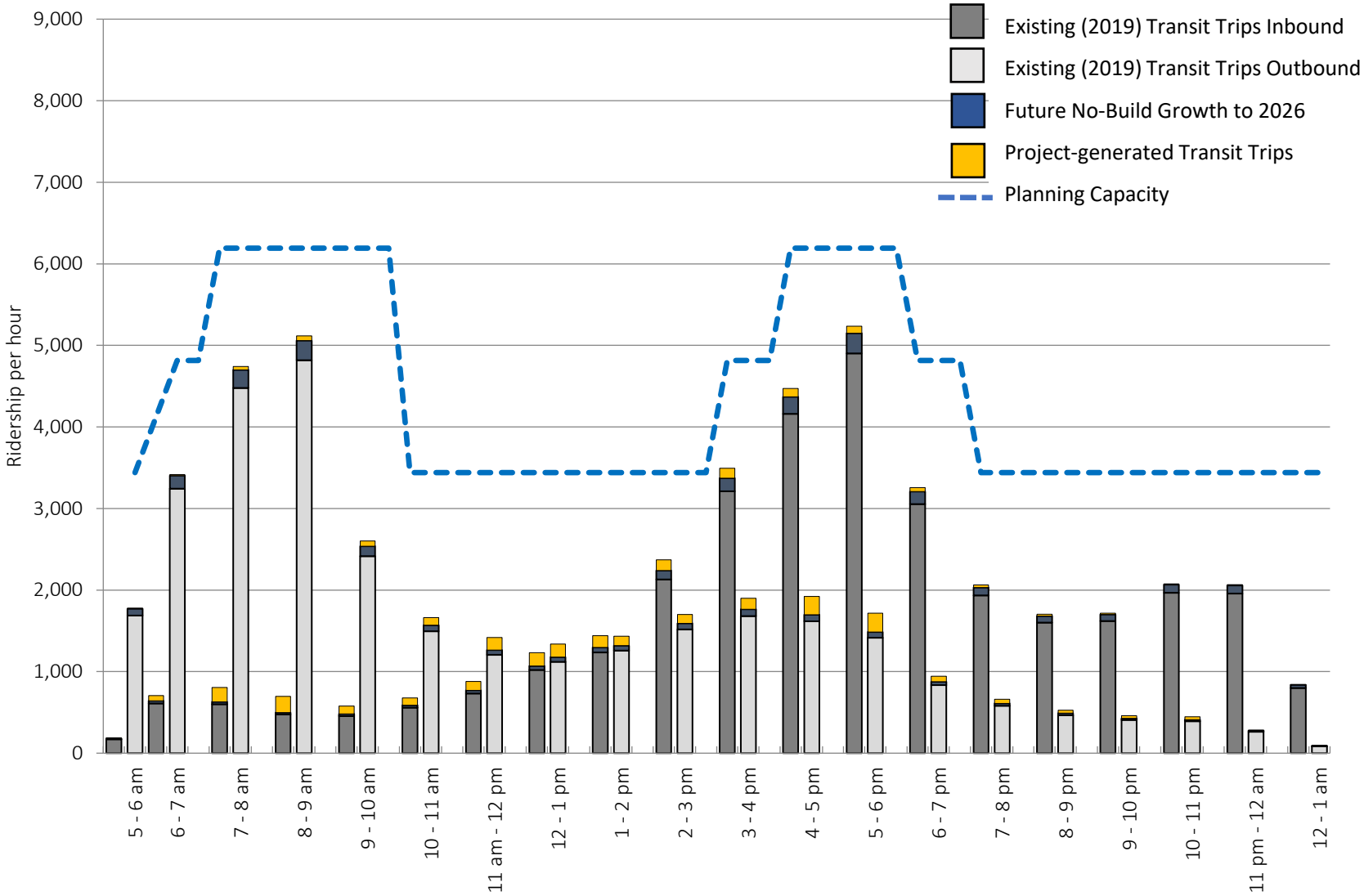
Transit Capacity Analysis

MBTA Rail Flow data (Spring 2018)

Transit Line	Station
Blue	Aquarium

	NB/EB	SB/WB
5:00 AM	170	1676
6:00 AM	607	3219
7:00 AM	596	4446
8:00 AM	472	4785
9:00 AM	454	2398
10:00 AM	555	1485
11:00 AM	728	1197
12:00 PM	1012	1113
1:00 PM	1226	1248
2:00 PM	2116	1505
3:00 PM	3188	1668
4:00 PM	4131	1606
5:00 PM	4869	1406
6:00 PM	3034	829
7:00 PM	1921	578
8:00 PM	1589	464
9:00 PM	1608	404
10:00 PM	1954	389
11:00 PM	1944	260
12:00 AM	792	84

Figure 1. Blue Line - Build (2026) Condition
Hourly Ridership, Weekday
Load Point: Aquarium



Trip Generation - Proposed Program

Harbor Garage

Proposed Trip Generation Assessment

HOWARD STEIN HUDSON
16-Oct-2019

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	Internal Capture Person-Trips[2]	Non-Primary Person-Trips	Primary Person-Trips	Transit Share[3]	Transit Person-Trips	Walk/Bike/ Other Share[3]	Walk/ Bike/ Other Trips	Auto Share[3]	Auto Person-Trips	Private Auto Person-Trips	Assumed Local Auto Occupancy Rate[5]	Total Adjusted Private Auto Trips	Total Adjusted Taxi Trips	Total Adjusted Auto (Private + Taxi) Trips
Daily																					
Multifamily Housing (High Rise)[9]	200	Total		4.450	890	1.18	**1,050**	328	328	**722**	30%	**216**	42%	**304**	28%	**202**	202	1.18	**172**	**0**	**172**
	units	In	50%	2.225	445	1.18	**525**	164	164	**361**	30%	**108**	42%	**152**	28%	**101**	101	1.18	**86**	**0**	**86**
		Out	50%	2.225	445	1.18	**525**	164	164	**361**	30%	**108**	42%	**152**	28%	**101**	101	1.18	**86**	**0**	**86**
Office Building[11]	538	Total		9.740	5,240	1.18	**6,184**	130	130	**6,054**	43%	**2,604**	31%	**1,876**	26%	**1,574**	1,574	1.13	**1,392**	**0**	**1,392**
	KSF	In	50%	4.870	2,620	1.18	**3,092**	65	65	**3,027**	43%	**1,302**	31%	**938**	26%	**787**	787	1.13	**696**	**0**	**696**
		Out	50%	4.870	2,620	1.18	**3,092**	65	65	**3,027**	43%	**1,302**	31%	**938**	26%	**787**	787	1.13	**696**	**0**	**696**
Shopping Center[12]	48	Total		37.750	1,812	1.82	**3,298**	428	428	**2,870**	20%	**574**	59%	**1,694**	21%	**602**	602	1.82	**330**	**0**	**330**
	KSF	In	50%	18.875	906	1.82	**1,649**	214	214	**1,435**	20%	**287**	59%	**847**	21%	**301**	301	1.82	**165**	**0**	**165**
		Out	50%	18.875	906	1.82	**1,649**	214	214	**1,435**	20%	**287**	59%	**847**	21%	**301**	301	1.82	**165**	**0**	**165**
Public Parking Spaces[13]	612	Total		2.540	1,554	1.82	**2,828**	0	0	**2,828**	0%	**0**	100%	**2,828**	100%	**2,828**	2,828	1.82	**1,554**	**0**	**1,554**
Peak Occupancy Spaces		In	50%	1.270	777	1.82	**1,414**	0	0	**1,414**	0%	**0**	100%	**1,414**	100%	**1,414**	1,414	1.82	**777**	**0**	**777**
		Out	50%	1.270	777	1.82	**1,414**	0	0	**1,414**	0%	**0**	100%	**1,414**	100%	**1414**	1,414	1.82	**777**	**0**	**777**
Private Residential Spaces[14]	300	Total		1.300	390	1.18	**460**	0	0	**460**	0%	**0**	0%	**0**	100%	**460**	460	1.18	**390**	**0**	**390**
Peak Occupancy Spaces		In	50%	0.650	195	1.18	**230**	0	0	**230**	0%	**0**	0%	**0**	100%	**230**	230	1.18	**195**	**0**	**195**
		Out	50%	0.650	195	1.18	**230**	0	0	**230**	0%	**0**	0%	**0**	100%	**230**	230	1.18	**195**	**0**	**195**
Total		Total			**9,886**		**13,820**	**886**	**886**	**12,934**		**3,394**		**6,702**		**5,666**	**5,666**		**3,838**	**0**	**3,838**
		In			**4,943**		**6,910**	**443**	**443**	**6,467**		**1,697**		**3,351**		**2,833**	**2,833**		**1,919**	**0**	**1,919**
		Out			**4,943**		**6,910**	**443**	**443**	**6,467**		**1,697**		**3,351**		**2,833**	**2,833**		**1,919**	**0**	**1,919**
AM Peak Hour																					
Multifamily Housing (High Rise)[9]	200	Total		0.310	62	1.13	**70**	2	2	**68**		**18**		**27**		**23**	23	1.13	**20**	**0**	**20**
	units	In	24%	0.074	15	1.13	**17**	0	0	**17**	52%	**9**	7%	**1**	41%	**7**	7	1.13	**6**	**0**	**6**
		Out	76%	0.236	47	1.13	**53**	2	2	**51**	18%	**9**	51%	**26**	31%	**16**	16	1.13	**14**	**0**	**14**
Office Building[11]	538	Total		1.16	624	1.18	**737**	26	26	**711**		**409**		**54**		**248**	248	1.18	**210**	**0**	**210**
	KSF	In	86%	0.998	537	1.18	**634**	10	10	**624**	63%	**393**	5%	**31**	32%	**200**	200	1.18	**169**	**0**	**169**
		Out	14%	0.162	87	1.18	**103**	16	16	**87**	18%	**16**	26%	**23**	56%	**48**	48	1.18	**41**	**0**	**41**
Shopping Center[12]	48	Total		0.94	45	1.82	**82**	26	26	**56**		**18**		**18**		**20**	20	1.82	**11**	**0**	**11**
	KSF	In	62%	0.583	28	1.82	**51**	17	17	**34**	46%	**16**	14%	**5**	40%	**13**	13	1.82	**7**	**0**	**7**
		Out	38%	0.357	17	1.82	**31**	9	9	**22**	10%	**2**	58%	**13**	32%	**7**	7	1.82	**4**	**0**	**4**
Public Parking Spaces[13]	612	Total		0.22	135	1.82	**246**	0	0	**246**		**0**		**246**		**246**	246	1.82	**135**	**0**	**135**
Peak Occupancy Spaces		In	86%	0.189	116	1.82	**211**	0	0	**211**	0%	**0**	100%	**211**	100%	**211**	211	1.82	**116**	**0**	**116**
		Out	14%	0.031	19	1.82	**35**	0	0	**35**	0%	**0**	100%	**35**	100%	**35**	35	1.82	**19**	**0**	**19**
Private Residential Spaces[14]	300	Total		0.11	33	1.18	**39**	0	0	**39**		**0**		**0**		**39**	39	1.18	**33**	**0**	**33**
Peak Occupancy Spaces		In	27%	0.030	9	1.18	**11**	0	0	**11**	0%	**0**	0%	**0**	100%	**11**	11	1.18	**9**	**0**	**9**
		Out	73%	0.080	24	1.18	**28**	0	0	**28**	0%	**0**	0%	**0**	100%	**28**	28	1.18	**24**	**0**	**24**
Total		Total			**899**		**1,174**	**54**	**54**	**1,120**		**445**		**345**		**576**	**576**		**409**	**0**	**409**
		In			**705**		**924**	**27**	**27**	**897**		**418**		**248**		**442**	**442**		**307**	**0**	**307**
		Out			**194**		**250**	**27**	**27**	**223**		**27**		**97**		**134**	**134**		**102**	**0**	**102**
PM Peak Hour																					
Multifamily Housing (High Rise)[9]	200	Total		0.360	72	1.13	**82**	39	39	**43**		**14**		**14**		**15**	15	1.13	**13**	**0**	**13**
	units	In	61%	0.220	44	1.13	**50**	25	25	**25**	18%	**5**	51%	**13**	31%	**7**	7	1.13	**6**	**0**	**6**
		Out	39%	0.140	28	1.13	**32**	14	14	**18**	52%	**9**	7%	**1**	41%	**8**	8	1.13	**7**	**0**	**7**
Office Building[11]	538	Total		1.15	619	1.18	**731**	19	19	**712**		**397**		**59**		**256**	256	1.18	**217**	**0**	**217**
	KSF	In	16%	0.184	99	1.18	**117**	4	4	**113**	18%	**20**	26%	**29**	56%	**64**	64	1.18	**54**	**0**	**54**
		Out	84%	0.966	520	1.18	**614**	15	15	**599**	63%	**377**	5%	**30**	32%	**192**	192	1.18	**163**	**0**	**163**
Shopping Center[12]	48	Total		3.81	183	1.82	**333**	52	52	**281**		**81**		**99**		**101**	101	1.82	**56**	**0**	**56**
	KSF	In	48%	1.829	88	1.82	**160**	26	26	**134**	10%	**13**	58%	**78**	32%	**43**	43	1.82	**24**	**0**	**24**
		Out	52%	1.981	95	1.82	**173**	26	26	**147**	46%	**68**	14%	**21**	40%	**58**	58	1.82	**32**	**0**	**32**
Public Parking Spaces[13]	612	Total		0.28	171	1.82	**311**	0	0	**311**		**0**		**311**		**311**	311	1.82	**171**	**0**	**171**
Peak Occupancy Spaces		In	18%	0.050	31	1.82	**56**	0	0	**56**	0%	**0**	100%	**56**	100%	**56**	56	1.82	**31**	**0**	**31**
		Out	82%	0.230	140	1.82	**255**	0	0	**255**	0%	**0**	100%	**255**	100%	**255**	255	1.82	**140**	**0**	**140**
Private Residential Spaces[14]	300	Total		0.13	39	1.18	**46**	0	0	**46**		**0**		**0**		**46**	46	1.18	**39**	**0**	**39**
Peak Occupancy Spaces		In	62%	0.081	24	1.18	**28**	0	0	**28**	0%	**0**	0%	**0**	100%	**28**	28	1.18	**24**	**0**	**24**
		Out	38%	0.049	15	1.18	**18**	0	0	**18**	0%	**0**	0%	**0**	100%	**18**	18	1.18	**15**	**0**	**15**
Total		Total			**1,084**		**1,503**	**110**	**110**	**1,393**		**492**		**483**		**729**	**729**		**496**	**0**	**496**
		In			**286**		**411**	**55**	**55**	**356**		**38**		**176**		**198**	**198**		**139**	**0**	**139**
		Out			**798**		**1,092**	**55**	**55**	**1,037**		**454**		**307**		**531**	**531**		**357**	**0**	**357**

1. 2017 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Based on ITE Trip Generation Handbook, 3rd Edition method
3. Mode shares based on peak-hour BTD Data for Area 2
4. 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
5. Local vehicle occupancy rates based on 2017 National vehicle occupancy rates
6. For taxi cabs, 1.2 passengers per cab. (2.2 minus 1 driver equals 1.2)
9. ITE Trip Generation Manual, 10th Edition, LUC 222 (Multifamily Housing High-Rise (11+ Floors)), average rate
11. ITE Trip Generation Manual, 10th Edition, LUC 710 (General Office Building), average rate
12. ITE Trip Generation Manual, 10th Edition, LUC 820 (Shopping Center), average rate
13. Based on data provided by Harbor Garage
14. Based on data provided by Interpark

Synchro Intersection Level of Service Reports

- Existing (2018) Condition

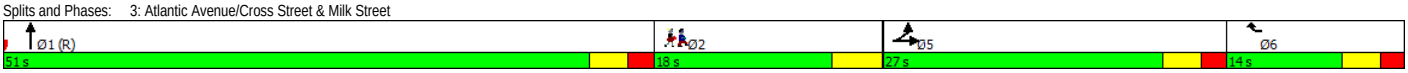
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	99	165	0	0	0	19	0	703	80	0	0	0	
Future Volume (vph)	99	165	0	0	0	19	0	703	80	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								0.99					
Frt						0.865		0.985					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3081	0	0	0	1676	0	2961	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3081	0	0	0	1676	0	2961	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						404		14					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			205			294			151		
Travel Time (s)		4.4			5.6			8.0			4.1		
Confl. Bikes (#/hr)									64				
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	106	177	0	0	0	24	0	725	82	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	106	177	0	0	0	24	0	807	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				8.0		8.0					8.0
Minimum Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (%)	24.5%	24.5%				12.7%		46.4%					16%
Maximum Green (s)	22.0	22.0				9.0		46.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					2.0
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	15.0	15.0				2.0		39.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	23.0	23.0				10.0		47.0					
Actuated g/C Ratio	0.21	0.21				0.09		0.43					
v/c Ratio	0.35	0.27				0.05		0.63					
Control Delay	54.6	50.9				0.2		9.0					
Queue Delay	58.4	14.2				0.0		0.9					
Total Delay	113.0	65.1				0.2		9.9					
LOS	F	E				A		A					
Approach Delay		83.1			0.2			9.9					
Approach LOS		F			A			A					
Queue Length 50th (ft)	85	70				0		64					
Queue Length 95th (ft)	152	110				m0		79					
Internal Link Dist (ft)		81			125			214			71		
Turn Bay Length (ft)													
Base Capacity (vph)	306	644				519		1273					
Starvation Cap Reductn	204	441				0		214					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.04	0.87				0.05		0.76					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 89 (81%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	28	22	139	761	45	0	0	0
Future Volume (vph)	0	0	0	0	28	22	139	761	45	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.94			0.97				
Frt					0.941			0.993				
Flt Protected								0.993				
Satd. Flow (prot)	0	0	0	0	1414	0	0	3107	0	0	0	0
Flt Permitted								0.993				
Satd. Flow (perm)	0	0	0	0	1414	0	0	3099	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					19			13				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			294	
Travel Time (s)		4.7			4.9			15.5			8.0	
Confl. Peds. (#/hr)						71	42		703			
Confl. Bikes (#/hr)						1			65			
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	35	27	143	785	46	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	62	0	0	974	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					24.0		86.0	86.0				
Total Split (s)					24.0		86.0	86.0				
Total Split (%)					21.8%		78.2%	78.2%				
Maximum Green (s)					19.0		81.0	81.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					12.0		74.0	74.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					20.0			82.0				
Actuated g/C Ratio					0.18			0.75				
v/c Ratio					0.23			0.42				
Control Delay					30.8			6.2				
Queue Delay					0.1			0.4				
Total Delay					30.9			6.6				
LOS					C			A				
Approach Delay					30.9			6.6				
Approach LOS					C			A				
Queue Length 50th (ft)					26			106				
Queue Length 95th (ft)					57			218				
Internal Link Dist (ft)		91			99			490			214	
Turn Bay Length (ft)												
Base Capacity (vph)					272			2319				
Starvation Cap Reductn					0			725				
Spillback Cap Reductn					20			6				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.25			0.61				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 86 (78%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 92.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	79	88	0	0	0	0	0	242	33	
Future Volume (vph)	0	0	0	79	88	0	0	0	0	0	242	33	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.982		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3120	1637	0	0	0	0	0	4330	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3120	1637	0	0	0	0	0	4330	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											33		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												38	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	6%	0%	
Adj. Flow (vph)	0	0	0	85	95	0	0	0	0	0	252	34	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	85	95	0	0	0	0	0	286	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				27.0	27.0						62.0		21.0
Total Split (s)				27.0	27.0						62.0		21.0
Total Split (%)				24.5%	24.5%						56.4%		19%
Maximum Green (s)				22.0	22.0						56.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				15.0	15.0						49.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				24.0	24.0						58.0		
Actuated g/C Ratio				0.22	0.22						0.53		
v/c Ratio				0.12	0.27						0.12		
Control Delay				29.7	31.7						1.2		
Queue Delay				1.3	8.1						0.0		
Total Delay				31.0	39.8						1.2		
LOS				C	D						A		
Approach Delay					35.7						1.2		
Approach LOS					D						A		
Queue Length 50th (ft)				18	40						0		
Queue Length 95th (ft)				39	83						0		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				680	357						2298		
Starvation Cap Reductn				452	221						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.37	0.70						0.12		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 100.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	85	14	0	0	0	0	0	0	179	261	0	
Future Volume (vph)	0	85	14	0	0	0	0	0	0	179	261	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.978											
Flt Protected											0.980		
Satd. Flow (prot)	0	3352	0	0	0	0	0	0	0	0	4401	0	
Flt Permitted											0.980		
Satd. Flow (perm)	0	3352	0	0	0	0	0	0	0	0	4401	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		15											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			7										
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	6%	0%	
Adj. Flow (vph)	0	89	15	0	0	0	0	0	0	185	269	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	104	0	0	0	0	0	0	0	0	454	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		29.0								63.0	63.0		18.0
Total Split (s)		29.0								63.0	63.0		18.0
Total Split (%)		26.4%								57.3%	57.3%		16%
Maximum Green (s)		25.0								58.0	58.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								51.0	51.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									59.0		
Actuated g/C Ratio		0.24									0.54		
v/c Ratio		0.13									0.19		
Control Delay		28.8									7.9		
Queue Delay		0.0									0.0		
Total Delay		28.8									7.9		
LOS		C									A		
Approach Delay		28.8									7.9		
Approach LOS		C									A		
Queue Length 50th (ft)		26									24		
Queue Length 95th (ft)		49									34		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		803									2360		
Starvation Cap Reductn		0									0		
Spillback Cap Reductn		1									322		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.13									0.22		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.19			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	61	198	0	0	0	0	0	379	643
Future Volume (vph)	0	0	0	61	198	0	0	0	0	0	379	643
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.68							0.94	
Frt											0.906	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1449	3051	0	0	0	0	0	3881	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	992	3051	0	0	0	0	0	3881	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											416	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				332								158
Confl. Bikes (#/hr)												38
Peak Hour Factor	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	4%	1%
Adj. Flow (vph)	0	0	0	63	204	0	0	0	0	0	387	656
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	63	204	0	0	0	0	0	1043	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				38.0	38.0						72.0	
Total Split (s)				38.0	38.0						72.0	
Total Split (%)				34.5%	34.5%						65.5%	
Maximum Green (s)				29.0	29.0						67.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				22.0	22.0						60.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				30.0	30.0						68.0	
Actuated g/C Ratio				0.27	0.27						0.62	
v/c Ratio				0.16	0.25						0.41	
Control Delay				35.9	36.3						3.3	
Queue Delay				3.9	4.6						0.1	
Total Delay				39.7	41.0						3.4	
LOS				D	D						A	
Approach Delay					40.7						3.4	
Approach LOS					D						A	
Queue Length 50th (ft)				38	62						0	
Queue Length 95th (ft)				74	91						0	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				395	832						2558	
Starvation Cap Reductn				268	550						545	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.50	0.72						0.52	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 90 (82%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 140.8%		ICU Level of Service H	
Analysis Period (min) 15			

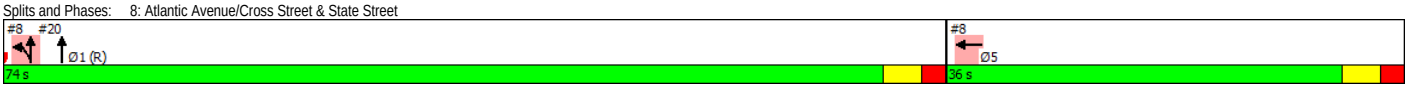
Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	80	39	179	616	50	0	0	0
Future Volume (vph)	0	0	0	0	80	39	179	616	50	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.92			0.96				
Frt					0.956			0.991				
Flt Protected								0.990				
Satd. Flow (prot)	0	0	0	0	1685	0	0	3010	0	0	0	0
Flt Permitted								0.990				
Satd. Flow (perm)	0	0	0	0	1685	0	0	2994	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					13			11				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						160	51		695			
Confl. Bikes (#/hr)									62			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	3%	2%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	87	42	185	635	52	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	129	0	0	872	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					26.0		74.0	74.0				
Total Split (s)					36.0		74.0	74.0				
Total Split (%)					32.7%		67.3%	67.3%				
Maximum Green (s)					31.0		69.0	69.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					14.0		62.0	62.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					32.0			70.0				
Actuated g/C Ratio					0.29			0.64				
v/c Ratio					0.26			0.45				
Control Delay					28.5			5.1				
Queue Delay					0.0			0.4				
Total Delay					28.5			5.6				
LOS					C			A				
Approach Delay					28.5			5.6				
Approach LOS					C			A				
Queue Length 50th (ft)					62			50				
Queue Length 95th (ft)					113			58				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					499			1919				
Starvation Cap Reductn					0			539				
Spillback Cap Reductn					0			140				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.26			0.63				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	77	0	0	321	0	
Future Volume (vph)	0	77	0	0	321	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Ped Bike Factor							
Frt		0.865					
Flt Protected							
Satd. Flow (prot)	0	1484	0	0	4446	0	
Flt Permitted							
Satd. Flow (perm)	0	1484	0	0	4446	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		641					
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						40	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96	
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	
Adj. Flow (vph)	0	84	0	0	334	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	84	0	0	334	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		23.0			65.0		22.0
Total Split (s)		23.0			65.0		22.0
Total Split (%)		20.9%			59.1%		20%
Maximum Green (s)		19.0			59.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		12.0			52.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		19.0			61.0		
Actuated g/C Ratio		0.17			0.55		
v/c Ratio		0.11			0.14		
Control Delay		0.3			4.9		
Queue Delay		0.0			0.0		
Total Delay		0.3			4.9		
LOS		A			A		
Approach Delay	0.3				4.9		
Approach LOS	A				A		
Queue Length 50th (ft)		0			22		
Queue Length 95th (ft)		0			31		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		786			2465		
Starvation Cap Reductn		0			0		
Spillback Cap Reductn		0			0		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.11			0.14		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 7 (6%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.14			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 20.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	95	143	0	0	0	0	0	0	80	318	0	
Future Volume (vph)	0	95	143	0	0	0	0	0	0	80	318	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		0.99											
Frt		0.910											
Flt Protected											0.990		
Satd. Flow (prot)	0	3310	0	0	0	0	0	0	0	0	4435	0	
Flt Permitted											0.990		
Satd. Flow (perm)	0	3310	0	0	0	0	0	0	0	0	4435	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		147											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			2										
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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	5%	0%	
Adj. Flow (vph)	0	98	147	0	0	0	0	0	0	83	331	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	245	0	0	0	0	0	0	0	0	414	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		30.0								61.0	61.0		19.0
Total Split (s)		30.0								61.0	61.0		19.0
Total Split (%)		27.3%								55.5%	55.5%		17%
Maximum Green (s)		25.0								56.0	56.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								49.0	49.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									57.0		
Actuated g/C Ratio		0.24									0.52		
v/c Ratio		0.27									0.18		
Control Delay		14.7									4.4		
Queue Delay		0.0									0.3		
Total Delay		14.7									4.7		
LOS		B									A		
Approach Delay		14.7									4.7		
Approach LOS		B									A		
Queue Length 50th (ft)		28									10		
Queue Length 95th (ft)		62									14		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		894									2298		
Starvation Cap Reductn		0									1274		
Spillback Cap Reductn		2									22		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.27									0.40		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	175	0	0	770	0	0	
Future Volume (vph)	175	0	0	770	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3120	0	0	3127	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3120	0	0	3127	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.94	0.94	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	186	0	0	794	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	186	0	0	794	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.33			0.44			
Control Delay	33.9			9.6			
Queue Delay	2.5			0.0			
Total Delay	36.4			9.6			
LOS	D			A			
Approach Delay	36.4			9.6			
Approach LOS	D			A			
Queue Length 50th (ft)	63			102			
Queue Length 95th (ft)	101			123			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	567			1819			
Starvation Cap Reductn	269			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.62			0.44			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	22	730	369	165	229	91	219	519	257		
Future Volume (vph)	6	22	730	369	165	229	91	219	519	257		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.98			
Frt					0.850	0.850			0.952			
Flt Protected			0.998					0.950	0.999			
Satd. Flow (prot)	0	0	3319	1489	1323	1427	0	1435	2876	0		
Flt Permitted			0.947					0.950	0.999			
Satd. Flow (perm)	0	0	3149	1489	1323	1427	0	1435	2876	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					14	14				64		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.99	0.99	0.99	0.99		
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	4%	4%	5%		
Adj. Flow (vph)	6	22	745	380	170	236	92	221	524	260		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	773	380	170	236	0	291	806	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Perm	Split	NA			
Protected Phases			5	5	5	5		1	1		2	6
Permitted Phases	2 5	2 5	2				1					
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		7.0	4.0
Minimum Split (s)			29.0	29.0	29.0	29.0	39.0	39.0	39.0		26.0	6.0
Total Split (s)			39.0	39.0	39.0	39.0	39.0	39.0	39.0		26.0	6.0
Total Split (%)			35.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%		24%	5%
Maximum Green (s)			32.5	32.5	32.5	32.5	32.5	32.5	32.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			15.5	15.5	15.5	15.5	24.5	24.5	24.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			48.1	33.5	33.5	33.5		38.7	38.7			
Actuated g/C Ratio			0.44	0.30	0.30	0.30		0.35	0.35			
v/c Ratio			0.54	0.84	0.42	0.54		0.58	0.80			
Control Delay			5.5	53.6	34.5	37.5		22.7	26.4			
Queue Delay			3.4	52.9	0.0	0.0		0.0	0.0			
Total Delay			8.9	106.5	34.5	37.5		22.7	26.4			
LOS			A	F	C	D		C	C			
Approach Delay			8.9	70.2					25.4			
Approach LOS			A	E					C			
Queue Length 50th (ft)			16	274	104	145		78	107			
Queue Length 95th (ft)			m16	#453	176	232		134	#407			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1426	453	402	434		505	1011			
Starvation Cap Reductn			539	0	0	0		0	0			
Spillback Cap Reductn			0	118	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			0.87	1.13	0.42	0.54		0.58	0.80			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 52 (47%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 33.9		Intersection LOS: C	
Intersection Capacity Utilization 78.5%		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: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	274	186	358	103	758	358	97	
Future Volume (vph)	274	186	358	103	758	358	97	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			0.99					
Frt			0.967			0.968		
Flt Protected		0.971			0.950	0.962		
Satd. Flow (prot)	0	3007	4323	0	1608	1577	0	
Flt Permitted		0.971			0.950	0.962		
Satd. Flow (perm)	0	3007	4323	0	1608	1577	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			62					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				38				
Peak Hour Factor	0.97	0.97	0.95	0.95	0.99	0.99	0.99	
Heavy Vehicles (%)	1%	2%	4%	1%	1%	1%	1%	
Adj. Flow (vph)	282	192	377	108	766	362	98	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	474	485	0	766	460	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (%)	19.1%	19.1%	27.3%		35.5%	35.5%		18%
Maximum Green (s)	14.0	14.0	25.5		34.0	34.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	18.5		27.0	27.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	26.5		55.0	35.0		
Actuated g/C Ratio		0.15	0.24		0.50	0.32		
v/c Ratio		1.25dl	0.45		0.95	0.92		
Control Delay		86.9	23.9		49.6	61.5		
Queue Delay		6.3	0.0		0.0	0.0		
Total Delay		93.2	23.9		49.6	61.5		
LOS		F	C		D	E		
Approach Delay		93.2	23.9			54.0		
Approach LOS		F	C			D		
Queue Length 50th (ft)		~192	101		498	311		
Queue Length 95th (ft)		m#264	140		#767	#508		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		437	1088		804	501		
Starvation Cap Reductn		22	0		0	0		
Spillback Cap Reductn		0	0		0	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.14	0.45		0.95	0.92		

Intersection Summary

Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 47 (43%), Referenced to phase 1:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 55.8	Intersection LOS: E
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

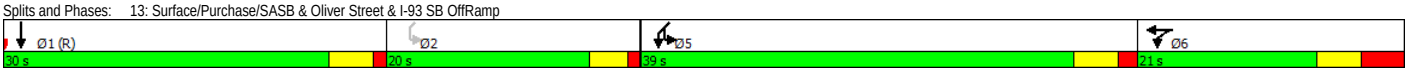
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	60	330	0	0	0	0	0	895	95	
Future Volume (vph)	0	0	0	60	330	0	0	0	0	0	895	95	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.986		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3141	0	0	0	0	0	4505	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3141	0	0	0	0	0	4505	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											26		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												36	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	67	367	0	0	0	0	0	913	97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	67	367	0	0	0	0	0	1010	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				28.0	28.0						64.0		18.0
Total Split (s)				28.0	28.0						64.0		18.0
Total Split (%)				25.5%	25.5%						58.2%		16%
Maximum Green (s)				23.0	23.0						60.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				16.0	16.0						53.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				24.0	24.0						61.0		
Actuated g/C Ratio				0.22	0.22						0.55		
v/c Ratio				0.20	0.54						0.40		
Control Delay				49.9	55.1						13.5		
Queue Delay				0.0	8.1						0.4		
Total Delay				49.9	63.2						13.9		
LOS				D	E						B		
Approach Delay					61.1						13.9		
Approach LOS					E						B		
Queue Length 50th (ft)				50	144						150		
Queue Length 95th (ft)				97	195						m168		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				336	685						2509		
Starvation Cap Reductn				0	273						852		
Spillback Cap Reductn				0	0						101		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.20	0.89						0.61		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 40 (36%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	390	1086	0	0	
Future Volume (vph)	0	0	390	1086	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.987			
Satd. Flow (prot)	0	0	0	4476	0	0	
Flt Permitted				0.987			
Satd. Flow (perm)	0	0	0	4476	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	
Adj. Flow (vph)	0	0	406	1131	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1537	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.43			
Control Delay				7.4			
Queue Delay				2.2			
Total Delay				9.6			
LOS				A			
Approach Delay				9.6			
Approach LOS				A			
Queue Length 50th (ft)				147			
Queue Length 95th (ft)				179			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3540			
Starvation Cap Reductn				1804			
Spillback Cap Reductn				173			
Storage Cap Reductn				0			
Reduced v/c Ratio				0.89			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	534	226	139	419	326	210	
Future Volume (vph)	534	226	139	419	326	210	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3079	1454	1391	1716	1577	1621	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3079	1454	1391	1716	1577	1621	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	
Heavy Vehicles (%)	2%	0%	1%	1%	3%	2%	
Adj. Flow (vph)	545	231	142	432	336	216	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	545	231	142	432	336	216	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	36.0	36.0	36.0	47.0	47.0	47.0	20.0
Total Split (s)	43.0	43.0	43.0	47.0	47.0	47.0	20.0
Total Split (%)	39.1%	39.1%	39.1%	42.7%	42.7%	42.7%	18%
Maximum Green (s)	38.0	38.0	38.0	42.0	42.0	42.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	35.0	35.0	35.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	40.0	38.0	40.0	44.0	44.0	44.0	
Actuated g/C Ratio	0.36	0.35	0.36	0.40	0.40	0.40	
v/c Ratio	0.49	0.46	0.28	0.63	0.53	0.33	
Control Delay	28.9	31.7	26.7	12.6	9.8	5.4	
Queue Delay	0.6	0.0	0.0	0.6	0.9	1.0	
Total Delay	29.5	31.7	26.7	13.2	10.7	6.4	
LOS	C	C	C	B	B	A	
Approach Delay	29.6					10.9	
Approach LOS	C					B	
Queue Length 50th (ft)	154	126	70	227	38	14	
Queue Length 95th (ft)	207	201	122	417	269	20	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1119	502	505	686	630	648	
Starvation Cap Reductn	0	0	0	64	112	236	
Spillback Cap Reductn	247	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.63	0.46	0.28	0.69	0.65	0.52	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	429	524	0	0	0	415	0	632	141	0	0	0	
Future Volume (vph)	429	524	0	0	0	415	0	632	141	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.60							0.91					
Frt						0.850		0.973					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	3962	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1783	3079	0	0	0	2448	0	3962	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	568					568			1035				
Confl. Bikes (#/hr)						4			82				
Peak Hour Factor	0.98	0.98	0.98	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	5%	4%	0%	0%	0%	
Adj. Flow (vph)	438	535	0	0	0	437	0	665	148	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	438	535	0	0	0	437	0	813	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					26.0		37.0					20.0
Total Split (s)	27.0					26.0		37.0					20.0
Total Split (%)	24.5%					23.6%		33.6%					18%
Maximum Green (s)	22.0					21.0		32.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						14.0		25.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	23.0	69.0				22.0		34.0					
Actuated g/C Ratio	0.21	0.63				0.20		0.31					
v/c Ratio	0.70	0.28				0.89		0.66					
Control Delay	40.9	4.9				65.0		22.9					
Queue Delay	10.2	0.4				0.0		1.4					
Total Delay	51.1	5.3				65.0		24.3					
LOS	D	A				E		C					
Approach Delay		25.9			65.0			24.3					
Approach LOS		C			E			C					
Queue Length 50th (ft)	162	72				172		134					
Queue Length 95th (ft)	218	65				#273		156					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	624	1931				489		1224					
Starvation Cap Reductn	157	862				0		0					
Spillback Cap Reductn	0	0				0		226					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	0.94	0.50				0.89		0.81					

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 78 (71%), Referenced to phase 1:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 33.0 Intersection LOS: C
Intersection Capacity Utilization 76.7% 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.

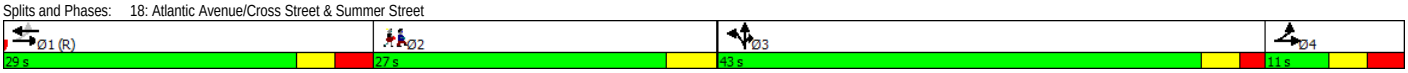
Splits and Phases: 17: Atlantic Avenue/Cross Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	46	336	0	0	299	175	178	552	293	0	0	0	
Future Volume (vph)	46	336	0	0	299	175	178	552	293	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.945				0.850				
Flt Protected		0.994					0.950	0.998					
Satd. Flow (prot)	0	3199	0	0	3998	0	1449	2889	1439	0	0	0	
Flt Permitted		0.815					0.950	0.998					
Satd. Flow (perm)	0	2623	0	0	3998	0	1449	2889	1439	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						31			56				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92	
Heavy Vehicles (%)	8%	0%	0%	0%	1%	2%	2%	4%	1%	0%	0%	0%	
Adj. Flow (vph)	49	357	0	0	322	188	196	607	322	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	406	0	0	510	0	176	627	322	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				29.0		43.0	43.0	43.0				27.0
Total Split (s)	11.0				29.0		43.0	43.0	43.0				27.0
Total Split (%)	10.0%				26.4%		39.1%	39.1%	39.1%				25%
Maximum Green (s)	5.0				23.0		38.0	38.0	38.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				16.0		31.0	31.0	31.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		32.0			25.0		39.0	39.0	39.0				
Actuated g/C Ratio		0.29			0.23		0.35	0.35	0.35				
v/c Ratio		0.51			0.56		0.34	0.61	0.63				
Control Delay		32.6			40.4		28.5	32.4	36.2				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		32.6			40.4		28.5	32.4	36.2				
LOS		C			D		C	C	D				
Approach Delay		32.6			40.4			32.9					
Approach LOS		C			D			C					
Queue Length 50th (ft)		115			117		100	198	187				
Queue Length 95th (ft)		160			156		164	263	288				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		799			908		513	1024	510				
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		0.51			0.56		0.34	0.61	0.63				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 34.7		Intersection LOS: C	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	1022	0	
Future Volume (vph)	0	0	0	0	1022	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5085	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5085	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	
Adj. Flow (vph)	0	0	0	0	1043	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	1043	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					81.0		29.0
Total Split (s)					81.0		29.0
Total Split (%)					73.6%		26%
Maximum Green (s)					76.0		23.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					69.0		16.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					77.0		
Actuated g/C Ratio					0.70		
v/c Ratio					0.29		
Control Delay					3.2		
Queue Delay					0.3		
Total Delay					3.4		
LOS					A		
Approach Delay					3.4		
Approach LOS					A		
Queue Length 50th (ft)					46		
Queue Length 95th (ft)					53		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3559		
Starvation Cap Reductn					1603		
Spillback Cap Reductn					0		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.53		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 3.4		Intersection LOS: A	
Intersection Capacity Utilization 23.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations			↑↑				
Traffic Volume (vph)	0	0	655	0	0	0	
Future Volume (vph)	0	0	655	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3505	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3505	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	
Adj. Flow (vph)	0	0	675	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	675	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			74.0				26.0
Total Split (s)			74.0				36.0
Total Split (%)			67.3%				33%
Maximum Green (s)			69.0				31.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			62.0				14.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			70.0				
Actuated g/C Ratio			0.64				
v/c Ratio			0.30				
Control Delay			1.8				
Queue Delay			0.2				
Total Delay			2.1				
LOS			A				
Approach Delay			2.1				
Approach LOS			A				
Queue Length 50th (ft)			16				
Queue Length 95th (ft)			21				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2230				
Starvation Cap Reductn			757				
Spillback Cap Reductn			0				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.46				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	154	0	0	0	130	868
Future Volume (vph)	154	0	0	0	130	868
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.97					0.99
Frt						
Flt Protected	0.950					0.994
Satd. Flow (prot)	2929	0	0	0	0	4549
Flt Permitted	0.950					0.994
Satd. Flow (perm)	2849	0	0	0	0	4517
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	19				124	
Peak Hour Factor	0.96	0.96	0.92	0.92	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	0%	2%	2%
Adj. Flow (vph)	160	0	0	0	131	877
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	0	0	0	0	1008
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	29.0				81.0	81.0
Total Split (s)	29.0				81.0	81.0
Total Split (%)	26.4%				73.6%	73.6%
Maximum Green (s)	23.0				76.0	76.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	16.0				69.0	69.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	24.0					77.0
Actuated g/C Ratio	0.22					0.70
v/c Ratio	0.25					0.32
Control Delay	8.2					1.7
Queue Delay	0.4					0.2
Total Delay	8.6					1.9
LOS	A					A
Approach Delay	8.6					1.9
Approach LOS	A					A
Queue Length 50th (ft)	8					29
Queue Length 95th (ft)	12					20
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	639					3184
Starvation Cap Reductn	203					1188
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.37					0.51

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 2.9		Intersection LOS: A	
Intersection Capacity Utilization 35.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	24	106	0	0	139	20	15	398	242	0	0	0	
Future Volume (vph)	24	106	0	0	139	20	15	398	242	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.99								
Frt					0.983				0.850				
Flt Protected		0.991						0.998					
Satd. Flow (prot)	0	3063	0	0	1544	0	0	3122	1454	0	0	0	
Flt Permitted		0.884						0.998					
Satd. Flow (perm)	0	2732	0	0	1544	0	0	3122	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					6								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Peds. (#/hr)						16							
Confl. Bikes (#/hr)						29			60				
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	2%	0%	0%	5%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	25	110	0	0	143	21	15	410	249	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	135	0	0	164	0	0	425	249	0	0	0	
Turn Type	Perm	NA			NA		Split	NA	Prot				
Protected Phases		5			5		1	1	1				2
Permitted Phases	5												
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (%)	24.5%	24.5%			24.5%		55.5%	55.5%	55.5%				20%
Maximum Green (s)	22.0	22.0			22.0		56.0	56.0	56.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	15.0	15.0			15.0		49.0	49.0	49.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		23.0			23.0			57.0	57.0				
Actuated g/C Ratio		0.21			0.21			0.52	0.52				
v/c Ratio		0.24			0.50			0.26	0.33				
Control Delay		43.8			43.1			17.7	19.2				
Queue Delay		1.9			0.0			0.6	1.2				
Total Delay		45.7			43.1			18.3	20.4				
LOS		D			D			B	C				
Approach Delay		45.7			43.1			19.1					
Approach LOS		D			D			B					
Queue Length 50th (ft)		53			99			66	74				
Queue Length 95th (ft)		88			169			105	128				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		571			327			1617	753				
Starvation Cap Reductn		310			0			802	309				
Spillback Cap Reductn		0			0			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.52			0.50			0.52	0.56				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 71 (65%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	443	175	0	0	0	0	0	555	90	
Future Volume (vph)	0	0	0	443	175	0	0	0	0	0	555	90	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.979		
Flt Protected				0.950	0.979								
Satd. Flow (prot)	0	0	0	1614	1767	0	0	0	0	0	4438	0	
Flt Permitted				0.950	0.979								
Satd. Flow (perm)	0	0	0	1614	1767	0	0	0	0	0	4438	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											28		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												44	
Peak Hour Factor	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	452	179	0	0	0	0	0	566	92	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	316	315	0	0	0	0	0	658	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				51.0	51.0						35.0		24.0
Total Split (s)				51.0	51.0						35.0		24.0
Total Split (%)				46.4%	46.4%						31.8%		22%
Maximum Green (s)				46.0	46.0						29.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				39.0	39.0						22.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				48.0	48.0						31.0		
Actuated g/C Ratio				0.44	0.44						0.28		
v/c Ratio				0.45	0.41						0.52		
Control Delay				24.3	23.3						28.6		
Queue Delay				0.0	0.0						0.0		
Total Delay				24.3	23.3						28.6		
LOS				C	C						C		
Approach Delay					23.8						28.6		
Approach LOS					C						C		
Queue Length 50th (ft)				161	156						113		
Queue Length 95th (ft)				244	235						174		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				704	771						1270		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.45	0.41						0.52		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 4 (4%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	62	442	0	0	0
Future Volume (vph)	0	62	442	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3124	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3124	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		436				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.91	0.91	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	68	465	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	68	465	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		33.0	77.0			
Total Split (s)		33.0	77.0			
Total Split (%)		30.0%	70.0%			
Maximum Green (s)		29.0	72.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		22.0	65.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		29.0	72.0			
Actuated g/C Ratio		0.26	0.65			
v/c Ratio		0.09	0.23			
Control Delay		0.3	1.8			
Queue Delay		0.0	0.3			
Total Delay		0.3	2.2			
LOS		A	A			
Approach Delay	0.3		2.2			
Approach LOS	A		A			
Queue Length 50th (ft)		0	18			
Queue Length 95th (ft)		0	23			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		718	2044			
Starvation Cap Reductn		0	972			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.09	0.43			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 68 (62%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.23			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 27.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	99	247	322	0	0	0	0	0	299	63
Future Volume (vph)	0	0	99	247	322	0	0	0	0	0	299	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.97	
Frt			0.865								0.974	
Flt Protected					0.979							
Satd. Flow (prot)	0	0	1465	0	3136	0	0	0	0	0	2985	0
Flt Permitted					0.979							
Satd. Flow (perm)	0	0	1465	0	3136	0	0	0	0	0	2985	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											23	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												135
Confl. Bikes (#/hr)												40
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	1%	2%	1%	0%	0%	0%	0%	0%	3%	2%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	104	255	332	0	0	0	0	0	302	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	104	0	587	0	0	0	0	0	366	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			73.0	73.0	73.0						37.0	
Total Split (s)			73.0	73.0	73.0						37.0	
Total Split (%)			66.4%	66.4%	66.4%						33.6%	
Maximum Green (s)			64.0	64.0	64.0						32.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			57.0	57.0	57.0						25.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			69.0		69.0						33.0	
Actuated g/C Ratio			0.63		0.63						0.30	
v/c Ratio			0.11		0.30						0.40	
Control Delay			8.6		9.9						30.2	
Queue Delay			0.0		0.0						0.0	
Total Delay			8.6		9.9						30.2	
LOS			A		A						C	
Approach Delay		8.6			9.9						30.2	
Approach LOS		A			A						C	
Queue Length 50th (ft)			27		92						101	
Queue Length 95th (ft)			50		122						144	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			918		1967						911	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.11		0.30						0.40	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

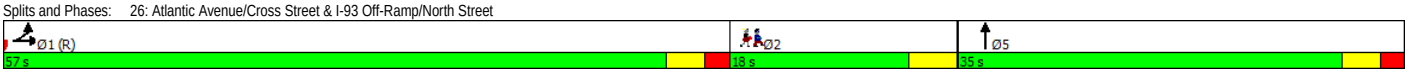
Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	521	44	0	0	0	0	0	471	33	0	0	0	
Future Volume (vph)	521	44	0	0	0	0	0	471	33	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								0.99					
Frt								0.990					
Flt Protected	0.950	0.960											
Satd. Flow (prot)	1498	1521	0	0	0	0	0	3078	0	0	0	0	
Flt Permitted	0.950	0.960											
Satd. Flow (perm)	1498	1521	0	0	0	0	0	3078	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									68				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	537	45	0	0	0	0	0	496	35	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	311	271	0	0	0	0	0	531	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	57.0	57.0						35.0					18.0
Total Split (%)	51.8%	51.8%						31.8%					16%
Maximum Green (s)	52.0	52.0						30.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	53.0	53.0						31.0					
Actuated g/C Ratio	0.48	0.48						0.28					
v/c Ratio	0.43	0.37						0.61					
Control Delay	21.0	19.8						44.4					
Queue Delay	0.0	0.0						0.0					
Total Delay	21.0	19.8						44.4					
LOS	C	B						D					
Approach Delay		20.5						44.4					
Approach LOS		C						D					
Queue Length 50th (ft)	146	123						207					
Queue Length 95th (ft)	224	190						264					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	721	732						872					
Starvation Cap Reductn	0	0						0					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.43	0.37						0.61					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 72 (65%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	42	0	0	97	85	247	674	71	0	0	0
Future Volume (vph)	26	42	0	0	97	85	247	674	71	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.76				0.84			0.86				
Frt					0.937			0.989				
Flt Protected	0.950							0.988				
Satd. Flow (prot)	1562	1676	0	0	1306	0	0	2885	0	0	0	0
Flt Permitted	0.542							0.988				
Satd. Flow (perm)	680	1676	0	0	1306	0	0	2649	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								13				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	496					496	394		2640			
Confl. Bikes (#/hr)						10			67			
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	4%	0%	2%	4%	0%	5%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	31	49	0	0	104	91	252	688	72	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	49	0	0	195	0	0	1012	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (%)	35.5%	35.5%			35.5%		64.5%	64.5%				
Maximum Green (s)	34.0	34.0			34.0		66.0	66.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	27.0	27.0			27.0		59.0	59.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	35.0	35.0			35.0			67.0				
Actuated g/C Ratio	0.32	0.32			0.32			0.61				
v/c Ratio	0.14	0.09			0.47			0.57				
Control Delay	29.1	27.1			34.6			5.2				
Queue Delay	0.0	0.0			0.0			0.4				
Total Delay	29.1	27.1			34.6			5.7				
LOS	C	C			C			A				
Approach Delay		27.8			34.6			5.7				
Approach LOS		C			C			A				
Queue Length 50th (ft)	16	24			110			44				
Queue Length 95th (ft)	38	50			181			54				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	216	533			415			1762				
Starvation Cap Reductn	0	0			0			315				
Spillback Cap Reductn	0	0			0			273				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.14	0.09			0.47			0.70				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

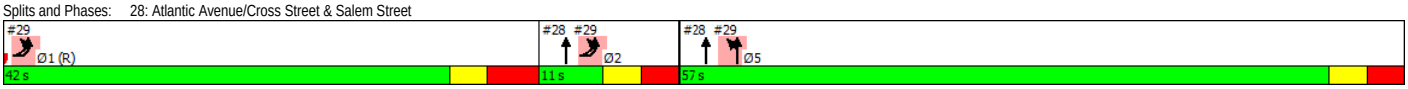
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	757	28	0	0			
Future Volume (vph)	0	0	757	28	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.995						
Flt Protected									
Satd. Flow (prot)	0	0	3468	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3468	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			6						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				152					
Confl. Bikes (#/hr)				57					
Peak Hour Factor	0.92	0.92	0.98	0.98	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	772	29	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	801	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							42.0	10.0	57.0
Total Split (s)							42.0	11.0	57.0
Total Split (%)							38%	10%	52%
Maximum Green (s)							35.0	5.0	51.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							28.0		44.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			62.0						
Actuated g/C Ratio			0.56						
v/c Ratio			0.41						
Control Delay			10.0						
Queue Delay			0.9						
Total Delay			10.9						
LOS			B						
Approach Delay			10.9						
Approach LOS			B						
Queue Length 50th (ft)			164						
Queue Length 95th (ft)			183						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			1957						
Starvation Cap Reductn			821						
Spillback Cap Reductn			197						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.71						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 27.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

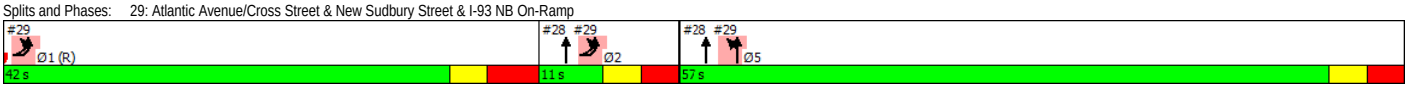


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	170	106	0	135	622	0	0	0	0		
Future Volume (vph)	170	106	0	135	622	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Frt											
Flt Protected		0.950			0.991						
Satd. Flow (prot)	0	3547	0	0	3317	0	0	0	0		
Flt Permitted		0.950			0.991						
Satd. Flow (perm)	0	3547	0	0	3317	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Peak Hour Factor	0.96	0.96	0.96	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	0%	10%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	177	110	0	138	635	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	287	0	0	773	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				57.0	57.0					42.0	10.0
Total Split (s)				57.0	57.0					42.0	11.0
Total Split (%)				51.8%	51.8%					38%	10%
Maximum Green (s)				51.0	51.0					35.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				44.0	44.0					28.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		47.0			52.0						
Actuated g/C Ratio		0.43			0.47						
v/c Ratio		0.19			0.49						
Control Delay		20.1			6.0						
Queue Delay		0.0			0.2						
Total Delay		20.1			6.2						
LOS		C			A						
Approach Delay		20.1			6.2						
Approach LOS		C			A						
Queue Length 50th (ft)		63			203						
Queue Length 95th (ft)		92			58						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1515			1568						
Starvation Cap Reductn		0			227						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.19			0.58						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

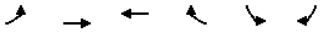
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	56	189	1	2	17	1
Future Volume (Veh/h)	56	189	1	2	17	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.50	0.50	0.85	0.85
Hourly flow rate (vph)	60	201	2	4	20	1
Pedestrians	62			38	103	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	5			3	9	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	205					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			364		334	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			290		257	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1101		598	683

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	261	6	21
Volume Left	0	2	20
Volume Right	201	0	1
cSH	1700	1101	601
Volume to Capacity	0.15	0.00	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	2.8	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.8	11.2
Approach LOS			B

Intersection Summary				
Average Delay			0.9	
Intersection Capacity Utilization			36.4%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	18	25	0	2	25
Future Volume (Veh/h)	27	18	25	0	2	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.82	0.82	0.81	0.81
Hourly flow rate (vph)	29	19	30	0	2	31
Pedestrians		13	35		137	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	3		11	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	167				279	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167				279	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	96
cM capacity (veh/h)	1261				601	761

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	48	30	33
Volume Left	29	0	2
Volume Right	0	0	31
cSH	1261	1700	748
Volume to Capacity	0.02	0.02	0.04
Queue Length 95th (ft)	2	0	3
Control Delay (s)	4.9	0.0	10.0
Lane LOS	A		B
Approach Delay (s)	4.9	0.0	10.0
Approach LOS			B

Intersection Summary				
Average Delay			5.1	
Intersection Capacity Utilization			26.7%	ICU Level of Service A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	24	821	0	0	0
Future Volume (Veh/h)	0	24	821	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	30	855	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	855	428			855	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315	0			315	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	526	858			1004	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	15	15	428	428
Volume Left	0	0	0	0
Volume Right	15	15	0	0
cSH	858	858	1700	1700
Volume to Capacity	0.02	0.02	0.25	0.25
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	9.3	9.3	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.3		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			32.7%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	14	43	3	10
Future Volume (Veh/h)	0	0	14	43	3	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.81	0.81
Hourly flow rate (vph)	0	0	15	47	4	12
Pedestrians	104					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	191	114	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	114	120			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	99			
cM capacity (veh/h)	794	944	1437			

Direction, Lane #	NB 1	SB 1
Volume Total	62	16
Volume Left	15	0
Volume Right	0	12
cSH	1437	1700
Volume to Capacity	0.01	0.01
Queue Length 95th (ft)	1	0
Control Delay (s)	1.9	0.0
Lane LOS	A	
Approach Delay (s)	1.9	0.0
Approach LOS		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	16.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	39	11	2	108	11	32
Future Volume (Veh/h)	39	11	2	108	11	32
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.84	0.84	0.90	0.90
Hourly flow rate (vph)	41	11	2	129	12	36
Pedestrians	73			164	85	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	6			14	7	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			137		338	296
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			137		338	296
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1356		561	595

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	52	131	48
Volume Left	0	2	12
Volume Right	11	0	36
cSH	1700	1356	586
Volume to Capacity	0.03	0.00	0.08
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.1	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.7
Approach LOS			B

Intersection Summary					
Average Delay			2.5		
Intersection Capacity Utilization			32.8%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	183	66	0	0	0	114	0	818	56	0	0	0	
Future Volume (vph)	183	66	0	0	0	114	0	818	56	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt						0.865		0.990					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3112	0	0	0	1676	0	3009	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3112	0	0	0	1676	0	3009	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						293		9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			205			294			151		
Travel Time (s)		4.4			5.6			8.0			4.1		
Confl. Bikes (#/hr)						1			76				
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	191	69	0	0	0	120	0	852	58	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	191	69	0	0	0	120	0	910	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				8.0		8.0					8.0
Minimum Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (%)	18.2%	18.2%				12.7%		52.7%					16%
Maximum Green (s)	15.0	15.0				9.0		53.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					2.0
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	8.0	8.0				2.0		46.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	16.0	16.0				10.0		54.0					
Actuated g/C Ratio	0.15	0.15				0.09		0.49					
v/c Ratio	0.90	0.15				0.29		0.61					
Control Delay	80.6	35.6				1.7		16.7					
Queue Delay	57.3	0.0				0.0		0.5					
Total Delay	137.8	35.6				1.7		17.2					
LOS	F	D				A		B					
Approach Delay		110.7			1.7			17.2					
Approach LOS		F			A			B					
Queue Length 50th (ft)	138	22				0		108					
Queue Length 95th (ft)	#294	44				m0		177					
Internal Link Dist (ft)		81			125			214			71		
Turn Bay Length (ft)													
Base Capacity (vph)	212	452				418		1481					
Starvation Cap Reductn	88	0				0		210					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.54	0.15				0.29		0.72					

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 41.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	25	19	86	855	34	0	0	0
Future Volume (vph)	0	0	0	0	25	19	86	855	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.92			0.98				
Frt					0.941			0.995				
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	1376	0	0	3165	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	1376	0	0	3159	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					2			9				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			294	
Travel Time (s)		4.7			4.9			15.5			8.0	
Confl. Peds. (#/hr)						100	47		1255			
Confl. Bikes (#/hr)						1			77			
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	30	23	89	881	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	53	0	0	1005	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					5			1				
Permitted Phases							1					
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					23.0		87.0	87.0				
Total Split (s)					23.0		87.0	87.0				
Total Split (%)					20.9%		79.1%	79.1%				
Maximum Green (s)					18.0		82.0	82.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					11.0		75.0	75.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					19.0			83.0				
Actuated g/C Ratio					0.17			0.75				
v/c Ratio					0.22			0.42				
Control Delay					40.8			2.5				
Queue Delay					0.0			0.1				
Total Delay					40.8			2.6				
LOS					D			A				
Approach Delay					40.8			2.6				
Approach LOS					D			A				
Queue Length 50th (ft)					31			111				
Queue Length 95th (ft)					64			72				
Internal Link Dist (ft)		91			99			490			214	
Turn Bay Length (ft)												
Base Capacity (vph)					239			2385				
Starvation Cap Reductn					0			290				
Spillback Cap Reductn					0			170				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.22			0.48				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	79	32	0	0	0	0	0	625	26	
Future Volume (vph)	0	0	0	79	32	0	0	0	0	0	625	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.994		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3090	1605	0	0	0	0	0	4586	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3090	1605	0	0	0	0	0	4586	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											8		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												50	
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	82	33	0	0	0	0	0	694	29	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	82	33	0	0	0	0	0	723	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				31.0	31.0						58.0		21.0
Total Split (s)				31.0	31.0						58.0		21.0
Total Split (%)				28.2%	28.2%						52.7%		19%
Maximum Green (s)				26.0	26.0						52.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				19.0	19.0						45.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				28.0	28.0						54.0		
Actuated g/C Ratio				0.25	0.25						0.49		
v/c Ratio				0.10	0.08						0.32		
Control Delay				36.4	37.3						5.1		
Queue Delay				1.2	1.8						0.2		
Total Delay				37.6	39.2						5.3		
LOS				D	D						A		
Approach Delay					38.1						5.3		
Approach LOS					D						A		
Queue Length 50th (ft)				25	19						22		
Queue Length 95th (ft)				0	0						27		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				786	408						2255		
Starvation Cap Reductn				554	294						712		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.35	0.29						0.47		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 107.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	135	16	0	0	0	0	0	0	114	635	0	
Future Volume (vph)	0	135	16	0	0	0	0	0	0	114	635	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.984											
Flt Protected											0.992		
Satd. Flow (prot)	0	3374	0	0	0	0	0	0	0	0	4578	0	
Flt Permitted											0.992		
Satd. Flow (perm)	0	3374	0	0	0	0	0	0	0	0	4578	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		11											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			5										
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	
Adj. Flow (vph)	0	148	18	0	0	0	0	0	0	125	698	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	166	0	0	0	0	0	0	0	0	823	0	
Turn Type		NA								Perm	NA		
Protected Phases		5									1		2
Permitted Phases										1			
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		26.0								66.0	66.0		18.0
Total Split (s)		26.0								66.0	66.0		18.0
Total Split (%)		23.6%								60.0%	60.0%		16%
Maximum Green (s)		22.0								61.0	61.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		15.0								54.0	54.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		23.0									62.0		
Actuated g/C Ratio		0.21									0.56		
v/c Ratio		0.23									0.32		
Control Delay		34.7									5.4		
Queue Delay		0.3									0.2		
Total Delay		35.0									5.6		
LOS		C									A		
Approach Delay		35.0									5.6		
Approach LOS		C									A		
Queue Length 50th (ft)		47									43		
Queue Length 95th (ft)		78									50		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		714									2580		
Starvation Cap Reductn		0									780		
Spillback Cap Reductn		197									374		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.32									0.46		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 102 (93%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 41.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	97	161	0	0	0	0	0	651	275
Future Volume (vph)	0	0	0	97	161	0	0	0	0	0	651	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.78							0.98	
Frt											0.955	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1464	3022	0	0	0	0	0	4319	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1143	3022	0	0	0	0	0	4319	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											165	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				219								84
Confl. Bikes (#/hr)												50
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	0	0	0	104	173	0	0	0	0	0	685	289
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	104	173	0	0	0	0	0	974	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				42.0	42.0						68.0	
Total Split (s)				42.0	42.0						68.0	
Total Split (%)				38.2%	38.2%						61.8%	
Maximum Green (s)				33.0	33.0						63.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				26.0	26.0						56.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				34.0	34.0						64.0	
Actuated g/C Ratio				0.31	0.31						0.58	
v/c Ratio				0.23	0.19						0.38	
Control Delay				31.5	30.1						0.5	
Queue Delay				11.7	4.2						0.1	
Total Delay				43.2	34.3						0.7	
LOS				D	C						A	
Approach Delay					37.6						0.7	
Approach LOS					D						A	
Queue Length 50th (ft)				61	50						0	
Queue Length 95th (ft)				m108	79						0	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				452	934						2581	
Starvation Cap Reductn				317	679						570	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.77	0.68						0.48	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 145.8%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	127	55	131	1019	35	0	0	0
Future Volume (vph)	0	0	0	0	127	55	131	1019	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.94			0.98				
Frt					0.959			0.996				
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	1731	0	0	3137	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	0	0	0	1731	0	0	3121	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					4			5				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						177	97		780			
Confl. Bikes (#/hr)						4			75			
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	134	58	135	1051	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	192	0	0	1222	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					35.0		75.0	75.0				
Total Split (s)					35.0		75.0	75.0				
Total Split (%)					31.8%		68.2%	68.2%				
Maximum Green (s)					30.0		70.0	70.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					23.0		63.0	63.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					31.0			71.0				
Actuated g/C Ratio					0.28			0.65				
v/c Ratio					0.39			0.60				
Control Delay					34.1			5.2				
Queue Delay					0.0			0.1				
Total Delay					34.1			5.3				
LOS					C			A				
Approach Delay					34.1			5.3				
Approach LOS					C			A				
Queue Length 50th (ft)					107			106				
Queue Length 95th (ft)					174			m122				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					490			2026				
Starvation Cap Reductn					0			118				
Spillback Cap Reductn					1			85				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.39			0.64				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	74	0	0	704	0	
Future Volume (vph)	0	74	0	0	704	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Ped Bike Factor							
Frt		0.865					
Flt Protected							
Satd. Flow (prot)	0	1498	0	0	4577	0	
Flt Permitted							
Satd. Flow (perm)	0	1498	0	0	4577	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		392					
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						52	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.90	0.90	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	0	81	0	0	782	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	81	0	0	782	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		19.0			69.0		22.0
Total Split (s)		19.0			69.0		22.0
Total Split (%)		17.3%			62.7%		20%
Maximum Green (s)		15.0			63.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		8.0			56.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		15.0			65.0		
Actuated g/C Ratio		0.14			0.59		
v/c Ratio		0.15			0.29		
Control Delay		0.6			2.5		
Queue Delay		0.0			0.1		
Total Delay		0.6			2.6		
LOS		A			A		
Approach Delay	0.6				2.6		
Approach LOS	A				A		
Queue Length 50th (ft)		0			23		
Queue Length 95th (ft)		0			29		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		542			2704		
Starvation Cap Reductn		0			698		
Spillback Cap Reductn		0			0		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.15			0.39		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 100 (91%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 2.4		Intersection LOS: A	
Intersection Capacity Utilization 28.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	193	65	0	0	0	0	0	0	81	697	0	
Future Volume (vph)	0	193	65	0	0	0	0	0	0	81	697	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.962											
Flt Protected											0.995		
Satd. Flow (prot)	0	3482	0	0	0	0	0	0	0	0	4554	0	
Flt Permitted											0.995		
Satd. Flow (perm)	0	3482	0	0	0	0	0	0	0	0	4554	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		35											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			4										
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	2%	2%	0%	
Adj. Flow (vph)	0	247	83	0	0	0	0	0	0	90	774	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	330	0	0	0	0	0	0	0	0	864	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		19.0								72.0	72.0		19.0
Total Split (s)		19.0								72.0	72.0		19.0
Total Split (%)		17.3%								65.5%	65.5%		17%
Maximum Green (s)		14.0								67.0	67.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		7.0								60.0	60.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		15.0									68.0		
Actuated g/C Ratio		0.14									0.62		
v/c Ratio		0.65									0.31		
Control Delay		46.9									1.1		
Queue Delay		58.2									0.2		
Total Delay		105.1									1.2		
LOS		F									A		
Approach Delay		105.1									1.2		
Approach LOS		F									A		
Queue Length 50th (ft)		105									7		
Queue Length 95th (ft)		129									9		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		505									2815		
Starvation Cap Reductn		0									951		
Spillback Cap Reductn		213									6		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		1.13									0.46		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 29.9		Intersection LOS: C	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	274	0	0	701	0	0	
Future Volume (vph)	274	0	0	701	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3152	0	0	3158	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3152	0	0	3158	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.95	0.95	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	288	0	0	730	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	288	0	0	730	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.50			0.40			
Control Delay	29.6			5.4			
Queue Delay	27.2			0.0			
Total Delay	56.8			5.4			
LOS	E			A			
Approach Delay	56.8			5.4			
Approach LOS	E			A			
Queue Length 50th (ft)	107			94			
Queue Length 95th (ft)	151			96			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	573			1837			
Starvation Cap Reductn	284			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	1.00			0.40			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 20.0		Intersection LOS: B	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	6	665	314	537	238	71	246	457	221		
Future Volume (vph)	6	6	665	314	537	238	71	246	457	221		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.98			
Frt					0.850	0.850			0.953			
Flt Protected			0.999					0.950	0.998			
Satd. Flow (prot)	0	0	3321	1475	1323	1427	0	1439	2895	0		
Flt Permitted			0.955					0.950	0.998			
Satd. Flow (perm)	0	0	3175	1475	1323	1427	0	1439	2895	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					18	18				76		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.98	0.98	0.98	0.98		
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	2%	3%	2%	7%		
Adj. Flow (vph)	6	6	679	324	554	245	72	251	466	226		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	691	324	554	245	0	298	717	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Split	Split	NA			
Protected Phases			5	5	5	5	1	1	1		2	6
Permitted Phases	2 5	2 5	2									
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		4.0	4.0
Minimum Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (%)			31.8%	31.8%	31.8%	31.8%	39.1%	39.1%	39.1%		24%	5%
Maximum Green (s)			28.5	28.5	28.5	28.5	36.5	36.5	36.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			21.5	21.5	21.5	21.5	28.5	28.5	28.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			44.1	29.5	29.5	29.5		42.7	42.7			
Actuated g/C Ratio			0.40	0.27	0.27	0.27		0.39	0.39			
v/c Ratio			0.53	0.82	1.56	0.64		0.53	0.64			
Control Delay			3.5	56.0	297.9	44.5		19.8	19.2			
Queue Delay			2.1	54.3	0.0	0.0		0.0	0.0			
Total Delay			5.6	110.4	297.9	44.5		19.8	19.2			
LOS			A	F	F	D		B	B			
Approach Delay			5.6	188.5					19.3			
Approach LOS			A	F					B			
Queue Length 50th (ft)			6	236	~609	161		78	93			
Queue Length 95th (ft)			m6	#398	#842	255		178	203			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1310	395	354	382		558	1123			
Starvation Cap Reductn			453	0	0	0		0	0			
Spillback Cap Reductn			0	102	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			0.81	1.11	1.56	0.64		0.53	0.64			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 19 (17%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.56			
Intersection Signal Delay: 83.1		Intersection LOS: F	
Intersection Capacity Utilization 85.1%		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: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	169	216	651	111	677	132	47	
Future Volume (vph)	169	216	651	111	677	132	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			0.99					
Frt			0.978			0.961		
Flt Protected		0.979			0.950	0.964		
Satd. Flow (prot)	0	3027	4456	0	1608	1539	0	
Flt Permitted		0.979			0.950	0.964		
Satd. Flow (perm)	0	3027	4456	0	1608	1539	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			31					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				41				
Peak Hour Factor	0.85	0.85	0.91	0.91	0.98	0.98	0.98	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	4%	0%	
Adj. Flow (vph)	199	254	715	122	691	135	48	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	453	837	0	691	183	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (%)	19.1%	19.1%	34.5%		28.2%	28.2%		18%
Maximum Green (s)	14.0	14.0	33.5		26.0	26.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	26.5		19.0	19.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	34.5		47.0	27.0		
Actuated g/C Ratio		0.15	0.31		0.43	0.25		
v/c Ratio		1.03	0.59		1.01	0.49		
Control Delay		73.0	16.9		68.2	40.7		
Queue Delay		19.8	0.0		0.0	0.0		
Total Delay		92.9	16.9		68.2	40.7		
LOS		F	B		E	D		
Approach Delay		92.9	16.9			62.5		
Approach LOS		F	B			E		
Queue Length 50th (ft)		~180	89		~485	111		
Queue Length 95th (ft)		m#246	108		#737	182		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		440	1418		687	377		
Starvation Cap Reductn		23	0		0	0		
Spillback Cap Reductn		0	0		0	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.09	0.59		1.01	0.49		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 16 (15%), Referenced to phase 1:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 51.2 Intersection LOS: D
Intersection Capacity Utilization 81.3% 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: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	52	142	0	0	0	0	0	878	74	
Future Volume (vph)	0	0	0	52	142	0	0	0	0	0	878	74	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.988		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3110	0	0	0	0	0	4509	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3110	0	0	0	0	0	4509	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											20		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												37	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	2%	3%	
Adj. Flow (vph)	0	0	0	60	163	0	0	0	0	0	954	80	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	60	163	0	0	0	0	0	1034	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				18.0	18.0						66.0		18.0
Total Split (s)				26.0	26.0						66.0		18.0
Total Split (%)				23.6%	23.6%						60.0%		16%
Maximum Green (s)				21.0	21.0						62.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				6.0	6.0						55.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				14.1	14.1						70.9		
Actuated g/C Ratio				0.13	0.13						0.64		
v/c Ratio				0.30	0.41						0.35		
Control Delay				56.6	55.9						3.7		
Queue Delay				0.0	0.0						0.1		
Total Delay				56.6	55.9						3.9		
LOS				E	E						A		
Approach Delay					56.1						3.9		
Approach LOS					E						A		
Queue Length 50th (ft)				45	64						38		
Queue Length 95th (ft)				87	97						m42		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				308	622						2914		
Starvation Cap Reductn				0	0						820		
Spillback Cap Reductn				0	0						251		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.19	0.26						0.49		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 34.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	194	995	0	0	
Future Volume (vph)	0	0	194	995	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.992			
Satd. Flow (prot)	0	0	0	4540	0	0	
Flt Permitted				0.992			
Satd. Flow (perm)	0	0	0	4540	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	0	0	200	1026	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1226	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.34			
Control Delay				0.3			
Queue Delay				0.3			
Total Delay				0.6			
LOS				A			
Approach Delay				0.6			
Approach LOS				A			
Queue Length 50th (ft)				0			
Queue Length 95th (ft)				m0			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3590			
Starvation Cap Reductn				1455			
Spillback Cap Reductn				0			
Storage Cap Reductn				0			
Reduced v/c Ratio				0.57			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 11 (10%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 0.6 Intersection LOS: A
Intersection Capacity Utilization 34.0% ICU Level of Service A
Analysis Period (min) 15

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

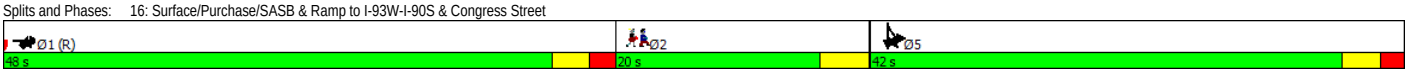
Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	569	338	276	327	360	243	
Future Volume (vph)	569	338	276	327	360	243	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3110	1439	1405	1699	1593	1637	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3110	1439	1405	1699	1593	1637	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Confl. Bikes (#/hr)		19	19				
Peak Hour Factor	0.96	0.96	0.96	0.91	0.91	0.91	
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	593	352	288	359	396	267	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	593	352	288	359	396	267	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (%)	43.6%	43.6%	43.6%	38.2%	38.2%	38.2%	18%
Maximum Green (s)	43.0	43.0	43.0	37.0	37.0	37.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0	36.0	30.0	30.0	30.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	45.0	43.0	45.0	39.0	39.0	39.0	
Actuated g/C Ratio	0.41	0.39	0.41	0.35	0.35	0.35	
v/c Ratio	0.47	0.63	0.50	0.60	0.70	0.46	
Control Delay	25.2	33.0	27.9	22.3	27.1	18.2	
Queue Delay	0.3	0.0	0.0	2.9	3.3	2.2	
Total Delay	25.5	33.0	27.9	25.2	30.4	20.4	
LOS	C	C	C	C	C	C	
Approach Delay	28.2					26.0	
Approach LOS	C					C	
Queue Length 50th (ft)	157	197	149	254	287	167	
Queue Length 95th (ft)	209	301	232	360	400	272	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1272	562	574	602	564	580	
Starvation Cap Reductn	0	0	0	146	92	190	
Spillback Cap Reductn	200	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.55	0.63	0.50	0.79	0.84	0.68	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 82 (75%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

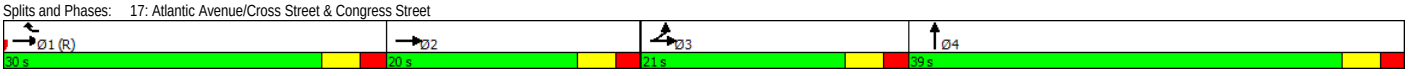


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	414	482	0	0	0	306	0	469	53	0	0	0	
Future Volume (vph)	414	482	0	0	0	306	0	469	53	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.53							0.95					
Frt						0.850		0.985					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	4246	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1582	3079	0	0	0	2448	0	4246	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	593					593			1007				
Confl. Bikes (#/hr)						12			76				
Peak Hour Factor	0.99	0.99	0.99	0.98	0.98	0.98	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	3%	6%	0%	0%	0%	
Adj. Flow (vph)	418	487	0	0	0	312	0	494	56	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	418	487	0	0	0	312	0	550	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					30.0		39.0					20.0
Total Split (s)	21.0					30.0		39.0					20.0
Total Split (%)	19.1%					27.3%		35.5%					18%
Maximum Green (s)	16.0					25.0		34.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						18.0		27.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	17.0	67.0				26.0		36.0					
Actuated g/C Ratio	0.15	0.61				0.24		0.33					
v/c Ratio	0.91	0.26				0.54		0.40					
Control Delay	59.8	4.2				40.8		23.9					
Queue Delay	12.0	0.4				0.0		0.0					
Total Delay	71.8	4.6				40.8		23.9					
LOS	E	A				D		C					
Approach Delay		35.6			40.8			23.9					
Approach LOS		D			D			C					
Queue Length 50th (ft)	157	52				110		124					
Queue Length 95th (ft)	#245	48				160		156					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	461	1875				578		1389					
Starvation Cap Reductn	38	852				0		0					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	0.99	0.48				0.54		0.40					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 63 (57%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 32.9		Intersection LOS: C	
Intersection Capacity Utilization 73.8%		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: 17: Atlantic Avenue/Cross Street & Congress Street

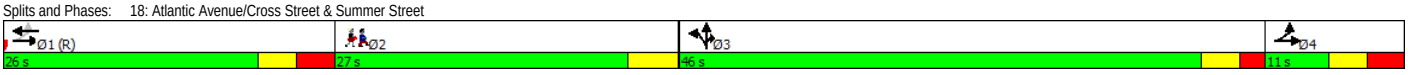


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	34	238	0	0	274	141	90	347	205	0	0	0	
Future Volume (vph)	34	238	0	0	274	141	90	347	205	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.949				0.850				
Flt Protected		0.994					0.950	0.999					
Satd. Flow (prot)	0	3190	0	0	4058	0	1464	2865	1454	0	0	0	
Flt Permitted		0.862					0.950	0.999					
Satd. Flow (perm)	0	2766	0	0	4058	0	1464	2865	1454	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						30			78				
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	1%	0%	0%	0%	1%	1%	5%	0%	0%	0%	0%	
Adj. Flow (vph)	35	248	0	0	277	142	94	361	214	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	283	0	0	419	0	85	370	214	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				26.0		46.0	46.0	46.0				27.0
Total Split (s)	11.0				26.0		46.0	46.0	46.0				27.0
Total Split (%)	10.0%				23.6%		41.8%	41.8%	41.8%				25%
Maximum Green (s)	5.0				20.0		41.0	41.0	41.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				13.0		34.0	34.0	34.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		29.0			22.0		42.0	42.0	42.0				
Actuated g/C Ratio		0.26			0.20		0.38	0.38	0.38				
v/c Ratio		0.37			0.52		0.15	0.34	0.39				
Control Delay		31.9			41.9		23.3	25.2	27.2				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		31.9			41.9		23.3	25.2	27.2				
LOS		C			D		C	C	C				
Approach Delay		31.9			41.9			25.6					
Approach LOS		C			D			C					
Queue Length 50th (ft)		80			97		42	100	108				
Queue Length 95th (ft)		117			132		82	142	175				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		756			811		558	1093	555				
Starvation Cap Reductn		0			0		0	0	0				
Spillback Cap Reductn		0			0		0	0	0				
Storage Cap Reductn		0			0		0	0	0				
Reduced v/c Ratio		0.37			0.52		0.15	0.34	0.39				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 59 (54%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 38.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	926	0	
Future Volume (vph)	0	0	0	0	926	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5136	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5136	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	0	955	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	955	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					71.0		39.0
Total Split (s)					71.0		39.0
Total Split (%)					64.5%		35%
Maximum Green (s)					66.0		33.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					59.0		26.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					67.0		
Actuated g/C Ratio					0.61		
v/c Ratio					0.31		
Control Delay					7.0		
Queue Delay					0.3		
Total Delay					7.4		
LOS					A		
Approach Delay					7.4		
Approach LOS					A		
Queue Length 50th (ft)					59		
Queue Length 95th (ft)					69		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3128		
Starvation Cap Reductn					1438		
Spillback Cap Reductn					0		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.57		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 21.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations			↑↑				
Traffic Volume (vph)	0	0	1074	0	0	0	
Future Volume (vph)	0	0	1074	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3574	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3574	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	
Adj. Flow (vph)	0	0	1107	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	1107	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			75.0				35.0
Total Split (s)			75.0				35.0
Total Split (%)			68.2%				32%
Maximum Green (s)			70.0				30.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			63.0				23.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			71.0				
Actuated g/C Ratio			0.65				
v/c Ratio			0.48				
Control Delay			2.8				
Queue Delay			0.2				
Total Delay			3.0				
LOS			A				
Approach Delay			3.0				
Approach LOS			A				
Queue Length 50th (ft)			35				
Queue Length 95th (ft)			41				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2306				
Starvation Cap Reductn			451				
Spillback Cap Reductn			167				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.60				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 3.0		Intersection LOS: A	
Intersection Capacity Utilization 33.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	200	0	0	0	219	726
Future Volume (vph)	200	0	0	0	219	726
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.98					0.99
Frt						
Flt Protected	0.950					0.989
Satd. Flow (prot)	2958	0	0	0	0	4561
Flt Permitted	0.950					0.989
Satd. Flow (perm)	2899	0	0	0	0	4514
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	20				88	
Peak Hour Factor	0.95	0.95	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	0%	2%	1%
Adj. Flow (vph)	211	0	0	0	223	741
Shared Lane Traffic (%)						
Lane Group Flow (vph)	211	0	0	0	0	964
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	39.0				71.0	71.0
Total Split (s)	39.0				71.0	71.0
Total Split (%)	35.5%				64.5%	64.5%
Maximum Green (s)	33.0				66.0	66.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	26.0				59.0	59.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	34.0					67.0
Actuated g/C Ratio	0.31					0.61
v/c Ratio	0.23					0.35
Control Delay	9.6					13.3
Queue Delay	3.5					0.7
Total Delay	13.1					14.0
LOS	B					B
Approach Delay	13.1					14.0
Approach LOS	B					B
Queue Length 50th (ft)	63					124
Queue Length 95th (ft)	67					147
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	914					2778
Starvation Cap Reductn	605					1376
Spillback Cap Reductn	0					173
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.68					0.69

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 34.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	32	187	0	0	180	18	20	620	434	0	0	0	
Future Volume (vph)	32	187	0	0	180	18	20	620	434	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00								
Frt					0.988				0.850				
Flt Protected		0.993						0.998					
Satd. Flow (prot)	0	3092	0	0	1614	0	0	3181	1454	0	0	0	
Flt Permitted		0.842						0.998					
Satd. Flow (perm)	0	2622	0	0	1614	0	0	3181	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					4								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Bikes (#/hr)						16			77				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	34	199	0	0	194	19	21	639	447	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	233	0	0	213	0	0	660	447	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA	Prot				
Protected Phases		5			5			1	1				2
Permitted Phases	5						1						
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (%)	25.5%	25.5%			25.5%		54.5%	54.5%	54.5%				20%
Maximum Green (s)	23.0	23.0			23.0		55.0	55.0	55.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	16.0	16.0			16.0		48.0	48.0	48.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		24.0			24.0			56.0	56.0				
Actuated g/C Ratio		0.22			0.22			0.51	0.51				
v/c Ratio		0.41			0.60			0.41	0.60				
Control Delay		42.4			46.0			11.0	18.4				
Queue Delay		4.0			0.3			0.9	2.6				
Total Delay		46.4			46.3			12.0	21.0				
LOS		D			D			B	C				
Approach Delay		46.4			46.3			15.6					
Approach LOS		D			D			B					
Queue Length 50th (ft)		92			134			156	292				
Queue Length 95th (ft)		135			215			194	420				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		572			355			1619	740				
Starvation Cap Reductn		256			0			646	181				
Spillback Cap Reductn		0			13			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.74			0.62			0.68	0.80				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 79 (72%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 24.4		Intersection LOS: C	
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	424	73	0	0	0	0	0	521	55	
Future Volume (vph)	0	0	0	424	73	0	0	0	0	0	521	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.986		
Flt Protected				0.950	0.969								
Satd. Flow (prot)	0	0	0	1630	1754	0	0	0	0	0	4519	0	
Flt Permitted				0.950	0.969								
Satd. Flow (perm)	0	0	0	1630	1754	0	0	0	0	0	4519	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											18		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												56	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.99	0.99	0.99	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	2%	
Adj. Flow (vph)	0	0	0	446	77	0	0	0	0	0	526	56	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	312	211	0	0	0	0	0	582	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				42.0	42.0						44.0		24.0
Total Split (s)				42.0	42.0						44.0		24.0
Total Split (%)				38.2%	38.2%						40.0%		22%
Maximum Green (s)				37.0	37.0						38.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				30.0	30.0						31.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				39.0	39.0						40.0		
Actuated g/C Ratio				0.35	0.35						0.36		
v/c Ratio				0.54	0.34						0.35		
Control Delay				32.6	28.0						22.4		
Queue Delay				10.3	1.4						0.0		
Total Delay				42.9	29.4						22.4		
LOS				D	C						C		
Approach Delay					37.5						22.4		
Approach LOS					D						C		
Queue Length 50th (ft)				183	113						88		
Queue Length 95th (ft)				277	181						114		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				577	621						1654		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				231	249						20		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.90	0.57						0.36		

Intersection Summary

Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 1 (1%), Referenced to phase 1:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 34.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	22	670	0	0	0
Future Volume (vph)	0	22	670	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3185	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3185	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		310				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	24	705	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	705	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		25.0	85.0			
Total Split (s)		25.0	85.0			
Total Split (%)		22.7%	77.3%			
Maximum Green (s)		21.0	80.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		14.0	73.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		21.0	80.0			
Actuated g/C Ratio		0.19	0.73			
v/c Ratio		0.04	0.30			
Control Delay		0.1	0.5			
Queue Delay		0.0	0.2			
Total Delay		0.1	0.7			
LOS		A	A			
Approach Delay	0.1		0.7			
Approach LOS	A		A			
Queue Length 50th (ft)		0	1			
Queue Length 95th (ft)		0	1			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		538	2316			
Starvation Cap Reductn		0	733			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.04	0.45			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 62 (56%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 0.7		Intersection LOS: A	
Intersection Capacity Utilization 34.7%		ICU Level of Service A	
Analysis Period (min) 15			

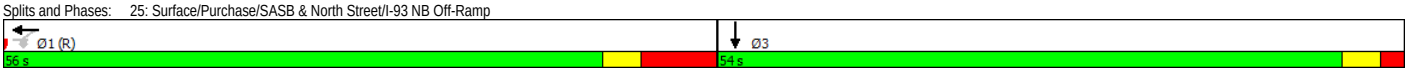
Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	135	152	145	0	0	0	0	0	289	72
Future Volume (vph)	0	0	135	152	145	0	0	0	0	0	289	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.96	
Frt			0.865								0.970	
Flt Protected					0.975							
Satd. Flow (prot)	0	0	1465	0	3121	0	0	0	0	0	2974	0
Flt Permitted					0.975							
Satd. Flow (perm)	0	0	1465	0	3121	0	0	0	0	0	2974	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											37	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												251
Confl. Bikes (#/hr)												53
Peak Hour Factor	0.94	0.94	0.94	0.99	0.99	0.99	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	1%	2%	0%	0%	0%	0%	0%	2%	1%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	144	154	146	0	0	0	0	0	304	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	144	0	300	0	0	0	0	0	380	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			56.0	56.0	56.0						54.0	
Total Split (s)			56.0	56.0	56.0						54.0	
Total Split (%)			50.9%	50.9%	50.9%						49.1%	
Maximum Green (s)			47.0	47.0	47.0						49.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			40.0	40.0	40.0						42.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			52.0		52.0						50.0	
Actuated g/C Ratio			0.47		0.47						0.45	
v/c Ratio			0.21		0.20						0.28	
Control Delay			18.0		17.4						17.4	
Queue Delay			0.0		0.0						0.0	
Total Delay			18.0		17.4						17.4	
LOS			B		B						B	
Approach Delay		18.0			17.4						17.4	
Approach LOS		B			B						B	
Queue Length 50th (ft)			58		63						76	
Queue Length 95th (ft)			99		91						111	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			692		1475						1372	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.21		0.20						0.28	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 69.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	175	42	0	0	0	0	0	677	15	0	0	0	
Future Volume (vph)	175	42	0	0	0	0	0	677	15	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt								0.997					
Flt Protected	0.950	0.969											
Satd. Flow (prot)	1484	1535	0	0	0	0	0	3171	0	0	0	0	
Flt Permitted	0.950	0.969											
Satd. Flow (perm)	1484	1535	0	0	0	0	0	3171	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								2					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									82				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	180	43	0	0	0	0	0	691	15	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	104	119	0	0	0	0	0	706	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	43.0	43.0						49.0					18.0
Total Split (%)	39.1%	39.1%						44.5%					16%
Maximum Green (s)	38.0	38.0						44.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	39.0	39.0						45.0					
Actuated g/C Ratio	0.35	0.35						0.41					
v/c Ratio	0.20	0.22						0.54					
Control Delay	26.0	26.2						7.9					
Queue Delay	0.0	0.0						0.0					
Total Delay	26.0	26.2						7.9					
LOS	C	C						A					
Approach Delay		26.1						7.9					
Approach LOS		C						A					
Queue Length 50th (ft)	53	61						47					
Queue Length 95th (ft)	97	109						57					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	526	544						1298					
Starvation Cap Reductn	0	0						0					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.20	0.22						0.54					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 25 (23%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 34.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	78	0	0	145	66	34	798	20	0	0	0
Future Volume (vph)	31	78	0	0	145	66	34	798	20	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.74				0.87			0.99				
Frt					0.958			0.997				
Flt Protected	0.950							0.998				
Satd. Flow (prot)	1624	1693	0	0	1407	0	0	3125	0	0	0	0
Flt Permitted	0.467							0.998				
Satd. Flow (perm)	589	1693	0	0	1407	0	0	3104	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			4				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	748					748	212		289			
Confl. Bikes (#/hr)						6			80			
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	3%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	32	80	0	0	154	70	35	814	20	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	80	0	0	224	0	0	869	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (%)	30.9%	30.9%			30.9%		69.1%	69.1%				
Maximum Green (s)	29.0	29.0			29.0		71.0	71.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	22.0	22.0			22.0		64.0	64.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	30.0	30.0			30.0			72.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.65				
v/c Ratio	0.20	0.17			0.56			0.42				
Control Delay	34.8	31.8			37.6			1.8				
Queue Delay	0.0	0.0			0.0			0.4				
Total Delay	34.8	31.8			37.6			2.2				
LOS	C	C			D			A				
Approach Delay		32.7			37.6			2.2				
Approach LOS		C			D			A				
Queue Length 50th (ft)	17	43			124			5				
Queue Length 95th (ft)	46	83			206			6				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	160	461			398			2046				
Starvation Cap Reductn	0	0			0			616				
Spillback Cap Reductn	0	0			2			323				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.20	0.17			0.57			0.61				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

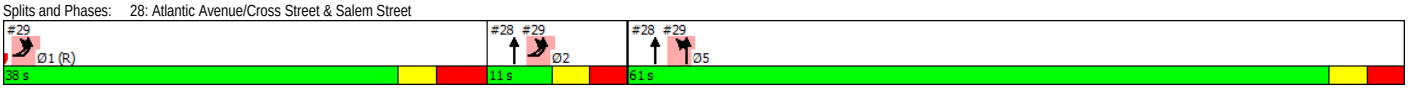
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	857	38	0	0			
Future Volume (vph)	0	0	857	38	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.994						
Flt Protected									
Satd. Flow (prot)	0	0	3451	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3451	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			7						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				239					
Confl. Bikes (#/hr)				81					
Peak Hour Factor	0.92	0.92	0.99	0.99	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	866	38	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	904	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							38.0	11.0	61.0
Total Split (s)							38.0	11.0	61.0
Total Split (%)							35%	10%	55%
Maximum Green (s)							31.0	5.0	55.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							24.0		48.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			66.0						
Actuated g/C Ratio			0.60						
v/c Ratio			0.44						
Control Delay			9.9						
Queue Delay			0.4						
Total Delay			10.2						
LOS			B						
Approach Delay			10.2						
Approach LOS			B						
Queue Length 50th (ft)			250						
Queue Length 95th (ft)			296						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			2073						
Starvation Cap Reductn			590						
Spillback Cap Reductn			189						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.61						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 30.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

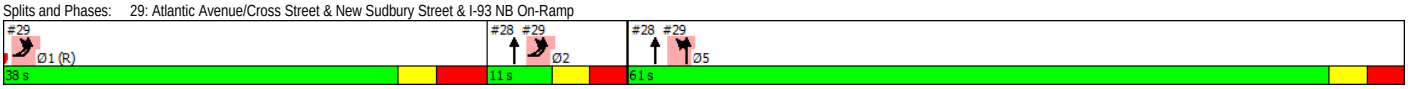


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	277	216	0	323	534	0	0	0	0		
Future Volume (vph)	277	216	0	323	534	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00									
Frt											
Flt Protected		0.950			0.981						
Satd. Flow (prot)	0	3583	0	0	3312	0	0	0	0		
Flt Permitted		0.950			0.981						
Satd. Flow (perm)	0	3570	0	0	3312	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Confl. Peds. (#/hr)		2									
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	1%	1%	0%	4%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	283	220	0	330	545	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	503	0	0	875	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				61.0	61.0					38.0	11.0
Total Split (s)				61.0	61.0					38.0	11.0
Total Split (%)				55.5%	55.5%					35%	10%
Maximum Green (s)				55.0	55.0					31.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				48.0	48.0					24.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		43.0			56.0						
Actuated g/C Ratio		0.39			0.51						
v/c Ratio		0.36			0.52						
Control Delay		24.7			6.1						
Queue Delay		0.0			0.2						
Total Delay		24.7			6.2						
LOS		C			A						
Approach Delay		24.7			6.2						
Approach LOS		C			A						
Queue Length 50th (ft)		127			266						
Queue Length 95th (ft)		171			27						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1400			1686						
Starvation Cap Reductn		0			179						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.36			0.58						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			

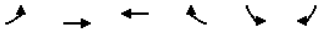
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	77	45	0	4	110	88
Future Volume (Veh/h)	77	45	0	4	110	88
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.50	0.50	0.95	0.95
Hourly flow rate (vph)	79	46	0	8	116	93
Pedestrians	149			95	457	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	12			8	38	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	205					
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			582		716	654
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			558		695	632
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		47	65
cM capacity (veh/h)			617		217	269

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	125	8	209
Volume Left	0	0	116
Volume Right	46	0	93
cSH	1700	617	238
Volume to Capacity	0.07	0.00	0.88
Queue Length 95th (ft)	0	0	181
Control Delay (s)	0.0	0.0	75.2
Lane LOS			F
Approach Delay (s)	0.0	0.0	75.2
Approach LOS			F

Intersection Summary				
Average Delay			45.9	
Intersection Capacity Utilization			34.1%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	22	26	2	0	18
Future Volume (Veh/h)	12	22	26	2	0	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.63	0.63	0.70	0.70
Hourly flow rate (vph)	14	26	41	3	0	26
Pedestrians		29	17		204	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		2	1		17	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	248				318	276
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248				318	276
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	96
cM capacity (veh/h)	1104				549	622

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	44	26
Volume Left	14	0	0
Volume Right	0	3	26
cSH	1104	1700	622
Volume to Capacity	0.01	0.03	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	3.0	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	3.0	0.0	11.0
Approach LOS			B

Intersection Summary				
Average Delay			3.7	
Intersection Capacity Utilization			29.7%	ICU Level of Service A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	70	1115	0	0	0
Future Volume (Veh/h)	0	70	1115	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.83	0.83	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	84	1161	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.79	0.79			0.79	
vC, conflicting volume	1161	580			1161	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	669	0			669	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	90			100	
cM capacity (veh/h)	312	861			734	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	42	42	580	580
Volume Left	0	0	0	0
Volume Right	42	42	0	0
cSH	861	861	1700	1700
Volume to Capacity	0.05	0.05	0.34	0.34
Queue Length 95th (ft)	4	4	0	0
Control Delay (s)	9.4	9.4	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.4		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.6	
Intersection Capacity Utilization			40.8%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	66	99	4	4
Future Volume (Veh/h)	0	0	66	99	4	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	0	0	69	104	5	5
Pedestrians	128					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	378	136	138			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	136	138			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	95			
cM capacity (veh/h)	598	919	1446			

Direction, Lane #	NB 1	SB 1
Volume Total	173	10
Volume Left	69	0
Volume Right	0	5
cSH	1446	1700
Volume to Capacity	0.05	0.01
Queue Length 95th (ft)	4	0
Control Delay (s)	3.3	0.0
Lane LOS	A	
Approach Delay (s)	3.3	0.0
Approach LOS		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	18.9%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	6	2	128	54	45
Future Volume (Veh/h)	29	6	2	128	54	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.87	0.87	0.83	0.83
Hourly flow rate (vph)	33	7	2	147	65	54
Pedestrians	140			275	347	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	12			23	29	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			387		674	658
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			387		674	658
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		75	79
cM capacity (veh/h)			841		262	256

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	40	149	119
Volume Left	0	2	65
Volume Right	7	0	54
cSH	1700	841	259
Volume to Capacity	0.02	0.00	0.46
Queue Length 95th (ft)	0	0	56
Control Delay (s)	0.0	0.1	30.1
Lane LOS		A	D
Approach Delay (s)	0.0	0.1	30.1
Approach LOS			D

Intersection Summary				
Average Delay	11.7			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			

- No-Build (2026) Condition

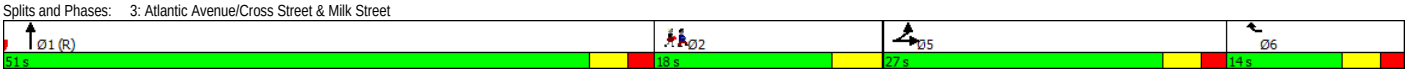
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	110	172	0	0	0	20	0	751	83	0	0	0	
Future Volume (vph)	110	172	0	0	0	20	0	751	83	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								0.99					
Frt						0.865		0.985					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3081	0	0	0	1676	0	2961	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3081	0	0	0	1676	0	2961	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						383		13					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			205			294			151		
Travel Time (s)		4.4			5.6			8.0			4.1		
Confl. Bikes (#/hr)									64				
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	118	185	0	0	0	25	0	774	86	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	118	185	0	0	0	25	0	860	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				8.0		8.0					8.0
Minimum Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (%)	24.5%	24.5%				12.7%		46.4%					16%
Maximum Green (s)	22.0	22.0				9.0		46.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					2.0
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	15.0	15.0				2.0		39.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	23.0	23.0				10.0		47.0					
Actuated g/C Ratio	0.21	0.21				0.09		0.43					
v/c Ratio	0.39	0.29				0.05		0.68					
Control Delay	55.1	50.8				0.2		9.4					
Queue Delay	77.1	18.3				0.0		0.9					
Total Delay	132.2	69.1				0.2		10.3					
LOS	F	E				A		B					
Approach Delay		93.7			0.2			10.3					
Approach LOS		F			A			B					
Queue Length 50th (ft)	94	73				0		67					
Queue Length 95th (ft)	163	114				m0		81					
Internal Link Dist (ft)		81			125			214			71		
Turn Bay Length (ft)													
Base Capacity (vph)	306	644				500		1272					
Starvation Cap Reductn	203	441				0		178					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.15	0.91				0.05		0.79					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 89 (81%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 31.4		Intersection LOS: C	
Intersection Capacity Utilization 59.0%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	29	23	145	811	47	0	0	0
Future Volume (vph)	0	0	0	0	29	23	145	811	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.94			0.97				
Frt					0.941			0.993				
Flt Protected								0.993				
Satd. Flow (prot)	0	0	0	0	1414	0	0	3108	0	0	0	0
Flt Permitted								0.993				
Satd. Flow (perm)	0	0	0	0	1414	0	0	3100	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					17			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			294	
Travel Time (s)		4.7			4.9			15.5			8.0	
Confl. Peds. (#/hr)						71	42		703			
Confl. Bikes (#/hr)						1			65			
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	36	28	149	836	48	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	64	0	0	1033	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					24.0		86.0	86.0				
Total Split (s)					24.0		86.0	86.0				
Total Split (%)					21.8%		78.2%	78.2%				
Maximum Green (s)					19.0		81.0	81.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					12.0		74.0	74.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					20.0			82.0				
Actuated g/C Ratio					0.18			0.75				
v/c Ratio					0.24			0.45				
Control Delay					32.1			6.6				
Queue Delay					0.1			0.4				
Total Delay					32.2			7.0				
LOS					C			A				
Approach Delay					32.3			7.0				
Approach LOS					C			A				
Queue Length 50th (ft)					28			167				
Queue Length 95th (ft)					60			265				
Internal Link Dist (ft)		91			99			490			214	
Turn Bay Length (ft)												
Base Capacity (vph)					271			2319				
Starvation Cap Reductn					0			707				
Spillback Cap Reductn					23			9				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.26			0.64				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 86 (78%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	82	92	0	0	0	0	0	393	62	
Future Volume (vph)	0	0	0	82	92	0	0	0	0	0	393	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.979		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3120	1637	0	0	0	0	0	4317	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3120	1637	0	0	0	0	0	4317	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											41		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												38	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	6%	0%	
Adj. Flow (vph)	0	0	0	88	99	0	0	0	0	0	409	65	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	88	99	0	0	0	0	0	474	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				27.0	27.0						62.0		21.0
Total Split (s)				27.0	27.0						62.0		21.0
Total Split (%)				24.5%	24.5%						56.4%		19%
Maximum Green (s)				22.0	22.0						56.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				15.0	15.0						49.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				24.0	24.0						58.0		
Actuated g/C Ratio				0.22	0.22						0.53		
v/c Ratio				0.13	0.28						0.21		
Control Delay				31.3	33.5						1.0		
Queue Delay				1.3	9.0						0.2		
Total Delay				32.6	42.4						1.2		
LOS				C	D						A		
Approach Delay					37.8						1.2		
Approach LOS					D						A		
Queue Length 50th (ft)				20	44						0		
Queue Length 95th (ft)				41	89						0		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				680	357						2295		
Starvation Cap Reductn				451	220						974		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.38	0.72						0.36		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 103.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	95	15	0	0	0	0	0	0	186	441	0	
Future Volume (vph)	0	95	15	0	0	0	0	0	0	186	441	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.979											
Flt Protected											0.985		
Satd. Flow (prot)	0	3355	0	0	0	0	0	0	0	0	4400	0	
Flt Permitted											0.985		
Satd. Flow (perm)	0	3355	0	0	0	0	0	0	0	0	4400	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		15											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			7										
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	6%	0%	
Adj. Flow (vph)	0	100	16	0	0	0	0	0	0	192	455	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	116	0	0	0	0	0	0	0	0	647	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		29.0								63.0	63.0		18.0
Total Split (s)		29.0								63.0	63.0		18.0
Total Split (%)		26.4%								57.3%	57.3%		16%
Maximum Green (s)		25.0								58.0	58.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								51.0	51.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									59.0		
Actuated g/C Ratio		0.24									0.54		
v/c Ratio		0.14									0.27		
Control Delay		29.4									6.9		
Queue Delay		0.0									0.1		
Total Delay		29.4									7.0		
LOS		C									A		
Approach Delay		29.4									7.0		
Approach LOS		C									A		
Queue Length 50th (ft)		29									30		
Queue Length 95th (ft)		54									47		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		804									2360		
Starvation Cap Reductn		0									0		
Spillback Cap Reductn		1									458		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.14									0.34		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 59.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	63	206	0	0	0	0	0	563	671
Future Volume (vph)	0	0	0	63	206	0	0	0	0	0	563	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.68							0.95	
Frt											0.918	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1449	3051	0	0	0	0	0	3958	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	992	3051	0	0	0	0	0	3958	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											400	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				332								158
Confl. Bikes (#/hr)												38
Peak Hour Factor	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	4%	1%
Adj. Flow (vph)	0	0	0	65	212	0	0	0	0	0	574	685
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	65	212	0	0	0	0	0	1259	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				38.0	38.0						72.0	
Total Split (s)				38.0	38.0						72.0	
Total Split (%)				34.5%	34.5%						65.5%	
Maximum Green (s)				29.0	29.0						67.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				22.0	22.0						60.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				30.0	30.0						68.0	
Actuated g/C Ratio				0.27	0.27						0.62	
v/c Ratio				0.16	0.25						0.48	
Control Delay				35.3	35.9						3.4	
Queue Delay				4.0	5.0						0.1	
Total Delay				39.3	41.0						3.5	
LOS				D	D						A	
Approach Delay					40.6						3.5	
Approach LOS					D						A	
Queue Length 50th (ft)				39	64						0	
Queue Length 95th (ft)				76	94						0	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				395	832						2599	
Starvation Cap Reductn				267	547						289	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.51	0.74						0.55	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 90 (82%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 140.8%		ICU Level of Service H	
Analysis Period (min) 15			

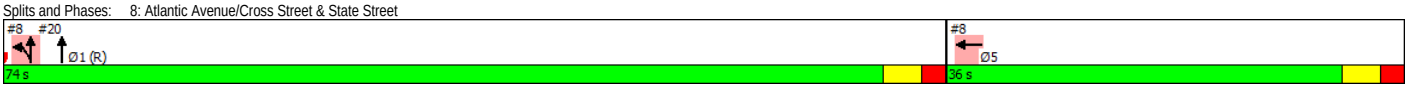
Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	83	41	186	667	52	0	0	0
Future Volume (vph)	0	0	0	0	83	41	186	667	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.91			0.96				
Frt					0.955			0.991				
Flt Protected								0.990				
Satd. Flow (prot)	0	0	0	0	1680	0	0	3012	0	0	0	0
Flt Permitted								0.990				
Satd. Flow (perm)	0	0	0	0	1680	0	0	2997	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					12			11				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						160	51		695			
Confl. Bikes (#/hr)									62			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	3%	2%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	90	45	192	688	54	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	135	0	0	934	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					26.0		74.0	74.0				
Total Split (s)					36.0		74.0	74.0				
Total Split (%)					32.7%		67.3%	67.3%				
Maximum Green (s)					31.0		69.0	69.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					14.0		62.0	62.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					32.0			70.0				
Actuated g/C Ratio					0.29			0.64				
v/c Ratio					0.27			0.49				
Control Delay					29.1			5.5				
Queue Delay					0.0			0.6				
Total Delay					29.1			6.0				
LOS					C			A				
Approach Delay					29.1			6.0				
Approach LOS					C			A				
Queue Length 50th (ft)					66			57				
Queue Length 95th (ft)					119			67				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					497			1920				
Starvation Cap Reductn					0			549				
Spillback Cap Reductn					0			139				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.27			0.68				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	94	0	0	498	22	
Future Volume (vph)	0	94	0	0	498	22	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor					1.00		
Frt		0.865			0.994		
Flt Protected							
Satd. Flow (prot)	0	1484	0	0	4419	0	
Flt Permitted							
Satd. Flow (perm)	0	1484	0	0	4419	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		503			10		
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						40	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96	
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	
Adj. Flow (vph)	0	102	0	0	519	23	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	102	0	0	542	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		23.0			65.0		22.0
Total Split (s)		23.0			65.0		22.0
Total Split (%)		20.9%			59.1%		20%
Maximum Green (s)		19.0			59.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		12.0			52.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		19.0			61.0		
Actuated g/C Ratio		0.17			0.55		
v/c Ratio		0.15			0.22		
Control Delay		0.5			4.3		
Queue Delay		0.0			0.0		
Total Delay		0.5			4.3		
LOS		A			A		
Approach Delay	0.5				4.3		
Approach LOS	A				A		
Queue Length 50th (ft)		0			28		
Queue Length 95th (ft)		0			37		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		672			2454		
Starvation Cap Reductn		0			0		
Spillback Cap Reductn		1			17		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.15			0.22		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 7 (6%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 3.7		Intersection LOS: A	
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	99	149	0	0	0	0	0	0	83	509	0	
Future Volume (vph)	0	99	149	0	0	0	0	0	0	83	509	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		0.99											
Frt		0.910											
Flt Protected											0.993		
Satd. Flow (prot)	0	3310	0	0	0	0	0	0	0	0	4438	0	
Flt Permitted											0.993		
Satd. Flow (perm)	0	3310	0	0	0	0	0	0	0	0	4438	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		154											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			2										
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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	5%	0%	
Adj. Flow (vph)	0	102	154	0	0	0	0	0	0	86	530	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	256	0	0	0	0	0	0	0	0	616	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		30.0								61.0	61.0		19.0
Total Split (s)		30.0								61.0	61.0		19.0
Total Split (%)		27.3%								55.5%	55.5%		17%
Maximum Green (s)		25.0								56.0	56.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								49.0	49.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									57.0		
Actuated g/C Ratio		0.24									0.52		
v/c Ratio		0.28									0.27		
Control Delay		14.6									4.5		
Queue Delay		0.0									0.3		
Total Delay		14.6									4.8		
LOS		B									A		
Approach Delay		14.6									4.8		
Approach LOS		B									A		
Queue Length 50th (ft)		30									15		
Queue Length 95th (ft)		64									19		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		899									2299		
Starvation Cap Reductn		0									999		
Spillback Cap Reductn		4									39		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.29									0.47		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	182	0	0	820	0	0	
Future Volume (vph)	182	0	0	820	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3120	0	0	3127	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3120	0	0	3127	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.94	0.94	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	194	0	0	845	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	194	0	0	845	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.34			0.46			
Control Delay	34.1			9.2			
Queue Delay	2.8			0.0			
Total Delay	36.9			9.2			
LOS	D			A			
Approach Delay	36.9			9.2			
Approach LOS	D			A			
Queue Length 50th (ft)	66			106			
Queue Length 95th (ft)	104			m108			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	567			1819			
Starvation Cap Reductn	268			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.65			0.46			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	23	915	421	207	238	95	284	559	470		
Future Volume (vph)	6	23	915	421	207	238	95	284	559	470		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.97			
Frt					0.850	0.850			0.933			
Flt Protected			0.998					0.950	0.999			
Satd. Flow (prot)	0	0	3318	1489	1323	1427	0	1433	2795	0		
Flt Permitted			0.933					0.950	0.999			
Satd. Flow (perm)	0	0	3102	1489	1323	1427	0	1433	2795	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					14	14				64		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.99	0.99	0.99	0.99		
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	4%	4%	5%		
Adj. Flow (vph)	6	23	934	434	213	245	96	287	565	475		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	963	434	213	245	0	354	1069	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Perm	Split	NA			
Protected Phases			5	5	5	5		1	1		2	6
Permitted Phases	2 5	2 5	2				1					
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		7.0	4.0
Minimum Split (s)			29.0	29.0	29.0	29.0	39.0	39.0	39.0		26.0	6.0
Total Split (s)			39.0	39.0	39.0	39.0	39.0	39.0	39.0		26.0	6.0
Total Split (%)			35.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%		24%	5%
Maximum Green (s)			32.5	32.5	32.5	32.5	32.5	32.5	32.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			15.5	15.5	15.5	15.5	24.5	24.5	24.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			48.1	33.5	33.5	33.5		38.7	38.7			
Actuated g/C Ratio			0.44	0.30	0.30	0.30		0.35	0.35			
v/c Ratio			0.68	0.96	0.53	0.56		0.70	1.09			
Control Delay			5.8	71.7	37.5	38.2		33.5	82.7			
Queue Delay			44.8	44.7	0.0	0.0		0.0	0.0			
Total Delay			50.6	116.4	37.5	38.2		33.5	82.7			
LOS			D	F	D	D		C	F			
Approach Delay			50.6	76.1					70.5			
Approach LOS			D	E					E			
Queue Length 50th (ft)			24	329	136	152		118	~503			
Queue Length 95th (ft)			m16	#550	221	242		#407	#646			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1420	453	402	434		504	983			
Starvation Cap Reductn			534	0	0	0		0	0			
Spillback Cap Reductn			0	151	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			1.09	1.44	0.53	0.56		0.70	1.09			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 52 (47%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 66.2		Intersection LOS: E	
Intersection Capacity Utilization 92.2%		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.

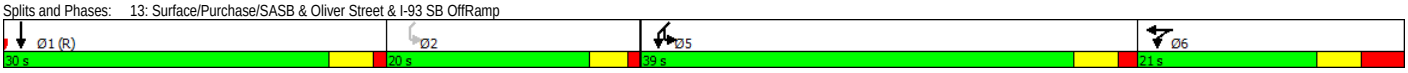
Splits and Phases: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	322	194	551	107	944	466	101	
Future Volume (vph)	322	194	551	107	944	466	101	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			0.99					
Frt			0.976			0.973		
Flt Protected		0.970			0.950	0.961		
Satd. Flow (prot)	0	3005	4368	0	1608	1583	0	
Flt Permitted		0.970			0.950	0.961		
Satd. Flow (perm)	0	3005	4368	0	1608	1583	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			35					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				38				
Peak Hour Factor	0.97	0.97	0.95	0.95	0.99	0.99	0.99	
Heavy Vehicles (%)	1%	2%	4%	1%	1%	1%	1%	
Adj. Flow (vph)	332	200	580	113	954	471	102	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	532	693	0	954	573	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (%)	19.1%	19.1%	27.3%		35.5%	35.5%		18%
Maximum Green (s)	14.0	14.0	25.5		34.0	34.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	18.5		27.0	27.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	26.5		55.0	35.0		
Actuated g/C Ratio		0.15	0.24		0.50	0.32		
v/c Ratio		1.47dl	0.64		1.19	1.14		
Control Delay		133.5	28.2		124.0	120.0		
Queue Delay		0.5	0.1		0.2	0.0		
Total Delay		134.0	28.3		124.1	120.0		
LOS		F	C		F	F		
Approach Delay		134.0	28.3			122.6		
Approach LOS		F	C			F		
Queue Length 50th (ft)		~231	161		~813	~473		
Queue Length 95th (ft)		m#266	206		#1059	#687		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		437	1078		804	503		
Starvation Cap Reductn		22	0		0	0		
Spillback Cap Reductn		0	29		21	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.28	0.66		1.22	1.14		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 47 (43%), Referenced to phase 1:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 101.0 Intersection LOS: F
Intersection Capacity Utilization 103.2% ICU Level of Service G
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: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	96	351	0	0	0	0	0	1239	99	
Future Volume (vph)	0	0	0	96	351	0	0	0	0	0	1239	99	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.989		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3141	0	0	0	0	0	4521	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3141	0	0	0	0	0	4521	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											19		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												36	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	107	390	0	0	0	0	0	1264	101	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	107	390	0	0	0	0	0	1365	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				28.0	28.0						64.0		18.0
Total Split (s)				28.0	28.0						64.0		18.0
Total Split (%)				25.5%	25.5%						58.2%		16%
Maximum Green (s)				23.0	23.0						60.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				16.0	16.0						53.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				24.0	24.0						61.0		
Actuated g/C Ratio				0.22	0.22						0.55		
v/c Ratio				0.32	0.57						0.54		
Control Delay				50.0	53.5						13.6		
Queue Delay				2.3	13.5						0.9		
Total Delay				52.3	66.9						14.4		
LOS				D	E						B		
Approach Delay					63.8						14.4		
Approach LOS					E						B		
Queue Length 50th (ft)				79	153						224		
Queue Length 95th (ft)				138	205						m210		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				336	685						2515		
Starvation Cap Reductn				135	273						778		
Spillback Cap Reductn				0	0						90		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.53	0.95						0.79		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 40 (36%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	448	1408	0	0	
Future Volume (vph)	0	0	448	1408	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.988			
Satd. Flow (prot)	0	0	0	4476	0	0	
Flt Permitted				0.988			
Satd. Flow (perm)	0	0	0	4476	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	
Adj. Flow (vph)	0	0	467	1467	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1934	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.55			
Control Delay				8.4			
Queue Delay				33.3			
Total Delay				41.7			
LOS				D			
Approach Delay				41.7			
Approach LOS				D			
Queue Length 50th (ft)				265			
Queue Length 95th (ft)				m267			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3540			
Starvation Cap Reductn				1724			
Spillback Cap Reductn				192			
Storage Cap Reductn				0			
Reduced v/c Ratio				1.06			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	581	235	178	496	407	433	
Future Volume (vph)	581	235	178	496	407	433	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3079	1454	1391	1716	1577	1621	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3079	1454	1391	1716	1577	1621	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	
Heavy Vehicles (%)	2%	0%	1%	1%	3%	2%	
Adj. Flow (vph)	593	240	182	511	420	446	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	593	240	182	511	420	446	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	36.0	36.0	36.0	47.0	47.0	47.0	20.0
Total Split (s)	43.0	43.0	43.0	47.0	47.0	47.0	20.0
Total Split (%)	39.1%	39.1%	39.1%	42.7%	42.7%	42.7%	18%
Maximum Green (s)	38.0	38.0	38.0	42.0	42.0	42.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	35.0	35.0	35.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	40.0	38.0	40.0	44.0	44.0	44.0	
Actuated g/C Ratio	0.36	0.35	0.36	0.40	0.40	0.40	
v/c Ratio	0.53	0.48	0.36	0.74	0.67	0.69	
Control Delay	29.7	32.2	28.2	14.0	11.1	11.8	
Queue Delay	1.6	0.0	0.0	0.6	1.0	0.9	
Total Delay	31.3	32.2	28.2	14.5	12.1	12.7	
LOS	C	C	C	B	B	B	
Approach Delay	30.9					13.2	
Approach LOS	C					B	
Queue Length 50th (ft)	171	132	93	156	63	81	
Queue Length 95th (ft)	227	209	154	489	167	224	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1119	502	505	686	630	648	
Starvation Cap Reductn	0	0	0	30	66	57	
Spillback Cap Reductn	336	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.48	0.36	0.78	0.74	0.75	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 55.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	501	575	0	0	0	451	0	804	172	0	0	0	
Future Volume (vph)	501	575	0	0	0	451	0	804	172	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.60							0.92					
Frt						0.850		0.974					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	3978	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1783	3079	0	0	0	2448	0	3978	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	568					568			1035				
Confl. Bikes (#/hr)						4			82				
Peak Hour Factor	0.98	0.98	0.98	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	5%	4%	0%	0%	0%	
Adj. Flow (vph)	511	587	0	0	0	475	0	846	181	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	511	587	0	0	0	475	0	1027	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					26.0		37.0					20.0
Total Split (s)	27.0					26.0		37.0					20.0
Total Split (%)	24.5%					23.6%		33.6%					18%
Maximum Green (s)	22.0					21.0		32.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						14.0		25.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	23.0	69.0				22.0		34.0					
Actuated g/C Ratio	0.21	0.63				0.20		0.31					
v/c Ratio	0.82	0.30				0.97		0.84					
Control Delay	45.6	4.5				78.6		23.5					
Queue Delay	45.8	0.5				0.0		48.8					
Total Delay	91.4	5.0				78.6		72.2					
LOS	F	A				E		E					
Approach Delay		45.2			78.6			72.2					
Approach LOS		D			E			E					
Queue Length 50th (ft)	193	69				190		146					
Queue Length 95th (ft)	#265	63				#307		m209					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	624	1931				489		1229					
Starvation Cap Reductn	153	866				0		0					
Spillback Cap Reductn	7	0				0		344					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.08	0.55				0.97		1.16					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 78 (71%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 62.0		Intersection LOS: E	
Intersection Capacity Utilization 80.4%		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.

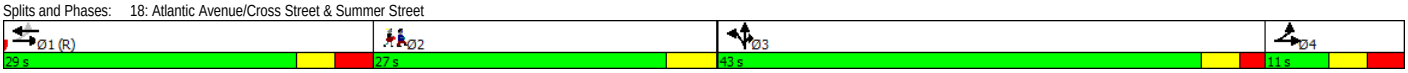
Splits and Phases: 17: Atlantic Avenue/Cross Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	48	446	0	0	323	231	185	796	373	0	0	0	
Future Volume (vph)	48	446	0	0	323	231	185	796	373	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.937				0.850				
Flt Protected		0.995					0.950	0.999					
Satd. Flow (prot)	0	3208	0	0	3955	0	1449	2891	1439	0	0	0	
Flt Permitted		0.783					0.950	0.999					
Satd. Flow (perm)	0	2524	0	0	3955	0	1449	2891	1439	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						31			56				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92	
Heavy Vehicles (%)	8%	0%	0%	0%	1%	2%	2%	4%	1%	0%	0%	0%	
Adj. Flow (vph)	51	474	0	0	347	248	203	875	410	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	525	0	0	595	0	183	895	410	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				29.0		43.0	43.0	43.0				27.0
Total Split (s)	11.0				29.0		43.0	43.0	43.0				27.0
Total Split (%)	10.0%				26.4%		39.1%	39.1%	39.1%				25%
Maximum Green (s)	5.0				23.0		38.0	38.0	38.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				16.0		31.0	31.0	31.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		32.0			25.0		39.0	39.0	39.0				
Actuated g/C Ratio		0.29			0.23		0.35	0.35	0.35				
v/c Ratio		0.68			0.66		0.36	0.87	0.80				
Control Delay		37.3			42.8		28.7	44.1	45.8				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		37.3			42.8		28.7	44.1	45.8				
LOS		D			D		C	D	D				
Approach Delay		37.3			42.8			42.7					
Approach LOS		D			D			D					
Queue Length 50th (ft)		156			141		104	321	259				
Queue Length 95th (ft)		209			183		171	#442	#421				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		777			898		513	1024	510				
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		0.68			0.66		0.36	0.87	0.80				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 76 (69%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 41.6 Intersection LOS: D
Intersection Capacity Utilization 62.4% 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: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	1235	0	
Future Volume (vph)	0	0	0	0	1235	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5085	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5085	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	
Adj. Flow (vph)	0	0	0	0	1260	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	1260	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					81.0		29.0
Total Split (s)					81.0		29.0
Total Split (%)					73.6%		26%
Maximum Green (s)					76.0		23.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					69.0		16.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					77.0		
Actuated g/C Ratio					0.70		
v/c Ratio					0.35		
Control Delay					3.0		
Queue Delay					0.2		
Total Delay					3.2		
LOS					A		
Approach Delay					3.2		
Approach LOS					A		
Queue Length 50th (ft)					52		
Queue Length 95th (ft)					58		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3559		
Starvation Cap Reductn					1260		
Spillback Cap Reductn					1		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.55		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 3.2		Intersection LOS: A	
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations							
Traffic Volume (vph)	0	0	708	0	0	0	
Future Volume (vph)	0	0	708	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3505	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3505	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	
Adj. Flow (vph)	0	0	730	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	730	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			74.0				26.0
Total Split (s)			74.0				36.0
Total Split (%)			67.3%				33%
Maximum Green (s)			69.0				31.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			62.0				14.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			70.0				
Actuated g/C Ratio			0.64				
v/c Ratio			0.33				
Control Delay			1.9				
Queue Delay			0.2				
Total Delay			2.1				
LOS			A				
Approach Delay			2.1				
Approach LOS			A				
Queue Length 50th (ft)			18				
Queue Length 95th (ft)			22				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2230				
Starvation Cap Reductn			674				
Spillback Cap Reductn			0				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.47				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 22.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	175	0	0	0	135	1059
Future Volume (vph)	175	0	0	0	135	1059
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.97					0.99
Frt						
Flt Protected	0.950					0.994
Satd. Flow (prot)	2929	0	0	0	0	4549
Flt Permitted	0.950					0.994
Satd. Flow (perm)	2849	0	0	0	0	4522
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	19				124	
Peak Hour Factor	0.96	0.96	0.92	0.92	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	0%	2%	2%
Adj. Flow (vph)	182	0	0	0	136	1070
Shared Lane Traffic (%)						
Lane Group Flow (vph)	182	0	0	0	0	1206
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	29.0				81.0	81.0
Total Split (s)	29.0				81.0	81.0
Total Split (%)	26.4%				73.6%	73.6%
Maximum Green (s)	23.0				76.0	76.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	16.0				69.0	69.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	24.0					77.0
Actuated g/C Ratio	0.22					0.70
v/c Ratio	0.28					0.38
Control Delay	8.1					1.4
Queue Delay	0.6					0.3
Total Delay	8.6					1.7
LOS	A					A
Approach Delay	8.6					1.7
Approach LOS	A					A
Queue Length 50th (ft)	9					24
Queue Length 95th (ft)	13					17
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	639					3184
Starvation Cap Reductn	211					1192
Spillback Cap Reductn	0					47
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.43					0.61

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 2.6		Intersection LOS: A	
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	25	158	0	0	160	31	16	454	257	0	0	0	
Future Volume (vph)	25	158	0	0	160	31	16	454	257	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.99								
Frt					0.978				0.850				
Flt Protected		0.993						0.998					
Satd. Flow (prot)	0	3066	0	0	1535	0	0	3122	1454	0	0	0	
Flt Permitted		0.890						0.998					
Satd. Flow (perm)	0	2748	0	0	1535	0	0	3122	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					8								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Peds. (#/hr)						16							
Confl. Bikes (#/hr)						29			60				
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	2%	0%	0%	5%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	26	165	0	0	165	32	16	468	265	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	191	0	0	197	0	0	484	265	0	0	0	
Turn Type	Perm	NA			NA		Split	NA	Prot				
Protected Phases		5			5		1	1	1				2
Permitted Phases	5												
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (%)	24.5%	24.5%			24.5%		55.5%	55.5%	55.5%				20%
Maximum Green (s)	22.0	22.0			22.0		56.0	56.0	56.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	15.0	15.0			15.0		49.0	49.0	49.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		23.0			23.0			57.0	57.0				
Actuated g/C Ratio		0.21			0.21			0.52	0.52				
v/c Ratio		0.33			0.60			0.30	0.35				
Control Delay		42.2			46.5			18.7	20.1				
Queue Delay		4.3			0.0			0.7	1.3				
Total Delay		46.5			46.5			19.4	21.4				
LOS		D			D			B	C				
Approach Delay		46.5			46.5			20.1					
Approach LOS		D			D			C					
Queue Length 50th (ft)		72			122			80	83				
Queue Length 95th (ft)		110			200			120	139				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		574			327			1617	753				
Starvation Cap Reductn		305			0			759	298				
Spillback Cap Reductn		0			0			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.71			0.60			0.56	0.58				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 71 (65%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 29.1		Intersection LOS: C	
Intersection Capacity Utilization 47.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	522	346	0	0	0	0	0	691	118	
Future Volume (vph)	0	0	0	522	346	0	0	0	0	0	691	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.978		
Flt Protected				0.950	0.985								
Satd. Flow (prot)	0	0	0	1614	1778	0	0	0	0	0	4432	0	
Flt Permitted				0.950	0.985								
Satd. Flow (perm)	0	0	0	1614	1778	0	0	0	0	0	4432	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											30		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												44	
Peak Hour Factor	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	533	353	0	0	0	0	0	705	120	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	373	513	0	0	0	0	0	825	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				51.0	51.0						35.0		24.0
Total Split (s)				51.0	51.0						35.0		24.0
Total Split (%)				46.4%	46.4%						31.8%		22%
Maximum Green (s)				46.0	46.0						29.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				39.0	39.0						22.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				48.0	48.0						31.0		
Actuated g/C Ratio				0.44	0.44						0.28		
v/c Ratio				0.53	0.66						0.65		
Control Delay				26.2	29.7						31.2		
Queue Delay				0.0	0.0						0.0		
Total Delay				26.2	29.7						31.2		
LOS				C	C						C		
Approach Delay					28.2						31.2		
Approach LOS					C						C		
Queue Length 50th (ft)				198	295						194		
Queue Length 95th (ft)				296	422						242		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				704	775						1270		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.53	0.66						0.65		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 4 (4%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	65	491	0	0	0
Future Volume (vph)	0	65	491	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3124	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3124	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		393				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.91	0.91	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	71	517	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	71	517	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		33.0	77.0			
Total Split (s)		33.0	77.0			
Total Split (%)		30.0%	70.0%			
Maximum Green (s)		29.0	72.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		22.0	65.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		29.0	72.0			
Actuated g/C Ratio		0.26	0.65			
v/c Ratio		0.10	0.25			
Control Delay		0.3	1.8			
Queue Delay		0.0	0.3			
Total Delay		0.3	2.0			
LOS		A	A			
Approach Delay	0.3		2.0			
Approach LOS	A		A			
Queue Length 50th (ft)		0	21			
Queue Length 95th (ft)		0	23			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		687	2044			
Starvation Cap Reductn		0	879			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.10	0.44			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 68 (62%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 29.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	104	285	335	0	0	0	0	0	444	74
Future Volume (vph)	0	0	104	285	335	0	0	0	0	0	444	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.98	
Frt			0.865								0.978	
Flt Protected					0.978							
Satd. Flow (prot)	0	0	1465	0	3132	0	0	0	0	0	3013	0
Flt Permitted					0.978							
Satd. Flow (perm)	0	0	1465	0	3132	0	0	0	0	0	3013	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											18	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												135
Confl. Bikes (#/hr)												40
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	1%	2%	1%	0%	0%	0%	0%	0%	3%	2%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	109	294	345	0	0	0	0	0	448	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	109	0	639	0	0	0	0	0	523	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			73.0	73.0	73.0						37.0	
Total Split (s)			73.0	73.0	73.0						37.0	
Total Split (%)			66.4%	66.4%	66.4%						33.6%	
Maximum Green (s)			64.0	64.0	64.0						32.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			57.0	57.0	57.0						25.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			69.0		69.0						33.0	
Actuated g/C Ratio			0.63		0.63						0.30	
v/c Ratio			0.12		0.33						0.57	
Control Delay			8.7		10.2						34.3	
Queue Delay			0.0		0.0						0.0	
Total Delay			8.7		10.2						34.3	
LOS			A		B						C	
Approach Delay		8.7			10.2						34.3	
Approach LOS		A			B						C	
Queue Length 50th (ft)			29		102						158	
Queue Length 95th (ft)			52		135						214	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			918		1964						916	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.12		0.33						0.57	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

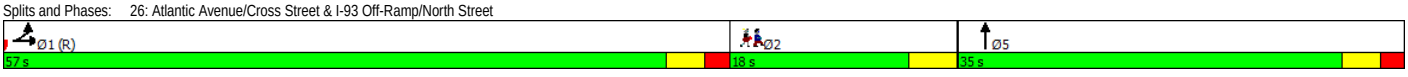
Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	751	46	0	0	0	0	0	540	34	0	0	0	
Future Volume (vph)	751	46	0	0	0	0	0	540	34	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								0.99					
Frt								0.991					
Flt Protected	0.950	0.958											
Satd. Flow (prot)	1498	1517	0	0	0	0	0	3083	0	0	0	0	
Flt Permitted	0.950	0.958											
Satd. Flow (perm)	1498	1517	0	0	0	0	0	3083	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									68				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	774	47	0	0	0	0	0	568	36	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	449	372	0	0	0	0	0	604	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	57.0	57.0						35.0					18.0
Total Split (%)	51.8%	51.8%						31.8%					16%
Maximum Green (s)	52.0	52.0						30.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	53.0	53.0						31.0					
Actuated g/C Ratio	0.48	0.48						0.28					
v/c Ratio	0.62	0.51						0.69					
Control Delay	25.8	22.7						47.3					
Queue Delay	0.0	0.0						0.0					
Total Delay	25.8	22.7						47.3					
LOS	C	C						D					
Approach Delay		24.4						47.3					
Approach LOS		C						D					
Queue Length 50th (ft)	238	184						236					
Queue Length 95th (ft)	355	277						296					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	721	730						873					
Starvation Cap Reductn	0	0						0					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.62	0.51						0.69					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 72 (65%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	47	0	0	107	88	472	738	74	0	0	0
Future Volume (vph)	27	47	0	0	107	88	472	738	74	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.77				0.84			0.84				
Frt					0.939			0.991				
Flt Protected	0.950							0.982				
Satd. Flow (prot)	1562	1676	0	0	1317	0	0	2922	0	0	0	0
Flt Permitted	0.521							0.982				
Satd. Flow (perm)	660	1676	0	0	1317	0	0	2569	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								10				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	496					496	394		2640			
Confl. Bikes (#/hr)						10			67			
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	4%	0%	2%	4%	0%	5%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	32	55	0	0	115	95	482	753	76	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	55	0	0	210	0	0	1311	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (%)	35.5%	35.5%			35.5%		64.5%	64.5%				
Maximum Green (s)	34.0	34.0			34.0		66.0	66.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	27.0	27.0			27.0		59.0	59.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	35.0	35.0			35.0			67.0				
Actuated g/C Ratio	0.32	0.32			0.32			0.61				
v/c Ratio	0.15	0.10			0.50			0.74				
Control Delay	29.4	27.2			35.5			8.6				
Queue Delay	0.0	0.0			0.0			1.2				
Total Delay	29.4	27.2			35.5			9.8				
LOS	C	C			D			A				
Approach Delay		28.0			35.5			9.8				
Approach LOS		C			D			A				
Queue Length 50th (ft)	16	27			120			70				
Queue Length 95th (ft)	39	54			195			111				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	210	533			419			1783				
Starvation Cap Reductn	0	0			0			185				
Spillback Cap Reductn	0	0			0			253				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.15	0.10			0.50			0.86				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

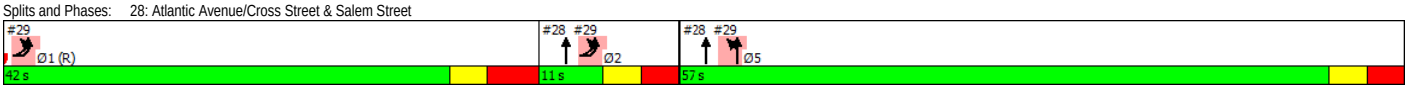
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	825	29	0	0			
Future Volume (vph)	0	0	825	29	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.995						
Flt Protected									
Satd. Flow (prot)	0	0	3469	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3469	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			5						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				152					
Confl. Bikes (#/hr)				57					
Peak Hour Factor	0.92	0.92	0.98	0.98	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	842	30	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	872	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							42.0	10.0	57.0
Total Split (s)							42.0	11.0	57.0
Total Split (%)							38%	10%	52%
Maximum Green (s)							35.0	5.0	51.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							28.0		44.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			62.0						
Actuated g/C Ratio			0.56						
v/c Ratio			0.45						
Control Delay			8.7						
Queue Delay			2.8						
Total Delay			11.6						
LOS			B						
Approach Delay			11.6						
Approach LOS			B						
Queue Length 50th (ft)			136						
Queue Length 95th (ft)			155						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			1957						
Starvation Cap Reductn			941						
Spillback Cap Reductn			208						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.86						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 29.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

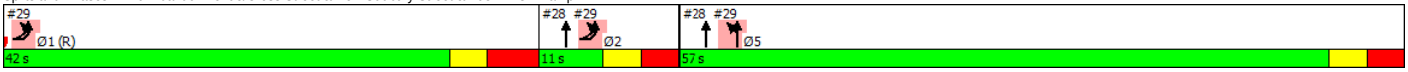


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	256	125	0	196	647	0	0	0	0		
Future Volume (vph)	256	125	0	196	647	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Frt											
Flt Protected		0.950			0.989						
Satd. Flow (prot)	0	3547	0	0	3299	0	0	0	0		
Flt Permitted		0.950			0.989						
Satd. Flow (perm)	0	3547	0	0	3299	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Peak Hour Factor	0.96	0.96	0.96	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	0%	10%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	267	130	0	200	660	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	397	0	0	860	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				57.0	57.0					42.0	10.0
Total Split (s)				57.0	57.0					42.0	11.0
Total Split (%)				51.8%	51.8%					38%	10%
Maximum Green (s)				51.0	51.0					35.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				44.0	44.0					28.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		47.0			52.0						
Actuated g/C Ratio		0.43			0.47						
v/c Ratio		0.26			0.55						
Control Delay		20.9			6.4						
Queue Delay		0.0			0.1						
Total Delay		20.9			6.5						
LOS		C			A						
Approach Delay		20.9			6.5						
Approach LOS		C			A						
Queue Length 50th (ft)		91			213						
Queue Length 95th (ft)		126			195						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1515			1559						
Starvation Cap Reductn		0			115						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.26			0.60						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 46.9%		ICU Level of Service A	
Analysis Period (min) 15			

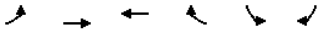
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	58	189	1	2	17	1
Future Volume (Veh/h)	58	189	1	2	17	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.50	0.50	0.85	0.85
Hourly flow rate (vph)	62	201	2	4	20	1
Pedestrians	62			38	103	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	5			3	9	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	205					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			366		336	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			290		257	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1100		597	681

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	263	6	21
Volume Left	0	2	20
Volume Right	201	0	1
cSH	1700	1100	600
Volume to Capacity	0.15	0.00	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	2.8	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.8	11.2
Approach LOS			B

Intersection Summary				
Average Delay			0.9	
Intersection Capacity Utilization			36.5%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	19	26	0	2	25
Future Volume (Veh/h)	27	19	26	0	2	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.82	0.82	0.81	0.81
Hourly flow rate (vph)	29	20	32	0	2	31
Pedestrians		13	35		137	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	3		11	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	169				282	182
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	169				282	182
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	96
cM capacity (veh/h)	1259				598	759

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	49	32	33
Volume Left	29	0	2
Volume Right	0	0	31
cSH	1259	1700	746
Volume to Capacity	0.02	0.02	0.04
Queue Length 95th (ft)	2	0	3
Control Delay (s)	4.8	0.0	10.0
Lane LOS	A		B
Approach Delay (s)	4.8	0.0	10.0
Approach LOS			B

Intersection Summary				
Average Delay			5.0	
Intersection Capacity Utilization			26.7%	ICU Level of Service A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	25	911	0	0	0
Future Volume (Veh/h)	0	25	911	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	32	949	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	949	474			949	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	366	0			366	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	477	837			937	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	16	16	474	474
Volume Left	0	0	0	0
Volume Right	16	16	0	0
cSH	837	837	1700	1700
Volume to Capacity	0.02	0.02	0.28	0.28
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	9.4	9.4	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.4		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			35.2%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	45	3	10
Future Volume (Veh/h)	0	0	15	45	3	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.81	0.81
Hourly flow rate (vph)	0	0	16	49	4	12
Pedestrians	104					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	195	114	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	195	114	120			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	99			
cM capacity (veh/h)	789	944	1437			

Direction, Lane #	NB 1	SB 1
Volume Total	65	16
Volume Left	16	0
Volume Right	0	12
cSH	1437	1700
Volume to Capacity	0.01	0.01
Queue Length 95th (ft)	1	0
Control Delay (s)	1.9	0.0
Lane LOS	A	
Approach Delay (s)	1.9	0.0
Approach LOS		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	16.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	41	11	2	112	11	33
Future Volume (Veh/h)	41	11	2	112	11	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.84	0.84	0.90	0.90
Hourly flow rate (vph)	43	11	2	133	12	37
Pedestrians	73			164	85	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	6			14	7	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			139		344	298
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		344	298
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1354		557	593

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	135	49
Volume Left	0	2	12
Volume Right	11	0	37
cSH	1700	1354	584
Volume to Capacity	0.03	0.00	0.08
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.1	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.7
Approach LOS			B

Intersection Summary					
Average Delay			2.5		
Intersection Capacity Utilization			32.8%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	196	69	0	0	0	119	0	877	58	0	0	0	
Future Volume (vph)	196	69	0	0	0	119	0	877	58	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt						0.865		0.991					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3112	0	0	0	1676	0	3012	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3112	0	0	0	1676	0	3012	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						277		9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			205			294			151		
Travel Time (s)		4.4			5.6			8.0			4.1		
Confl. Bikes (#/hr)						1			76				
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	204	72	0	0	0	125	0	914	60	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	204	72	0	0	0	125	0	974	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				8.0		8.0					8.0
Minimum Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (%)	18.2%	18.2%				12.7%		52.7%					16%
Maximum Green (s)	15.0	15.0				9.0		53.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					2.0
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	8.0	8.0				2.0		46.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	16.0	16.0				10.0		54.0					
Actuated g/C Ratio	0.15	0.15				0.09		0.49					
v/c Ratio	0.96	0.16				0.31		0.66					
Control Delay	96.5	39.9				2.0		16.8					
Queue Delay	48.0	1.2				0.0		0.4					
Total Delay	144.5	41.1				2.0		17.3					
LOS	F	D				A		B					
Approach Delay		117.5			2.0			17.3					
Approach LOS		F			A			B					
Queue Length 50th (ft)	154	24				0		113					
Queue Length 95th (ft)	#323	48				m0		203					
Internal Link Dist (ft)		81			125			214			71		
Turn Bay Length (ft)													
Base Capacity (vph)	212	452				404		1483					
Starvation Cap Reductn	86	246				0		158					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.62	0.35				0.31		0.74					

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 36.0 Intersection LOS: D
Intersection Capacity Utilization 73.8% 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: 3: Atlantic Avenue/Cross Street & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	26	20	90	916	35	0	0	0
Future Volume (vph)	0	0	0	0	26	20	90	916	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.92			0.98				
Frt					0.941			0.995				
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	1376	0	0	3167	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	1376	0	0	3162	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					2			9				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			294	
Travel Time (s)		4.7			4.9			15.5			8.0	
Confl. Peds. (#/hr)						100	47		1255			
Confl. Bikes (#/hr)						1			77			
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	31	24	93	944	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	55	0	0	1073	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					5			1				
Permitted Phases							1					
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					23.0		87.0	87.0				
Total Split (s)					23.0		87.0	87.0				
Total Split (%)					20.9%		79.1%	79.1%				
Maximum Green (s)					18.0		82.0	82.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					11.0		75.0	75.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					19.0			83.0				
Actuated g/C Ratio					0.17			0.75				
v/c Ratio					0.23			0.45				
Control Delay					40.8			2.6				
Queue Delay					0.0			0.1				
Total Delay					40.8			2.6				
LOS					D			A				
Approach Delay					40.8			2.6				
Approach LOS					D			A				
Queue Length 50th (ft)					33			116				
Queue Length 95th (ft)					66			71				
Internal Link Dist (ft)		91			99			490			214	
Turn Bay Length (ft)												
Base Capacity (vph)					239			2388				
Starvation Cap Reductn					0			224				
Spillback Cap Reductn					0			67				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.23			0.50				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 107.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	82	33	0	0	0	0	0	979	31	
Future Volume (vph)	0	0	0	82	33	0	0	0	0	0	979	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.995		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3090	1605	0	0	0	0	0	4592	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3090	1605	0	0	0	0	0	4592	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											6		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												50	
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	85	34	0	0	0	0	0	1088	34	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	85	34	0	0	0	0	0	1122	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				31.0	31.0						58.0		21.0
Total Split (s)				31.0	31.0						58.0		21.0
Total Split (%)				28.2%	28.2%						52.7%		19%
Maximum Green (s)				26.0	26.0						52.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				19.0	19.0						45.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				28.0	28.0						54.0		
Actuated g/C Ratio				0.25	0.25						0.49		
v/c Ratio				0.11	0.08						0.50		
Control Delay				35.7	36.5						6.3		
Queue Delay				1.2	1.8						0.1		
Total Delay				37.0	38.3						6.4		
LOS				D	D						A		
Approach Delay					37.3						6.4		
Approach LOS					D						A		
Queue Length 50th (ft)				0	19						35		
Queue Length 95th (ft)				0	m0						53		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				786	408						2257		
Starvation Cap Reductn				552	293						237		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.36	0.30						0.56		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 115.1%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	146	17	0	0	0	0	0	0	119	993	0	
Future Volume (vph)	0	146	17	0	0	0	0	0	0	119	993	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.984											
Flt Protected											0.995		
Satd. Flow (prot)	0	3374	0	0	0	0	0	0	0	0	4594	0	
Flt Permitted											0.995		
Satd. Flow (perm)	0	3374	0	0	0	0	0	0	0	0	4594	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		10											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			5										
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	
Adj. Flow (vph)	0	160	19	0	0	0	0	0	0	131	1091	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	179	0	0	0	0	0	0	0	0	1222	0	
Turn Type		NA								Perm	NA		
Protected Phases		5									1		2
Permitted Phases										1			
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		26.0								66.0	66.0		18.0
Total Split (s)		26.0								66.0	66.0		18.0
Total Split (%)		23.6%								60.0%	60.0%		16%
Maximum Green (s)		22.0								61.0	61.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		15.0								54.0	54.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		23.0									62.0		
Actuated g/C Ratio		0.21									0.56		
v/c Ratio		0.25									0.47		
Control Delay		35.3									5.3		
Queue Delay		0.3									0.1		
Total Delay		35.6									5.4		
LOS		D									A		
Approach Delay		35.6									5.4		
Approach LOS		D									A		
Queue Length 50th (ft)		52									54		
Queue Length 95th (ft)		85									61		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		713									2589		
Starvation Cap Reductn		0									392		
Spillback Cap Reductn		202									375		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.35									0.56		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 102 (93%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	101	168	0	0	0	0	0	1011	292
Future Volume (vph)	0	0	0	101	168	0	0	0	0	0	1011	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.78							0.98	
Frt											0.966	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1464	3022	0	0	0	0	0	4392	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1143	3022	0	0	0	0	0	4392	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											113	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				219								84
Confl. Bikes (#/hr)												50
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	0	0	0	109	181	0	0	0	0	0	1064	307
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	109	181	0	0	0	0	0	1371	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				42.0	42.0						68.0	
Total Split (s)				42.0	42.0						68.0	
Total Split (%)				38.2%	38.2%						61.8%	
Maximum Green (s)				33.0	33.0						63.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				26.0	26.0						56.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				34.0	34.0						64.0	
Actuated g/C Ratio				0.31	0.31						0.58	
v/c Ratio				0.24	0.19						0.53	
Control Delay				31.8	30.4						1.0	
Queue Delay				14.5	4.9						0.0	
Total Delay				46.3	35.3						1.0	
LOS				D	D						A	
Approach Delay					39.4						1.0	
Approach LOS					D						A	
Queue Length 50th (ft)				64	52						1	
Queue Length 95th (ft)				m110	82						6	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				452	934						2602	
Starvation Cap Reductn				318	680						29	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.81	0.71						0.53	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 145.8%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	132	57	136	1092	36	0	0	0
Future Volume (vph)	0	0	0	0	132	57	136	1092	36	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.94			0.98				
Frt					0.959			0.996				
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	1732	0	0	3139	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	0	0	0	1732	0	0	3123	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					3			5				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						177	97		780			
Confl. Bikes (#/hr)						4			75			
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	139	60	140	1126	37	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	199	0	0	1303	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					35.0		75.0	75.0				
Total Split (s)					35.0		75.0	75.0				
Total Split (%)					31.8%		68.2%	68.2%				
Maximum Green (s)					30.0		70.0	70.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					23.0		63.0	63.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					31.0			71.0				
Actuated g/C Ratio					0.28			0.65				
v/c Ratio					0.41			0.64				
Control Delay					34.6			5.3				
Queue Delay					0.0			0.1				
Total Delay					34.6			5.4				
LOS					C			A				
Approach Delay					34.6			5.4				
Approach LOS					C			A				
Queue Length 50th (ft)					112			113				
Queue Length 95th (ft)					181			m128				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					490			2027				
Starvation Cap Reductn					0			114				
Spillback Cap Reductn					9			85				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.41			0.68				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	89	0	0	1059	3	
Future Volume (vph)	0	89	0	0	1059	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor					1.00		
Frt		0.865					
Flt Protected							
Satd. Flow (prot)	0	1498	0	0	4576	0	
Flt Permitted							
Satd. Flow (perm)	0	1498	0	0	4576	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		302			1		
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						52	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.90	0.90	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	0	98	0	0	1177	3	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	98	0	0	1180	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		19.0			69.0		22.0
Total Split (s)		19.0			69.0		22.0
Total Split (%)		17.3%			62.7%		20%
Maximum Green (s)		15.0			63.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		8.0			56.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		15.0			65.0		
Actuated g/C Ratio		0.14			0.59		
v/c Ratio		0.21			0.44		
Control Delay		1.0			2.1		
Queue Delay		0.0			0.0		
Total Delay		1.0			2.1		
LOS		A			A		
Approach Delay	1.0				2.1		
Approach LOS	A				A		
Queue Length 50th (ft)		0			25		
Queue Length 95th (ft)		0			29		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		465			2704		
Starvation Cap Reductn		0			58		
Spillback Cap Reductn		0			0		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.21			0.45		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 100 (91%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 2.0		Intersection LOS: A	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	201	68	0	0	0	0	0	0	84	1063	0	
Future Volume (vph)	0	201	68	0	0	0	0	0	0	84	1063	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.962											
Flt Protected											0.996		
Satd. Flow (prot)	0	3482	0	0	0	0	0	0	0	0	4558	0	
Flt Permitted											0.996		
Satd. Flow (perm)	0	3482	0	0	0	0	0	0	0	0	4558	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		35											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			4										
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	2%	2%	0%	
Adj. Flow (vph)	0	258	87	0	0	0	0	0	0	93	1181	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	345	0	0	0	0	0	0	0	0	1274	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		19.0								72.0	72.0		19.0
Total Split (s)		19.0								72.0	72.0		19.0
Total Split (%)		17.3%								65.5%	65.5%		17%
Maximum Green (s)		14.0								67.0	67.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		7.0								60.0	60.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		15.0									68.0		
Actuated g/C Ratio		0.14									0.62		
v/c Ratio		0.68									0.45		
Control Delay		48.2									1.1		
Queue Delay		58.3									0.1		
Total Delay		106.5									1.2		
LOS		F									A		
Approach Delay		106.5									1.2		
Approach LOS		F									A		
Queue Length 50th (ft)		111									9		
Queue Length 95th (ft)		135									10		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		505									2817		
Starvation Cap Reductn		0									284		
Spillback Cap Reductn		222									6		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		1.22									0.50		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	285	0	0	756	0	0	
Future Volume (vph)	285	0	0	756	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3152	0	0	3158	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3152	0	0	3158	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.95	0.95	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	300	0	0	788	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	300	0	0	788	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.52			0.43			
Control Delay	29.9			5.2			
Queue Delay	37.2			0.0			
Total Delay	67.0			5.2			
LOS	E			A			
Approach Delay	67.0			5.2			
Approach LOS	E			A			
Queue Length 50th (ft)	112			99			
Queue Length 95th (ft)	158			97			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	573			1837			
Starvation Cap Reductn	283			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	1.03			0.43			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 22.3		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	6	757	533	761	248	74	376	502	315		
Future Volume (vph)	6	6	757	533	761	248	74	376	502	315		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.98			
Frt					0.850	0.850			0.945			
Flt Protected			0.999					0.950	0.998			
Satd. Flow (prot)	0	0	3321	1475	1323	1427	0	1438	2853	0		
Flt Permitted			0.955					0.950	0.998			
Satd. Flow (perm)	0	0	3175	1475	1323	1427	0	1438	2853	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					18	18				76		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.98	0.98	0.98	0.98		
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	2%	3%	2%	7%		
Adj. Flow (vph)	6	6	772	549	785	256	76	384	512	321		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	784	549	785	256	0	422	871	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Split	Split	NA			
Protected Phases			5	5	5	5	1	1	1		2	6
Permitted Phases	2 5	2 5	2									
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		4.0	4.0
Minimum Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (%)			31.8%	31.8%	31.8%	31.8%	39.1%	39.1%	39.1%		24%	5%
Maximum Green (s)			28.5	28.5	28.5	28.5	36.5	36.5	36.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			21.5	21.5	21.5	21.5	28.5	28.5	28.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			44.1	29.5	29.5	29.5		42.7	42.7			
Actuated g/C Ratio			0.40	0.27	0.27	0.27		0.39	0.39			
v/c Ratio			0.60	1.39	2.22	0.67		0.76	0.79			
Control Delay			3.7	223.4	580.0	45.8		35.7	31.7			
Queue Delay			5.3	10.7	0.0	0.0		0.0	0.0			
Total Delay			8.9	234.1	580.0	45.8		35.7	31.7			
LOS			A	F	F	D		D	C			
Approach Delay			8.9	374.6					33.0			
Approach LOS			A	F					C			
Queue Length 50th (ft)			8	~568	~983	169		209	228			
Queue Length 95th (ft)			m6	#800	#1240	268		#486	#430			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1310	395	354	382		558	1107			
Starvation Cap Reductn			453	0	0	0		0	0			
Spillback Cap Reductn			0	220	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			0.91	3.14	2.22	0.67		0.76	0.79			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 19 (17%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.22
Intersection Signal Delay: 176.0 Intersection LOS: F
Intersection Capacity Utilization 104.4% ICU Level of Service G
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: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	382	225	1016	116	770	193	49	
Future Volume (vph)	382	225	1016	116	770	193	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			1.00					
Frt			0.985			0.970		
Flt Protected		0.970			0.950	0.962		
Satd. Flow (prot)	0	3005	4494	0	1608	1546	0	
Flt Permitted		0.970			0.950	0.962		
Satd. Flow (perm)	0	3005	4494	0	1608	1546	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			18					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				41				
Peak Hour Factor	0.85	0.85	0.91	0.91	0.98	0.98	0.98	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	4%	0%	
Adj. Flow (vph)	449	265	1116	127	786	197	50	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	714	1243	0	786	247	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (%)	19.1%	19.1%	34.5%		28.2%	28.2%		18%
Maximum Green (s)	14.0	14.0	33.5		26.0	26.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	26.5		19.0	19.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	34.5		47.0	27.0		
Actuated g/C Ratio		0.15	0.31		0.43	0.25		
v/c Ratio		1.99dl	0.87		1.14	0.65		
Control Delay		309.7	24.7		112.3	46.5		
Queue Delay		0.5	1.1		0.0	0.0		
Total Delay		310.1	25.8		112.4	46.5		
LOS		F	C		F	D		
Approach Delay		310.1	25.8			96.6		
Approach LOS		F	C			F		
Queue Length 50th (ft)		~368	123		~652	157		
Queue Length 95th (ft)		m#270	101		#886	247		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		437	1421		687	379		
Starvation Cap Reductn		21	0		0	0		
Spillback Cap Reductn		0	54		4	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.72	0.91		1.15	0.65		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.63			
Intersection Signal Delay: 118.1		Intersection LOS: F	
Intersection Capacity Utilization 106.4%		ICU Level of Service G	
Analysis Period (min) 15			

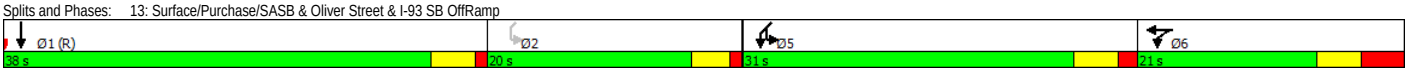
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	145	168	0	0	0	0	0	1504	77	
Future Volume (vph)	0	0	0	145	168	0	0	0	0	0	1504	77	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.993		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3110	0	0	0	0	0	4537	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3110	0	0	0	0	0	4537	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											12		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												37	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	2%	3%	
Adj. Flow (vph)	0	0	0	167	193	0	0	0	0	0	1635	84	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	167	193	0	0	0	0	0	1719	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				18.0	18.0						66.0		18.0
Total Split (s)				26.0	26.0						66.0		18.0
Total Split (%)				23.6%	23.6%						60.0%		16%
Maximum Green (s)				21.0	21.0						62.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				6.0	6.0						55.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				17.5	17.5						67.5		
Actuated g/C Ratio				0.16	0.16						0.61		
v/c Ratio				0.68	0.39						0.62		
Control Delay				67.1	53.0						5.6		
Queue Delay				2.7	0.0						1.2		
Total Delay				69.9	53.0						6.8		
LOS				E	D						A		
Approach Delay					60.8						6.8		
Approach LOS					E						A		
Queue Length 50th (ft)				126	75						110		
Queue Length 95th (ft)				190	111						m173		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				308	622						2787		
Starvation Cap Reductn				66	0						768		
Spillback Cap Reductn				0	0						378		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.69	0.31						0.85		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	313	1267	0	0	
Future Volume (vph)	0	0	313	1267	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.990			
Satd. Flow (prot)	0	0	0	4531	0	0	
Flt Permitted				0.990			
Satd. Flow (perm)	0	0	0	4531	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	0	0	323	1306	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1629	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.45			
Control Delay				0.4			
Queue Delay				0.3			
Total Delay				0.7			
LOS				A			
Approach Delay				0.7			
Approach LOS				A			
Queue Length 50th (ft)				0			
Queue Length 95th (ft)				m0			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3583			
Starvation Cap Reductn				1160			
Spillback Cap Reductn				130			
Storage Cap Reductn				0			
Reduced v/c Ratio				0.67			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 11 (10%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 0.7 Intersection LOS: A
Intersection Capacity Utilization 76.0% ICU Level of Service D
Analysis Period (min) 15

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

Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	602	352	307	366	662	621	
Future Volume (vph)	602	352	307	366	662	621	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3110	1439	1405	1699	1593	1637	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3110	1439	1405	1699	1593	1637	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Confl. Bikes (#/hr)		19	19				
Peak Hour Factor	0.96	0.96	0.96	0.91	0.91	0.91	
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	627	367	320	402	727	682	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	627	367	320	402	727	682	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (%)	43.6%	43.6%	43.6%	38.2%	38.2%	38.2%	18%
Maximum Green (s)	43.0	43.0	43.0	37.0	37.0	37.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0	36.0	30.0	30.0	30.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	45.0	43.0	45.0	39.0	39.0	39.0	
Actuated g/C Ratio	0.41	0.39	0.41	0.35	0.35	0.35	
v/c Ratio	0.49	0.65	0.56	0.67	1.29	1.18	
Control Delay	25.7	34.1	29.5	20.6	164.5	117.3	
Queue Delay	0.8	0.0	0.0	8.9	0.0	0.0	
Total Delay	26.5	34.1	29.5	29.5	164.5	117.3	
LOS	C	C	C	C	F	F	
Approach Delay	29.4					116.8	
Approach LOS	C					F	
Queue Length 50th (ft)	169	209	170	256	~680	~598	
Queue Length 95th (ft)	223	317	262	360	#916	#832	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1272	562	574	602	564	580	
Starvation Cap Reductn	0	0	0	164	0	1	
Spillback Cap Reductn	349	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.68	0.65	0.56	0.92	1.29	1.18	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 82 (75%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 80.0		Intersection LOS: F	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
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.

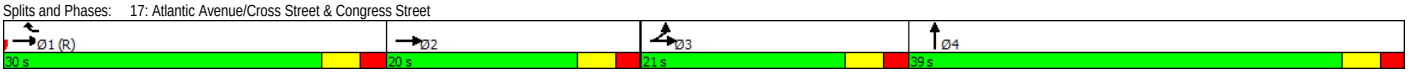
Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	454	515	0	0	0	371	0	754	73	0	0	0	
Future Volume (vph)	454	515	0	0	0	371	0	754	73	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.53							0.96					
Frt						0.850		0.987					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	4283	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1582	3079	0	0	0	2448	0	4283	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	593					593			1007				
Confl. Bikes (#/hr)						12			76				
Peak Hour Factor	0.99	0.99	0.99	0.98	0.98	0.98	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	3%	6%	0%	0%	0%	
Adj. Flow (vph)	459	520	0	0	0	379	0	794	77	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	459	520	0	0	0	379	0	871	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					30.0		39.0					20.0
Total Split (s)	21.0					30.0		39.0					20.0
Total Split (%)	19.1%					27.3%		35.5%					18%
Maximum Green (s)	16.0					25.0		34.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						18.0		27.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	17.0	67.0				26.0		36.0					
Actuated g/C Ratio	0.15	0.61				0.24		0.33					
v/c Ratio	1.00	0.28				0.66		0.62					
Control Delay	76.4	4.0				44.2		28.2					
Queue Delay	25.8	0.4				0.0		0.0					
Total Delay	102.2	4.4				44.2		28.2					
LOS	F	A				D		C					
Approach Delay		50.3			44.2			28.2					
Approach LOS		D			D			C					
Queue Length 50th (ft)	174	51				138		211					
Queue Length 95th (ft)	#281	48				196		258					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	461	1875				578		1401					
Starvation Cap Reductn	35	828				0		0					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.08	0.50				0.66		0.62					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 63 (57%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.6		Intersection LOS: D	
Intersection Capacity Utilization 77.6%		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.			

Splits and Phases: 17: Atlantic Avenue/Cross Street & Congress Street

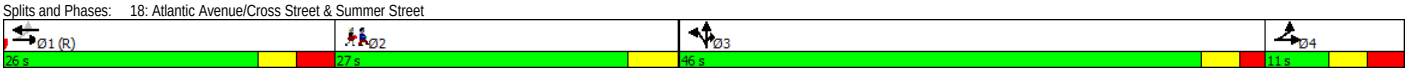


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	35	301	0	0	294	276	94	516	259	0	0	0	
Future Volume (vph)	35	301	0	0	294	276	94	516	259	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.927				0.850				
Flt Protected		0.995					0.950	0.999					
Satd. Flow (prot)	0	3194	0	0	3931	0	1464	2864	1454	0	0	0	
Flt Permitted		0.817					0.950	0.999					
Satd. Flow (perm)	0	2623	0	0	3931	0	1464	2864	1454	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						30			78				
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	1%	0%	0%	0%	1%	1%	5%	0%	0%	0%	0%	
Adj. Flow (vph)	36	314	0	0	297	279	98	538	270	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	350	0	0	576	0	88	548	270	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				26.0		46.0	46.0	46.0				27.0
Total Split (s)	11.0				26.0		46.0	46.0	46.0				27.0
Total Split (%)	10.0%				23.6%		41.8%	41.8%	41.8%				25%
Maximum Green (s)	5.0				20.0		41.0	41.0	41.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				13.0		34.0	34.0	34.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		29.0			22.0		42.0	42.0	42.0				
Actuated g/C Ratio		0.26			0.20		0.38	0.38	0.38				
v/c Ratio		0.48			1.04dr		0.16	0.50	0.49				
Control Delay		34.0			47.6		23.4	28.0	29.5				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		34.0			47.6		23.4	28.0	29.5				
LOS		C			D		C	C	C				
Approach Delay		34.0			47.6			28.0					
Approach LOS		C			D			C					
Queue Length 50th (ft)		102			141		43	160	143				
Queue Length 95th (ft)		144			184		83	215	224				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		727			786		558	1093	555				
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		0.48			0.73		0.16	0.50	0.49				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 59 (54%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 35.3 Intersection LOS: D
Intersection Capacity Utilization 49.4% ICU Level of Service A
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	1303	0	
Future Volume (vph)	0	0	0	0	1303	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5136	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5136	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	0	1343	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	1343	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					71.0		39.0
Total Split (s)					71.0		39.0
Total Split (%)					64.5%		35%
Maximum Green (s)					66.0		33.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					59.0		26.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					67.0		
Actuated g/C Ratio					0.61		
v/c Ratio					0.43		
Control Delay					6.4		
Queue Delay					0.2		
Total Delay					6.6		
LOS					A		
Approach Delay					6.6		
Approach LOS					A		
Queue Length 50th (ft)					73		
Queue Length 95th (ft)					83		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3128		
Starvation Cap Reductn					852		
Spillback Cap Reductn					0		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.59		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 28.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations			↑↑				
Traffic Volume (vph)	0	0	1150	0	0	0	
Future Volume (vph)	0	0	1150	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3574	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3574	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	
Adj. Flow (vph)	0	0	1186	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	1186	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			75.0				35.0
Total Split (s)			75.0				35.0
Total Split (%)			68.2%				32%
Maximum Green (s)			70.0				30.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			63.0				23.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			71.0				
Actuated g/C Ratio			0.65				
v/c Ratio			0.51				
Control Delay			2.9				
Queue Delay			0.3				
Total Delay			3.1				
LOS			A				
Approach Delay			3.1				
Approach LOS			A				
Queue Length 50th (ft)			37				
Queue Length 95th (ft)			43				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2306				
Starvation Cap Reductn			441				
Spillback Cap Reductn			172				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.64				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 3.1		Intersection LOS: A	
Intersection Capacity Utilization 35.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

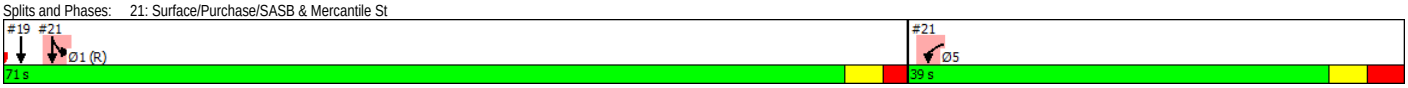
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	249	0	0	0	228	1054
Future Volume (vph)	249	0	0	0	228	1054
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.98					0.99
Frt						
Flt Protected	0.950					0.991
Satd. Flow (prot)	2958	0	0	0	0	4572
Flt Permitted	0.950					0.991
Satd. Flow (perm)	2899	0	0	0	0	4537
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	20				88	
Peak Hour Factor	0.95	0.95	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	0%	2%	1%
Adj. Flow (vph)	262	0	0	0	233	1076
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	0	0	0	0	1309
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	39.0				71.0	71.0
Total Split (s)	39.0				71.0	71.0
Total Split (%)	35.5%				64.5%	64.5%
Maximum Green (s)	33.0				66.0	66.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	26.0				59.0	59.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	34.0					67.0
Actuated g/C Ratio	0.31					0.61
v/c Ratio	0.29					0.47
Control Delay	8.9					12.6
Queue Delay	8.8					0.7
Total Delay	17.7					13.2
LOS	B					B
Approach Delay	17.7					13.2
Approach LOS	B					B
Queue Length 50th (ft)	54					150
Queue Length 95th (ft)	m59					169
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	914					2784
Starvation Cap Reductn	607					998
Spillback Cap Reductn	0					382
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.85					0.73

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 43.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	33	234	0	0	228	48	21	670	456	0	0	0	
Future Volume (vph)	33	234	0	0	228	48	21	670	456	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00								
Frt					0.976				0.850				
Flt Protected		0.994						0.998					
Satd. Flow (prot)	0	3095	0	0	1592	0	0	3181	1454	0	0	0	
Flt Permitted		0.741						0.998					
Satd. Flow (perm)	0	2307	0	0	1592	0	0	3181	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					9								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Bikes (#/hr)						16			77				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	35	249	0	0	245	52	22	691	470	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	284	0	0	297	0	0	713	470	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA	Prot				
Protected Phases		5			5			1	1				2
Permitted Phases	5						1						
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (%)	25.5%	25.5%			25.5%		54.5%	54.5%	54.5%				20%
Maximum Green (s)	23.0	23.0			23.0		55.0	55.0	55.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	16.0	16.0			16.0		48.0	48.0	48.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		24.0			24.0			56.0	56.0				
Actuated g/C Ratio		0.22			0.22			0.51	0.51				
v/c Ratio		0.56			0.84			0.44	0.64				
Control Delay		43.5			61.5			11.2	18.9				
Queue Delay		12.2			3.7			1.1	3.3				
Total Delay		55.7			65.2			12.3	22.2				
LOS		E			E			B	C				
Approach Delay		55.7			65.2			16.2					
Approach LOS		E			E			B					
Queue Length 50th (ft)		111			196			170	312				
Queue Length 95th (ft)		157			#344			208	448				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		503			354			1619	740				
Starvation Cap Reductn		192			0			620	176				
Spillback Cap Reductn		0			21			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.91			0.89			0.71	0.83				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 79 (72%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 30.8		Intersection LOS: C	
Intersection Capacity Utilization 56.1%		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: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	515	137	0	0	0	0	0	795	96	
Future Volume (vph)	0	0	0	515	137	0	0	0	0	0	795	96	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.984		
Flt Protected				0.950	0.974								
Satd. Flow (prot)	0	0	0	1630	1759	0	0	0	0	0	4506	0	
Flt Permitted				0.950	0.974								
Satd. Flow (perm)	0	0	0	1630	1759	0	0	0	0	0	4506	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											21		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												56	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.99	0.99	0.99	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	2%	
Adj. Flow (vph)	0	0	0	542	144	0	0	0	0	0	803	97	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	379	307	0	0	0	0	0	900	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				42.0	42.0						44.0		24.0
Total Split (s)				42.0	42.0						44.0		24.0
Total Split (%)				38.2%	38.2%						40.0%		22%
Maximum Green (s)				37.0	37.0						38.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				30.0	30.0						31.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				39.0	39.0						40.0		
Actuated g/C Ratio				0.35	0.35						0.36		
v/c Ratio				0.66	0.49						0.55		
Control Delay				36.4	31.1						27.7		
Queue Delay				59.2	37.9						0.0		
Total Delay				95.6	69.0						27.7		
LOS				F	E						C		
Approach Delay					83.7						27.7		
Approach LOS					F						C		
Queue Length 50th (ft)				234	176						171		
Queue Length 95th (ft)				348	266						209		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				577	623						1651		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				303	327						20		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				1.38	1.04						0.55		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 1 (1%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 51.9		Intersection LOS: D	
Intersection Capacity Utilization 46.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	23	754	0	0	0
Future Volume (vph)	0	23	754	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3185	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3185	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		263				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	25	794	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	794	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		25.0	85.0			
Total Split (s)		25.0	85.0			
Total Split (%)		22.7%	77.3%			
Maximum Green (s)		21.0	80.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		14.0	73.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		21.0	80.0			
Actuated g/C Ratio		0.19	0.73			
v/c Ratio		0.05	0.34			
Control Delay		0.2	0.6			
Queue Delay		0.0	0.2			
Total Delay		0.2	0.8			
LOS		A	A			
Approach Delay	0.2		0.8			
Approach LOS	A		A			
Queue Length 50th (ft)		0	1			
Queue Length 95th (ft)		0	m2			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		500	2316			
Starvation Cap Reductn		0	620			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.05	0.47			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 62 (56%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 0.7		Intersection LOS: A	
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

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

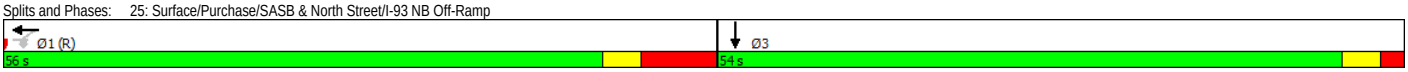
Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	142	184	151	0	0	0	0	0	559	88
Future Volume (vph)	0	0	142	184	151	0	0	0	0	0	559	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.97	
Frt			0.865								0.980	
Flt Protected					0.973							
Satd. Flow (prot)	0	0	1465	0	3116	0	0	0	0	0	3042	0
Flt Permitted					0.973							
Satd. Flow (perm)	0	0	1465	0	3116	0	0	0	0	0	3042	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											21	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												251
Confl. Bikes (#/hr)												53
Peak Hour Factor	0.94	0.94	0.94	0.99	0.99	0.99	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	1%	2%	0%	0%	0%	0%	0%	2%	1%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	151	186	153	0	0	0	0	0	588	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	151	0	339	0	0	0	0	0	681	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			56.0	56.0	56.0						54.0	
Total Split (s)			56.0	56.0	56.0						54.0	
Total Split (%)			50.9%	50.9%	50.9%						49.1%	
Maximum Green (s)			47.0	47.0	47.0						49.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			40.0	40.0	40.0						42.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			52.0		52.0						50.0	
Actuated g/C Ratio			0.47		0.47						0.45	
v/c Ratio			0.22		0.23						0.49	
Control Delay			18.1		17.7						21.8	
Queue Delay			0.0		0.0						0.0	
Total Delay			18.1		17.7						21.8	
LOS			B		B						C	
Approach Delay		18.1			17.7						21.8	
Approach LOS		B			B						C	
Queue Length 50th (ft)			61		72						167	
Queue Length 95th (ft)			104		102						220	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			692		1473						1394	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.22		0.23						0.49	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	252	44	0	0	0	0	0	762	16	0	0	0	
Future Volume (vph)	252	44	0	0	0	0	0	762	16	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt								0.997					
Flt Protected	0.950	0.966											
Satd. Flow (prot)	1484	1526	0	0	0	0	0	3171	0	0	0	0	
Flt Permitted	0.950	0.966											
Satd. Flow (perm)	1484	1526	0	0	0	0	0	3171	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								2					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									82				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	260	45	0	0	0	0	0	778	16	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	151	154	0	0	0	0	0	794	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	43.0	43.0						49.0					18.0
Total Split (%)	39.1%	39.1%						44.5%					16%
Maximum Green (s)	38.0	38.0						44.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	39.0	39.0						45.0					
Actuated g/C Ratio	0.35	0.35						0.41					
v/c Ratio	0.29	0.28						0.61					
Control Delay	27.4	27.3						8.5					
Queue Delay	0.0	0.0						0.2					
Total Delay	27.4	27.3						8.7					
LOS	C	C						A					
Approach Delay		27.3						8.7					
Approach LOS		C						A					
Queue Length 50th (ft)	80	81						60					
Queue Length 95th (ft)	135	137						68					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	526	541						1298					
Starvation Cap Reductn	0	0						81					
Spillback Cap Reductn	0	0						5					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.29	0.28						0.65					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 25 (23%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	87	0	0	153	69	107	885	21	0	0	0
Future Volume (vph)	32	87	0	0	153	69	107	885	21	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.75				0.87			0.98				
Frt					0.958			0.997				
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1624	1693	0	0	1409	0	0	3123	0	0	0	0
Flt Permitted	0.447							0.995				
Satd. Flow (perm)	570	1693	0	0	1409	0	0	3069	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			4				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	748					748	212		289			
Confl. Bikes (#/hr)						6			80			
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	3%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	33	90	0	0	163	73	109	903	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	90	0	0	236	0	0	1033	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (%)	30.9%	30.9%			30.9%		69.1%	69.1%				
Maximum Green (s)	29.0	29.0			29.0		71.0	71.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	22.0	22.0			22.0		64.0	64.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	30.0	30.0			30.0			72.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.65				
v/c Ratio	0.21	0.20			0.59			0.51				
Control Delay	35.3	32.1			38.8			2.3				
Queue Delay	0.0	0.0			0.0			0.5				
Total Delay	35.3	32.1			38.8			2.7				
LOS	D	C			D			A				
Approach Delay		33.0			38.8			2.7				
Approach LOS		C			D			A				
Queue Length 50th (ft)	18	49			132			8				
Queue Length 95th (ft)	46	92			218			10				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	155	461			398			2045				
Starvation Cap Reductn	0	0			0			521				
Spillback Cap Reductn	0	0			0			204				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.21	0.20			0.59			0.68				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

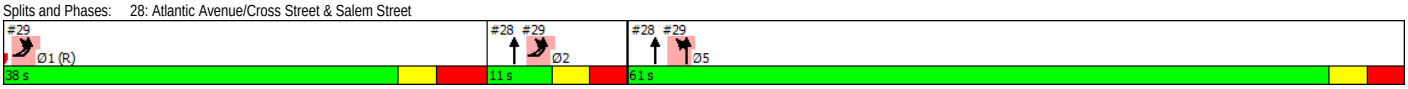
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	947	40	0	0			
Future Volume (vph)	0	0	947	40	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.994						
Flt Protected									
Satd. Flow (prot)	0	0	3452	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3452	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			7						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				239					
Confl. Bikes (#/hr)				81					
Peak Hour Factor	0.92	0.92	0.99	0.99	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	957	40	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	997	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							38.0	11.0	61.0
Total Split (s)							38.0	11.0	61.0
Total Split (%)							35%	10%	55%
Maximum Green (s)							31.0	5.0	55.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							24.0		48.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			66.0						
Actuated g/C Ratio			0.60						
v/c Ratio			0.48						
Control Delay			9.7						
Queue Delay			0.3						
Total Delay			10.0						
LOS			B						
Approach Delay			10.0						
Approach LOS			B						
Queue Length 50th (ft)			275						
Queue Length 95th (ft)			0						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			2074						
Starvation Cap Reductn			467						
Spillback Cap Reductn			189						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.62						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

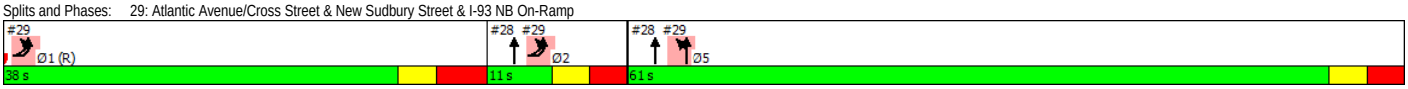


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	443	254	0	391	556	0	0	0	0		
Future Volume (vph)	443	254	0	391	556	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00									
Frt											
Flt Protected		0.950			0.980						
Satd. Flow (prot)	0	3583	0	0	3307	0	0	0	0		
Flt Permitted		0.950			0.980						
Satd. Flow (perm)	0	3570	0	0	3307	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Confl. Peds. (#/hr)		2									
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	1%	1%	0%	4%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	452	259	0	399	567	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	711	0	0	966	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				61.0	61.0					38.0	11.0
Total Split (s)				61.0	61.0					38.0	11.0
Total Split (%)				55.5%	55.5%					35%	10%
Maximum Green (s)				55.0	55.0					31.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				48.0	48.0					24.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		43.0			56.0						
Actuated g/C Ratio		0.39			0.51						
v/c Ratio		0.51			0.57						
Control Delay		27.0			6.2						
Queue Delay		0.0			0.0						
Total Delay		27.0			6.3						
LOS		C			A						
Approach Delay		27.0			6.3						
Approach LOS		C			A						
Queue Length 50th (ft)		193			286						
Queue Length 95th (ft)		249			35						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1400			1683						
Starvation Cap Reductn		0			47						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.51			0.59						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			

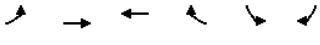
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	80	45	0	4	110	88
Future Volume (Veh/h)	80	45	0	4	110	88
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.50	0.50	0.95	0.95
Hourly flow rate (vph)	82	46	0	8	116	93
Pedestrians	149			95	457	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	12			8	38	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	205					
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			585		719	657
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			560		698	634
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		46	65
cM capacity (veh/h)			615		216	268

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	128	8	209
Volume Left	0	0	116
Volume Right	46	0	93
cSH	1700	615	237
Volume to Capacity	0.08	0.00	0.88
Queue Length 95th (ft)	0	0	182
Control Delay (s)	0.0	0.0	76.1
Lane LOS			F
Approach Delay (s)	0.0	0.0	76.1
Approach LOS			F

Intersection Summary				
Average Delay			46.1	
Intersection Capacity Utilization			34.1%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	23	27	2	0	18
Future Volume (Veh/h)	12	23	27	2	0	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.63	0.63	0.70	0.70
Hourly flow rate (vph)	14	27	43	3	0	26
Pedestrians		29	17		204	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		2	1		17	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	250				320	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	250				320	278
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	96
cM capacity (veh/h)	1102				547	621

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	41	46	26
Volume Left	14	0	0
Volume Right	0	3	26
cSH	1102	1700	621
Volume to Capacity	0.01	0.03	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	2.9	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	2.9	0.0	11.1
Approach LOS			B

Intersection Summary					
Average Delay			3.6		
Intersection Capacity Utilization			29.7%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	73	1192	0	0	0
Future Volume (Veh/h)	0	73	1192	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.83	0.83	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	88	1242	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1242	621			1242	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	704	0			704	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			100	
cM capacity (veh/h)	288	835			691	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	44	44	621	621
Volume Left	0	0	0	0
Volume Right	44	44	0	0
cSH	835	835	1700	1700
Volume to Capacity	0.05	0.05	0.37	0.37
Queue Length 95th (ft)	4	4	0	0
Control Delay (s)	9.5	9.5	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.5		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.6	
Intersection Capacity Utilization			43.0%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	69	103	4	4
Future Volume (Veh/h)	0	0	69	103	4	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	0	0	73	108	5	5
Pedestrians	128					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	390	136	138			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	390	136	138			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	95			
cM capacity (veh/h)	587	919	1446			

Direction, Lane #	NB 1	SB 1
Volume Total	181	10
Volume Left	73	0
Volume Right	0	5
cSH	1446	1700
Volume to Capacity	0.05	0.01
Queue Length 95th (ft)	4	0
Control Delay (s)	3.3	0.0
Lane LOS	A	
Approach Delay (s)	3.3	0.0
Approach LOS		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	19.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	6	2	133	56	47
Future Volume (Veh/h)	30	6	2	133	56	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.87	0.87	0.83	0.83
Hourly flow rate (vph)	34	7	2	153	67	57
Pedestrians	140			275	347	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	12			23	29	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			388		682	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			388		682	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		74	78
cM capacity (veh/h)			840		259	256

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	41	155	124
Volume Left	0	2	67
Volume Right	7	0	57
cSH	1700	840	258
Volume to Capacity	0.02	0.00	0.48
Queue Length 95th (ft)	0	0	61
Control Delay (s)	0.0	0.1	31.3
Lane LOS		A	D
Approach Delay (s)	0.0	0.1	31.3
Approach LOS			D

Intersection Summary					
Average Delay			12.2		
Intersection Capacity Utilization			33.3%	ICU Level of Service	A
Analysis Period (min)			15		

- Build (2026) Condition

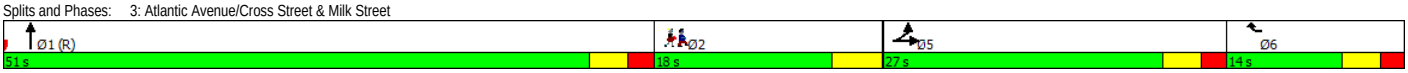
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	110	26	0	0	0	2	0	797	39	0	0	0	
Future Volume (vph)	110	26	0	0	0	2	0	797	39	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt						0.865		0.993					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3081	0	0	0	1676	0	2996	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3081	0	0	0	1676	0	2996	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						375		6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			309			136			151		
Travel Time (s)		4.4			8.4			3.7			4.1		
Confl. Bikes (#/hr)									64				
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	118	28	0	0	0	3	0	822	40	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	118	28	0	0	0	3	0	862	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				4.0		8.0					8.0
Minimum Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (s)	27.0	27.0				14.0		51.0					18.0
Total Split (%)	24.5%	24.5%				12.7%		46.4%					16%
Maximum Green (s)	22.0	22.0				9.0		46.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					0.2
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	15.0	15.0				2.0		39.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	23.0	23.0				10.0		47.0					
Actuated g/C Ratio	0.21	0.21				0.09		0.43					
v/c Ratio	0.39	0.04				0.01		0.67					
Control Delay	60.7	54.6				0.0		12.2					
Queue Delay	77.3	0.0				0.0		1.9					
Total Delay	138.0	54.6				0.0		14.1					
LOS	F	D				A		B					
Approach Delay		122.0						14.1					
Approach LOS		F						B					
Queue Length 50th (ft)	94	10				0		96					
Queue Length 95th (ft)	163	26				m0		117					
Internal Link Dist (ft)		81			229			56			71		
Turn Bay Length (ft)													
Base Capacity (vph)	306	644				493		1283					
Starvation Cap Reductn	204	0				0		262					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.16	0.04				0.01		0.84					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 89 (81%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	58	69	145	1059	35	0	0	0
Future Volume (vph)	0	0	0	0	58	69	145	1059	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.93			0.98				
Frt					0.927			0.996				
Flt Protected								0.994				
Satd. Flow (prot)	0	0	0	0	1372	0	0	3150	0	0	0	0
Flt Permitted								0.994				
Satd. Flow (perm)	0	0	0	0	1372	0	0	3144	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					11			7				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			158	
Travel Time (s)		4.7			4.9			15.5			4.3	
Confl. Peds. (#/hr)						71	42		703			
Confl. Bikes (#/hr)						1			65			
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	72	85	149	1092	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	157	0	0	1277	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					24.0		86.0	86.0				
Total Split (s)					24.0		86.0	86.0				
Total Split (%)					21.8%		78.2%	78.2%				
Maximum Green (s)					19.0		81.0	81.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					12.0		74.0	74.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					20.0			82.0				
Actuated g/C Ratio					0.18			0.75				
v/c Ratio					0.61			0.54				
Control Delay					49.5			12.1				
Queue Delay					0.9			0.6				
Total Delay					50.4			12.8				
LOS					D			B				
Approach Delay					50.4			12.8				
Approach LOS					D			B				
Queue Length 50th (ft)					96			311				
Queue Length 95th (ft)					147			100				
Internal Link Dist (ft)		91			99			490			78	
Turn Bay Length (ft)												
Base Capacity (vph)					258			2349				
Starvation Cap Reductn					0			634				
Spillback Cap Reductn					17			2				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.65			0.74				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 86 (78%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 100.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	111	92	0	0	0	0	0	602	62	
Future Volume (vph)	0	0	0	111	92	0	0	0	0	0	602	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.986		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3120	1637	0	0	0	0	0	4346	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3120	1637	0	0	0	0	0	4346	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											24		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												38	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	6%	0%	
Adj. Flow (vph)	0	0	0	119	99	0	0	0	0	0	627	65	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	119	99	0	0	0	0	0	692	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				27.0	27.0						62.0		21.0
Total Split (s)				27.0	27.0						62.0		21.0
Total Split (%)				24.5%	24.5%						56.4%		19%
Maximum Green (s)				22.0	22.0						56.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				15.0	15.0						49.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				24.0	24.0						58.0		
Actuated g/C Ratio				0.22	0.22						0.53		
v/c Ratio				0.17	0.28						0.30		
Control Delay				30.5	32.8						2.0		
Queue Delay				2.3	11.8						0.2		
Total Delay				32.8	44.6						2.2		
LOS				C	D						A		
Approach Delay					38.1						2.2		
Approach LOS					D						A		
Queue Length 50th (ft)				32	54						6		
Queue Length 95th (ft)				m58	m100						8		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				680	357						2302		
Starvation Cap Reductn				450	228						720		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.52	0.77						0.44		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 107.8%		ICU Level of Service G	
Analysis Period (min) 15			

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

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	84	32	0	0	0	0	0	0	51	633	0	
Future Volume (vph)	0	84	32	0	0	0	0	0	0	51	633	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		0.99											
Frt		0.958											
Flt Protected											0.996		
Satd. Flow (prot)	0	3279	0	0	0	0	0	0	0	0	4402	0	
Flt Permitted											0.996		
Satd. Flow (perm)	0	3279	0	0	0	0	0	0	0	0	4402	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		34											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			7										
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	6%	0%	
Adj. Flow (vph)	0	88	34	0	0	0	0	0	0	53	653	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	122	0	0	0	0	0	0	0	0	706	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		29.0								63.0	63.0		18.0
Total Split (s)		29.0								63.0	63.0		18.0
Total Split (%)		26.4%								57.3%	57.3%		16%
Maximum Green (s)		25.0								58.0	58.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								51.0	51.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									59.0		
Actuated g/C Ratio		0.24									0.54		
v/c Ratio		0.15									0.30		
Control Delay		24.4									6.7		
Queue Delay		0.0									0.2		
Total Delay		24.4									6.9		
LOS		C									A		
Approach Delay		24.4									6.9		
Approach LOS		C									A		
Queue Length 50th (ft)		25									28		
Queue Length 95th (ft)		51									50		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		801									2361		
Starvation Cap Reductn		0									762		
Spillback Cap Reductn		0									59		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.15									0.44		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 9.5		Intersection LOS: A	
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	56	218	0	0	0	0	0	627	671
Future Volume (vph)	0	0	0	56	218	0	0	0	0	0	627	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.68							0.95	
Frt											0.922	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1449	3051	0	0	0	0	0	3984	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	992	3051	0	0	0	0	0	3984	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											376	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				332								158
Confl. Bikes (#/hr)												38
Peak Hour Factor	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	4%	1%
Adj. Flow (vph)	0	0	0	58	225	0	0	0	0	0	640	685
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	58	225	0	0	0	0	0	1325	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				38.0	38.0						72.0	
Total Split (s)				38.0	38.0						72.0	
Total Split (%)				34.5%	34.5%						65.5%	
Maximum Green (s)				29.0	29.0						67.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				22.0	22.0						60.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				30.0	30.0						68.0	
Actuated g/C Ratio				0.27	0.27						0.62	
v/c Ratio				0.15	0.27						0.51	
Control Delay				34.4	35.4						3.4	
Queue Delay				3.5	6.4						0.1	
Total Delay				37.9	41.8						3.5	
LOS				D	D						A	
Approach Delay					41.0						3.5	
Approach LOS					D						A	
Queue Length 50th (ft)				35	69						0	
Queue Length 95th (ft)				m71	101						0	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				395	832						2606	
Starvation Cap Reductn				271	547						206	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.47	0.79						0.55	

Intersection Summary

Area Type:	CBD
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 90 (82%), Referenced to phase 1:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 140.8%	ICU Level of Service H
Analysis Period (min) 15	

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

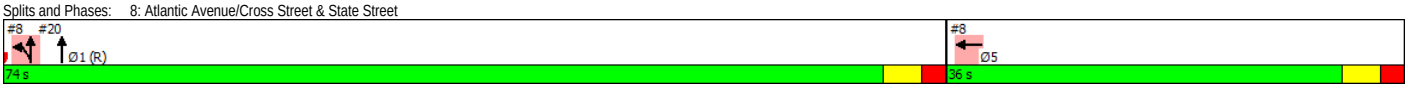
Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	82	41	199	689	52	0	0	0
Future Volume (vph)	0	0	0	0	82	41	199	689	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.91			0.97				
Frt					0.955			0.992				
Flt Protected								0.990				
Satd. Flow (prot)	0	0	0	0	1679	0	0	3019	0	0	0	0
Flt Permitted								0.990				
Satd. Flow (perm)	0	0	0	0	1679	0	0	3003	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					11			11				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						160	51		695			
Confl. Bikes (#/hr)									62			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	3%	2%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	89	45	205	710	54	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	134	0	0	969	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					26.0		74.0	74.0				
Total Split (s)					36.0		74.0	74.0				
Total Split (%)					32.7%		67.3%	67.3%				
Maximum Green (s)					31.0		69.0	69.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					14.0		62.0	62.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					32.0			70.0				
Actuated g/C Ratio					0.29			0.64				
v/c Ratio					0.27			0.50				
Control Delay					29.3			3.5				
Queue Delay					0.0			0.2				
Total Delay					29.3			3.7				
LOS					C			A				
Approach Delay					29.3			3.7				
Approach LOS					C			A				
Queue Length 50th (ft)					66			54				
Queue Length 95th (ft)					119			54				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					496			1925				
Starvation Cap Reductn					0			265				
Spillback Cap Reductn					0			151				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.27			0.58				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	94	0	0	736	22	
Future Volume (vph)	0	94	0	0	736	22	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor					1.00		
Frt		0.865			0.996		
Flt Protected							
Satd. Flow (prot)	0	1484	0	0	4428	0	
Flt Permitted							
Satd. Flow (perm)	0	1484	0	0	4428	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		391			6		
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						40	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96	
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	
Adj. Flow (vph)	0	102	0	0	767	23	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	102	0	0	790	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		23.0			65.0		22.0
Total Split (s)		23.0			65.0		22.0
Total Split (%)		20.9%			59.1%		20%
Maximum Green (s)		19.0			59.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		12.0			52.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		19.0			61.0		
Actuated g/C Ratio		0.17			0.55		
v/c Ratio		0.18			0.32		
Control Delay		0.7			4.2		
Queue Delay		0.0			0.2		
Total Delay		0.7			4.4		
LOS		A			A		
Approach Delay	0.7				4.4		
Approach LOS	A				A		
Queue Length 50th (ft)		0			38		
Queue Length 95th (ft)		0			46		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		579			2458		
Starvation Cap Reductn		0			717		
Spillback Cap Reductn		9			114		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.18			0.45		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 7 (6%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 3.9		Intersection LOS: A	
Intersection Capacity Utilization 29.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	99	149	0	0	0	0	0	0	299	531	0	
Future Volume (vph)	0	99	149	0	0	0	0	0	0	299	531	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		0.99											
Frt		0.910											
Flt Protected											0.982		
Satd. Flow (prot)	0	3310	0	0	0	0	0	0	0	0	4427	0	
Flt Permitted											0.982		
Satd. Flow (perm)	0	3310	0	0	0	0	0	0	0	0	4427	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		154											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			2										
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 (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	5%	0%	
Adj. Flow (vph)	0	102	154	0	0	0	0	0	0	311	553	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	256	0	0	0	0	0	0	0	0	864	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		30.0								61.0	61.0		19.0
Total Split (s)		30.0								61.0	61.0		19.0
Total Split (%)		27.3%								55.5%	55.5%		17%
Maximum Green (s)		25.0								56.0	56.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		18.0								49.0	49.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		26.0									57.0		
Actuated g/C Ratio		0.24									0.52		
v/c Ratio		0.28									0.38		
Control Delay		14.6									4.6		
Queue Delay		0.0									0.2		
Total Delay		14.7									4.8		
LOS		B									A		
Approach Delay		14.7									4.8		
Approach LOS		B									A		
Queue Length 50th (ft)		30									15		
Queue Length 95th (ft)		64									18		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		899									2293		
Starvation Cap Reductn		0									636		
Spillback Cap Reductn		22									210		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.29									0.52		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	398	0	0	840	0	0	
Future Volume (vph)	398	0	0	840	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3120	0	0	3127	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3120	0	0	3127	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.94	0.94	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	423	0	0	866	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	423	0	0	866	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.75			0.48			
Control Delay	38.1			9.1			
Queue Delay	51.7			0.0			
Total Delay	89.8			9.1			
LOS	F			A			
Approach Delay	89.8			9.1			
Approach LOS	F			A			
Queue Length 50th (ft)	152			107			
Queue Length 95th (ft)	208			m107			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	567			1819			
Starvation Cap Reductn	180			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	1.09			0.48			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	23	915	421	207	239	95	284	578	470		
Future Volume (vph)	6	23	915	421	207	239	95	284	578	470		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.97			
Frt					0.850	0.850			0.935			
Flt Protected			0.998					0.950	0.999			
Satd. Flow (prot)	0	0	3318	1489	1323	1427	0	1433	2803	0		
Flt Permitted			0.933					0.950	0.999			
Satd. Flow (perm)	0	0	3102	1489	1323	1427	0	1433	2803	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					14	14				64		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.99	0.99	0.99	0.99		
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	4%	4%	5%		
Adj. Flow (vph)	6	23	934	434	213	246	96	287	584	475		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	963	434	213	246	0	354	1088	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Perm	Split	NA			
Protected Phases			5	5	5	5		1	1		2	6
Permitted Phases	2 5	2 5	2				1					
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		7.0	4.0
Minimum Split (s)			29.0	29.0	29.0	29.0	39.0	39.0	39.0		26.0	6.0
Total Split (s)			39.0	39.0	39.0	39.0	39.0	39.0	39.0		26.0	6.0
Total Split (%)			35.5%	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%		24%	5%
Maximum Green (s)			32.5	32.5	32.5	32.5	32.5	32.5	32.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			15.5	15.5	15.5	15.5	24.5	24.5	24.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			48.1	33.5	33.5	33.5		38.7	38.7			
Actuated g/C Ratio			0.44	0.30	0.30	0.30		0.35	0.35			
v/c Ratio			0.68	0.96	0.53	0.57		0.70	1.10			
Control Delay			5.8	71.7	37.5	38.2		34.0	88.8			
Queue Delay			44.8	44.7	0.0	0.0		0.0	0.0			
Total Delay			50.6	116.4	37.5	38.2		34.0	88.8			
LOS			D	F	D	D		C	F			
Approach Delay			50.6	76.1					75.4			
Approach LOS			D	E					E			
Queue Length 50th (ft)			24	329	136	153		121	~517			
Queue Length 95th (ft)			m16	#550	221	243		#407	#660			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1420	453	402	434		504	986			
Starvation Cap Reductn			534	0	0	0		0	0			
Spillback Cap Reductn			0	152	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			1.09	1.44	0.53	0.57		0.70	1.10			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 52 (47%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 68.3 Intersection LOS: E
Intersection Capacity Utilization 92.6% 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: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	322	194	573	107	944	466	101	
Future Volume (vph)	322	194	573	107	944	466	101	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			0.99					
Frt			0.976			0.973		
Flt Protected		0.970			0.950	0.961		
Satd. Flow (prot)	0	3005	4368	0	1608	1583	0	
Flt Permitted		0.970			0.950	0.961		
Satd. Flow (perm)	0	3005	4368	0	1608	1583	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			33					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				38				
Peak Hour Factor	0.97	0.97	0.95	0.95	0.99	0.99	0.99	
Heavy Vehicles (%)	1%	2%	4%	1%	1%	1%	1%	
Adj. Flow (vph)	332	200	603	113	954	471	102	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	532	716	0	954	573	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (s)	21.0	21.0	30.0		39.0	39.0		20.0
Total Split (%)	19.1%	19.1%	27.3%		35.5%	35.5%		18%
Maximum Green (s)	14.0	14.0	25.5		34.0	34.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	18.5		27.0	27.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	26.5		55.0	35.0		
Actuated g/C Ratio		0.15	0.24		0.50	0.32		
v/c Ratio		1.47dl	0.66		1.19	1.14		
Control Delay		133.5	27.6		124.0	120.0		
Queue Delay		0.5	0.1		0.2	0.0		
Total Delay		134.0	27.7		124.1	120.0		
LOS		F	C		F	F		
Approach Delay		134.0	27.7			122.6		
Approach LOS		F	C			F		
Queue Length 50th (ft)		~230	168		~813	~473		
Queue Length 95th (ft)		m#266	215		#1059	#687		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		437	1077		804	503		
Starvation Cap Reductn		22	0		0	0		
Spillback Cap Reductn		0	29		21	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.28	0.68		1.22	1.14		

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 47 (43%), Referenced to phase 1:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 100.3 Intersection LOS: F
Intersection Capacity Utilization 103.7% ICU Level of Service G
Analysis Period (min) 15

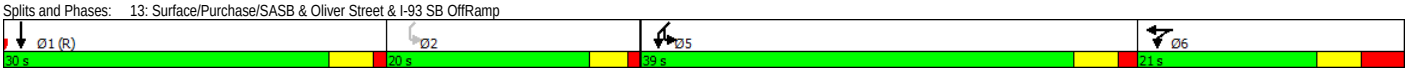
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	96	351	0	0	0	0	0	1261	99	
Future Volume (vph)	0	0	0	96	351	0	0	0	0	0	1261	99	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.989		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3141	0	0	0	0	0	4521	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3141	0	0	0	0	0	4521	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											18		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												36	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	107	390	0	0	0	0	0	1287	101	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	107	390	0	0	0	0	0	1388	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				28.0	28.0						64.0		18.0
Total Split (s)				28.0	28.0						64.0		18.0
Total Split (%)				25.5%	25.5%						58.2%		16%
Maximum Green (s)				23.0	23.0						60.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				16.0	16.0						53.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				24.0	24.0						61.0		
Actuated g/C Ratio				0.22	0.22						0.55		
v/c Ratio				0.32	0.57						0.55		
Control Delay				49.9	53.4						13.3		
Queue Delay				2.3	13.5						0.9		
Total Delay				52.1	66.8						14.3		
LOS				D	E						B		
Approach Delay					63.7						14.3		
Approach LOS					E						B		
Queue Length 50th (ft)				80	153						224		
Queue Length 95th (ft)				138	205						m210		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				336	685						2515		
Starvation Cap Reductn				135	273						775		
Spillback Cap Reductn				0	0						87		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.53	0.95						0.80		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 40 (36%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 27.3		Intersection LOS: C	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	448	1427	0	0	
Future Volume (vph)	0	0	448	1427	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.988			
Satd. Flow (prot)	0	0	0	4476	0	0	
Flt Permitted				0.988			
Satd. Flow (perm)	0	0	0	4476	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	
Adj. Flow (vph)	0	0	467	1486	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1953	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.55			
Control Delay				8.4			
Queue Delay				36.8			
Total Delay				45.3			
LOS				D			
Approach Delay				45.3			
Approach LOS				D			
Queue Length 50th (ft)				267			
Queue Length 95th (ft)				m274			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3540			
Starvation Cap Reductn				1721			
Spillback Cap Reductn				193			
Storage Cap Reductn				0			
Reduced v/c Ratio				1.07			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	581	235	178	497	427	434	
Future Volume (vph)	581	235	178	497	427	434	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3079	1454	1391	1716	1577	1621	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3079	1454	1391	1716	1577	1621	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	
Heavy Vehicles (%)	2%	0%	1%	1%	3%	2%	
Adj. Flow (vph)	593	240	182	512	440	447	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	593	240	182	512	440	447	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	36.0	36.0	36.0	47.0	47.0	47.0	20.0
Total Split (s)	43.0	43.0	43.0	47.0	47.0	47.0	20.0
Total Split (%)	39.1%	39.1%	39.1%	42.7%	42.7%	42.7%	18%
Maximum Green (s)	38.0	38.0	38.0	42.0	42.0	42.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	35.0	35.0	35.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	40.0	38.0	40.0	44.0	44.0	44.0	
Actuated g/C Ratio	0.36	0.35	0.36	0.40	0.40	0.40	
v/c Ratio	0.53	0.48	0.36	0.75	0.70	0.69	
Control Delay	29.7	32.2	28.2	13.7	12.0	11.5	
Queue Delay	1.6	0.0	0.0	0.7	1.0	1.1	
Total Delay	31.3	32.2	28.2	14.4	13.0	12.5	
LOS	C	C	C	B	B	B	
Approach Delay	30.9					13.3	
Approach LOS	C					B	
Queue Length 50th (ft)	171	132	93	135	76	74	
Queue Length 95th (ft)	227	209	154	453	210	184	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1119	502	505	686	630	648	
Starvation Cap Reductn	0	0	0	35	55	62	
Spillback Cap Reductn	336	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.48	0.36	0.79	0.77	0.76	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	501	576	0	0	0	451	0	823	172	0	0	0	
Future Volume (vph)	501	576	0	0	0	451	0	823	172	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.60							0.92					
Frt						0.850		0.974					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	3985	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1783	3079	0	0	0	2448	0	3985	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	568					568			1035				
Confl. Bikes (#/hr)						4			82				
Peak Hour Factor	0.98	0.98	0.98	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	5%	4%	0%	0%	0%	
Adj. Flow (vph)	511	588	0	0	0	475	0	866	181	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	511	588	0	0	0	475	0	1047	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					26.0		37.0					20.0
Total Split (s)	27.0					26.0		37.0					20.0
Total Split (%)	24.5%					23.6%		33.6%					18%
Maximum Green (s)	22.0					21.0		32.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						14.0		25.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	23.0	69.0				22.0		34.0					
Actuated g/C Ratio	0.21	0.63				0.20		0.31					
v/c Ratio	0.82	0.30				0.97		0.85					
Control Delay	45.6	4.5				78.6		23.9					
Queue Delay	45.8	0.5				0.0		48.5					
Total Delay	91.4	5.0				78.6		72.4					
LOS	F	A				E		E					
Approach Delay		45.2			78.6			72.4					
Approach LOS		D			E			E					
Queue Length 50th (ft)	193	69				190		147					
Queue Length 95th (ft)	#265	64				#307		m206					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	624	1931				489		1231					
Starvation Cap Reductn	153	865				0		0					
Spillback Cap Reductn	6	0				0		344					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.08	0.55				0.97		1.18					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 78 (71%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 62.1		Intersection LOS: E	
Intersection Capacity Utilization 80.4%		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.

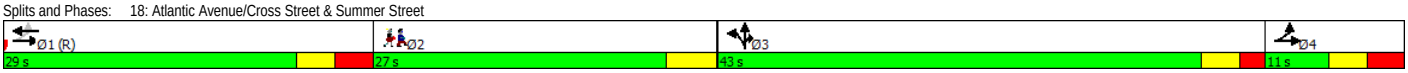
Splits and Phases: 17: Atlantic Avenue/Cross Street & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	48	446	0	0	323	231	185	815	373	0	0	0	
Future Volume (vph)	48	446	0	0	323	231	185	815	373	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.937				0.850				
Flt Protected		0.995					0.950	0.999					
Satd. Flow (prot)	0	3208	0	0	3955	0	1449	2891	1439	0	0	0	
Flt Permitted		0.783					0.950	0.999					
Satd. Flow (perm)	0	2524	0	0	3955	0	1449	2891	1439	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						31			56				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92	
Heavy Vehicles (%)	8%	0%	0%	0%	1%	2%	2%	4%	1%	0%	0%	0%	
Adj. Flow (vph)	51	474	0	0	347	248	203	896	410	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	525	0	0	595	0	183	916	410	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				29.0		43.0	43.0	43.0				27.0
Total Split (s)	11.0				29.0		43.0	43.0	43.0				27.0
Total Split (%)	10.0%				26.4%		39.1%	39.1%	39.1%				25%
Maximum Green (s)	5.0				23.0		38.0	38.0	38.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				16.0		31.0	31.0	31.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		32.0			25.0		39.0	39.0	39.0				
Actuated g/C Ratio		0.29			0.23		0.35	0.35	0.35				
v/c Ratio		0.68			0.66		0.36	0.89	0.80				
Control Delay		37.3			42.8		28.7	46.1	45.8				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		37.3			42.8		28.7	46.1	45.8				
LOS		D			D		C	D	D				
Approach Delay		37.3			42.8			43.9					
Approach LOS		D			D			D					
Queue Length 50th (ft)		156			141		104	332	259				
Queue Length 95th (ft)		209			183		171	#459	#421				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		777			898		513	1024	510				
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		0.68			0.66		0.36	0.89	0.80				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 76 (69%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 42.3 Intersection LOS: D
Intersection Capacity Utilization 63.0% 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: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	1299	0	
Future Volume (vph)	0	0	0	0	1299	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5085	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5085	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	
Adj. Flow (vph)	0	0	0	0	1326	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	1326	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					81.0		29.0
Total Split (s)					81.0		29.0
Total Split (%)					73.6%		26%
Maximum Green (s)					76.0		23.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					69.0		16.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					77.0		
Actuated g/C Ratio					0.70		
v/c Ratio					0.37		
Control Delay					2.9		
Queue Delay					0.2		
Total Delay					3.1		
LOS					A		
Approach Delay					3.1		
Approach LOS					A		
Queue Length 50th (ft)					53		
Queue Length 95th (ft)					58		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3559		
Starvation Cap Reductn					1144		
Spillback Cap Reductn					13		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.55		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 3.1		Intersection LOS: A	
Intersection Capacity Utilization 28.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations			↑↑				
Traffic Volume (vph)	0	0	730	0	0	0	
Future Volume (vph)	0	0	730	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3505	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3505	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	
Adj. Flow (vph)	0	0	753	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	753	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			74.0				26.0
Total Split (s)			74.0				36.0
Total Split (%)			67.3%				33%
Maximum Green (s)			69.0				31.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			62.0				14.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			70.0				
Actuated g/C Ratio			0.64				
v/c Ratio			0.34				
Control Delay			1.9				
Queue Delay			0.2				
Total Delay			2.1				
LOS			A				
Approach Delay			2.1				
Approach LOS			A				
Queue Length 50th (ft)			18				
Queue Length 95th (ft)			22				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2230				
Starvation Cap Reductn			645				
Spillback Cap Reductn			0				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.48				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 23.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	175	0	0	0	135	1123
Future Volume (vph)	175	0	0	0	135	1123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.97					0.99
Frt						
Flt Protected	0.950					0.995
Satd. Flow (prot)	2929	0	0	0	0	4554
Flt Permitted	0.950					0.995
Satd. Flow (perm)	2849	0	0	0	0	4528
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	19				124	
Peak Hour Factor	0.96	0.96	0.92	0.92	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	0%	2%	2%
Adj. Flow (vph)	182	0	0	0	136	1134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	182	0	0	0	0	1270
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	29.0				81.0	81.0
Total Split (s)	29.0				81.0	81.0
Total Split (%)	26.4%				73.6%	73.6%
Maximum Green (s)	23.0				76.0	76.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	16.0				69.0	69.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	24.0					77.0
Actuated g/C Ratio	0.22					0.70
v/c Ratio	0.28					0.40
Control Delay	8.1					1.4
Queue Delay	0.6					0.4
Total Delay	8.6					1.7
LOS	A					A
Approach Delay	8.6					1.7
Approach LOS	A					A
Queue Length 50th (ft)	9					24
Queue Length 95th (ft)	13					18
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	639					3187
Starvation Cap Reductn	211					1181
Spillback Cap Reductn	0					45
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.43					0.63

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 2.6		Intersection LOS: A	
Intersection Capacity Utilization 41.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	25	158	0	0	160	31	16	476	257	0	0	0	
Future Volume (vph)	25	158	0	0	160	31	16	476	257	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.99								
Frt					0.978				0.850				
Flt Protected		0.993						0.998					
Satd. Flow (prot)	0	3066	0	0	1535	0	0	3122	1454	0	0	0	
Flt Permitted		0.890						0.998					
Satd. Flow (perm)	0	2748	0	0	1535	0	0	3122	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					8								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Peds. (#/hr)						16							
Confl. Bikes (#/hr)						29			60				
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	2%	0%	0%	5%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	26	165	0	0	165	32	16	491	265	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	191	0	0	197	0	0	507	265	0	0	0	
Turn Type	Perm	NA			NA		Split	NA	Prot				
Protected Phases		5			5		1	1	1				2
Permitted Phases	5												
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (s)	27.0	27.0			27.0		61.0	61.0	61.0				22.0
Total Split (%)	24.5%	24.5%			24.5%		55.5%	55.5%	55.5%				20%
Maximum Green (s)	22.0	22.0			22.0		56.0	56.0	56.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	15.0	15.0			15.0		49.0	49.0	49.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		23.0			23.0			57.0	57.0				
Actuated g/C Ratio		0.21			0.21			0.52	0.52				
v/c Ratio		0.33			0.60			0.31	0.35				
Control Delay		42.0			46.5			17.7	19.1				
Queue Delay		4.3			0.0			0.7	1.2				
Total Delay		46.3			46.5			18.4	20.3				
LOS		D			D			B	C				
Approach Delay		46.3			46.5			19.1					
Approach LOS		D			D			B					
Queue Length 50th (ft)		72			122			84	84				
Queue Length 95th (ft)		110			200			125	139				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		574			327			1617	753				
Starvation Cap Reductn		305			0			740	297				
Spillback Cap Reductn		0			0			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.71			0.60			0.58	0.58				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 71 (65%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 28.2		Intersection LOS: C	
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	557	346	0	0	0	0	0	720	118	
Future Volume (vph)	0	0	0	557	346	0	0	0	0	0	720	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.979		
Flt Protected				0.950	0.984								
Satd. Flow (prot)	0	0	0	1614	1776	0	0	0	0	0	4438	0	
Flt Permitted				0.950	0.984								
Satd. Flow (perm)	0	0	0	1614	1776	0	0	0	0	0	4438	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											28		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												44	
Peak Hour Factor	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	1%	
Adj. Flow (vph)	0	0	0	568	353	0	0	0	0	0	735	120	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	398	523	0	0	0	0	0	855	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				51.0	51.0						35.0		24.0
Total Split (s)				51.0	51.0						35.0		24.0
Total Split (%)				46.4%	46.4%						31.8%		22%
Maximum Green (s)				46.0	46.0						29.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				39.0	39.0						22.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				48.0	48.0						31.0		
Actuated g/C Ratio				0.44	0.44						0.28		
v/c Ratio				0.57	0.68						0.67		
Control Delay				27.1	30.2						31.7		
Queue Delay				0.0	0.0						0.0		
Total Delay				27.1	30.2						31.7		
LOS				C	C						C		
Approach Delay					28.8						31.7		
Approach LOS					C						C		
Queue Length 50th (ft)				216	303						203		
Queue Length 95th (ft)				320	434						250		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				704	774						1270		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.57	0.68						0.67		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 4 (4%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	65	513	0	0	0
Future Volume (vph)	0	65	513	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3124	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3124	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		376				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.91	0.91	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	71	540	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	71	540	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		33.0	77.0			
Total Split (s)		33.0	77.0			
Total Split (%)		30.0%	70.0%			
Maximum Green (s)		29.0	72.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		22.0	65.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		29.0	72.0			
Actuated g/C Ratio		0.26	0.65			
v/c Ratio		0.11	0.26			
Control Delay		0.3	1.7			
Queue Delay		0.0	0.3			
Total Delay		0.3	2.0			
LOS		A	A			
Approach Delay	0.3		2.0			
Approach LOS	A		A			
Queue Length 50th (ft)		0	21			
Queue Length 95th (ft)		0	23			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		674	2044			
Starvation Cap Reductn		0	834			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.11	0.45			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 68 (62%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	104	304	335	0	0	0	0	0	454	74
Future Volume (vph)	0	0	104	304	335	0	0	0	0	0	454	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.98	
Frt			0.865								0.979	
Flt Protected					0.977							
Satd. Flow (prot)	0	0	1465	0	3128	0	0	0	0	0	3018	0
Flt Permitted					0.977							
Satd. Flow (perm)	0	0	1465	0	3128	0	0	0	0	0	3018	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											17	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												135
Confl. Bikes (#/hr)												40
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	1%	2%	1%	0%	0%	0%	0%	0%	3%	2%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	109	313	345	0	0	0	0	0	459	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	109	0	658	0	0	0	0	0	534	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			73.0	73.0	73.0						37.0	
Total Split (s)			73.0	73.0	73.0						37.0	
Total Split (%)			66.4%	66.4%	66.4%						33.6%	
Maximum Green (s)			64.0	64.0	64.0						32.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			57.0	57.0	57.0						25.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			69.0		69.0						33.0	
Actuated g/C Ratio			0.63		0.63						0.30	
v/c Ratio			0.12		0.34						0.58	
Control Delay			8.7		10.3						34.6	
Queue Delay			0.0		0.0						0.0	
Total Delay			8.7		10.3						34.6	
LOS			A		B						C	
Approach Delay		8.7			10.3						34.6	
Approach LOS		A			B						C	
Queue Length 50th (ft)			29		106						162	
Queue Length 95th (ft)			52		139						220	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			918		1962						917	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.12		0.34						0.58	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

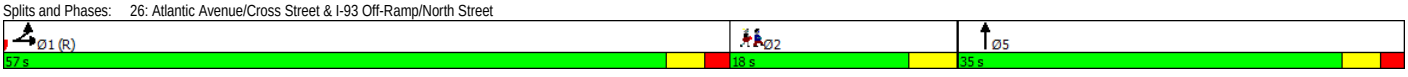
Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	751	46	0	0	0	0	0	562	34	0	0	0	
Future Volume (vph)	751	46	0	0	0	0	0	562	34	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								0.99					
Frt								0.991					
Flt Protected	0.950	0.958											
Satd. Flow (prot)	1498	1517	0	0	0	0	0	3083	0	0	0	0	
Flt Permitted	0.950	0.958											
Satd. Flow (perm)	1498	1517	0	0	0	0	0	3083	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									68				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	
Adj. Flow (vph)	774	47	0	0	0	0	0	592	36	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	449	372	0	0	0	0	0	628	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	57.0	57.0						35.0					18.0
Total Split (%)	51.8%	51.8%						31.8%					16%
Maximum Green (s)	52.0	52.0						30.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	53.0	53.0						31.0					
Actuated g/C Ratio	0.48	0.48						0.28					
v/c Ratio	0.62	0.51						0.72					
Control Delay	25.8	22.7						48.1					
Queue Delay	0.0	0.0						0.0					
Total Delay	25.8	22.7						48.1					
LOS	C	C						D					
Approach Delay		24.4						48.1					
Approach LOS		C						D					
Queue Length 50th (ft)	238	184						246					
Queue Length 95th (ft)	355	277						307					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	721	730						873					
Starvation Cap Reductn	0	0						0					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.62	0.51						0.72					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 72 (65%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 34.7		Intersection LOS: C	
Intersection Capacity Utilization 49.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	47	0	0	107	88	472	760	74	0	0	0
Future Volume (vph)	27	47	0	0	107	88	472	760	74	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.77				0.84			0.84				
Frt					0.939			0.991				
Flt Protected	0.950							0.982				
Satd. Flow (prot)	1562	1676	0	0	1317	0	0	2924	0	0	0	0
Flt Permitted	0.521							0.982				
Satd. Flow (perm)	660	1676	0	0	1317	0	0	2577	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								10				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	496					496	394		2640			
Confl. Bikes (#/hr)						10			67			
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	4%	0%	2%	4%	0%	5%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	32	55	0	0	115	95	482	776	76	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	55	0	0	210	0	0	1334	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (s)	39.0	39.0			39.0		71.0	71.0				
Total Split (%)	35.5%	35.5%			35.5%		64.5%	64.5%				
Maximum Green (s)	34.0	34.0			34.0		66.0	66.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	27.0	27.0			27.0		59.0	59.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	35.0	35.0			35.0			67.0				
Actuated g/C Ratio	0.32	0.32			0.32			0.61				
v/c Ratio	0.15	0.10			0.50			0.75				
Control Delay	29.4	27.2			35.5			8.6				
Queue Delay	0.0	0.0			0.0			1.4				
Total Delay	29.4	27.2			35.5			10.0				
LOS	C	C			D			B				
Approach Delay		28.0			35.5			10.0				
Approach LOS		C			D			B				
Queue Length 50th (ft)	16	27			120			69				
Queue Length 95th (ft)	39	54			195			111				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	210	533			419			1784				
Starvation Cap Reductn	0	0			0			186				
Spillback Cap Reductn	0	0			0			255				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.15	0.10			0.50			0.87				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

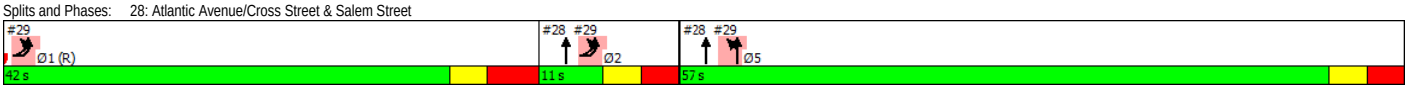
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	847	29	0	0			
Future Volume (vph)	0	0	847	29	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.995						
Flt Protected									
Satd. Flow (prot)	0	0	3469	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3469	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			5						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				152					
Confl. Bikes (#/hr)				57					
Peak Hour Factor	0.92	0.92	0.98	0.98	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	864	30	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	894	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							42.0	10.0	57.0
Total Split (s)							42.0	11.0	57.0
Total Split (%)							38%	10%	52%
Maximum Green (s)							35.0	5.0	51.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							28.0		44.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			62.0						
Actuated g/C Ratio			0.56						
v/c Ratio			0.46						
Control Delay			8.6						
Queue Delay			3.2						
Total Delay			11.8						
LOS			B						
Approach Delay			11.8						
Approach LOS			B						
Queue Length 50th (ft)			138						
Queue Length 95th (ft)			156						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			1957						
Starvation Cap Reductn			932						
Spillback Cap Reductn			208						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.87						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

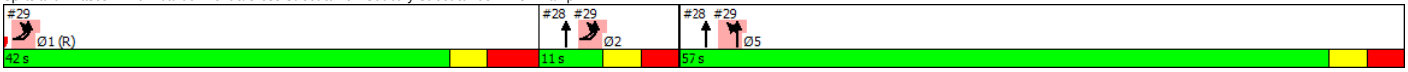


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	256	125	0	210	654	0	0	0	0		
Future Volume (vph)	256	125	0	210	654	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Frt											
Flt Protected		0.950			0.988						
Satd. Flow (prot)	0	3547	0	0	3293	0	0	0	0		
Flt Permitted		0.950			0.988						
Satd. Flow (perm)	0	3547	0	0	3293	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Peak Hour Factor	0.96	0.96	0.96	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	0%	10%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	267	130	0	214	667	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	397	0	0	881	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				57.0	57.0					42.0	10.0
Total Split (s)				57.0	57.0					42.0	11.0
Total Split (%)				51.8%	51.8%					38%	10%
Maximum Green (s)				51.0	51.0					35.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				44.0	44.0					28.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		47.0			52.0						
Actuated g/C Ratio		0.43			0.47						
v/c Ratio		0.26			0.57						
Control Delay		20.9			6.5						
Queue Delay		0.0			0.1						
Total Delay		20.9			6.6						
LOS		C			A						
Approach Delay		20.9			6.6						
Approach LOS		C			A						
Queue Length 50th (ft)		91			220						
Queue Length 95th (ft)		126			206						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1515			1556						
Starvation Cap Reductn		0			82						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.26			0.60						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			

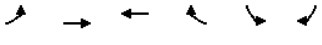
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	836	292	0	0
Future Volume (Veh/h)	0	0	836	292	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	909	317	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			158			136
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	1068	613			1226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	693	150			882	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	320	733			649	

Direction, Lane #	WB 1	NB 1	NB 2
Volume Total	0	606	620
Volume Left	0	0	0
Volume Right	0	0	317
cSH	1700	1700	1700
Volume to Capacity	0.00	0.36	0.36
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		35.8%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	19	26	0	2	100
Future Volume (Veh/h)	15	19	26	0	2	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.82	0.82	0.81	0.81
Hourly flow rate (vph)	16	20	32	0	2	123
Pedestrians		13	35		137	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	3		11	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	169				256	182
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	169				256	182
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	84
cM capacity (veh/h)	1259				626	759

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	36	32	125
Volume Left	16	0	2
Volume Right	0	0	123
cSH	1259	1700	756
Volume to Capacity	0.01	0.02	0.17
Queue Length 95th (ft)	1	0	15
Control Delay (s)	3.6	0.0	10.7
Lane LOS	A		B
Approach Delay (s)	3.6	0.0	10.7
Approach LOS			B

Intersection Summary				
Average Delay			7.6	
Intersection Capacity Utilization			29.5%	ICU Level of Service A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	25	944	0	0	0
Future Volume (Veh/h)	0	25	944	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	32	983	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	983	492			983	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406	0			406	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	449	836			905	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	16	16	492	492
Volume Left	0	0	0	0
Volume Right	16	16	0	0
cSH	836	836	1700	1700
Volume to Capacity	0.02	0.02	0.29	0.29
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	9.4	9.4	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.4		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			36.1%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	44	3	10
Future Volume (Veh/h)	0	0	15	44	3	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.81	0.81
Hourly flow rate (vph)	0	0	16	48	4	12
Pedestrians	104					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	194	114	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194	114	120			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	99			
cM capacity (veh/h)	791	944	1437			

Direction, Lane #	NB 1	SB 1
Volume Total	64	16
Volume Left	16	0
Volume Right	0	12
cSH	1437	1700
Volume to Capacity	0.01	0.01
Queue Length 95th (ft)	1	0
Control Delay (s)	1.9	0.0
Lane LOS	A	
Approach Delay (s)	1.9	0.0
Approach LOS		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	16.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	41	11	2	112	10	33
Future Volume (Veh/h)	41	11	2	112	10	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.84	0.84	0.90	0.90
Hourly flow rate (vph)	43	11	2	133	11	37
Pedestrians	73			164	85	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	6			14	7	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			139		344	298
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		344	298
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	94
cM capacity (veh/h)			1354		557	593

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	135	48
Volume Left	0	2	11
Volume Right	11	0	37
cSH	1700	1354	584
Volume to Capacity	0.03	0.00	0.08
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.1	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.7
Approach LOS			B

Intersection Summary					
Average Delay			2.4		
Intersection Capacity Utilization			32.8%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	196	34	0	0	0	4	0	1087	48	0	0	0	
Future Volume (vph)	196	34	0	0	0	4	0	1087	48	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt						0.865		0.994					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3112	0	0	0	1676	0	3026	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3112	0	0	0	1676	0	3026	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)						250		6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			309			132			151		
Travel Time (s)		4.4			8.4			3.6			4.1		
Confl. Bikes (#/hr)						1			76				
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	204	35	0	0	0	4	0	1132	50	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	204	35	0	0	0	4	0	1182	0	0	0	0	
Turn Type	Split	NA				Prot		NA					
Protected Phases	5	5				6		1					2
Permitted Phases													
Detector Phase	5	5				6		1					
Switch Phase													
Minimum Initial (s)	8.0	8.0				4.0		8.0					8.0
Minimum Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (s)	20.0	20.0				14.0		58.0					18.0
Total Split (%)	18.2%	18.2%				12.7%		52.7%					16%
Maximum Green (s)	15.0	15.0				9.0		53.0					14.0
Yellow Time (s)	3.0	3.0				3.0		3.0					4.0
All-Red Time (s)	2.0	2.0				2.0		2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0				-1.0		-1.0					
Total Lost Time (s)	4.0	4.0				4.0		4.0					
Lead/Lag	Lead	Lead				Lag		Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0				2.0		2.0					0.2
Recall Mode	Max	Max				Max		C-Max					Ped
Walk Time (s)	7.0	7.0				7.0		7.0					7.0
Flash Dont Walk (s)	8.0	8.0				2.0		46.0					7.0
Pedestrian Calls (#/hr)	0	0				0		0					0
Act Effct Green (s)	16.0	16.0				10.0		54.0					
Actuated g/C Ratio	0.15	0.15				0.09		0.49					
v/c Ratio	0.96	0.08				0.01		0.79					
Control Delay	98.1	40.9				0.0		29.7					
Queue Delay	48.8	0.0				0.0		2.4					
Total Delay	146.9	40.9				0.0		32.1					
LOS	F	D				A		C					
Approach Delay		131.4						32.1					
Approach LOS		F						C					
Queue Length 50th (ft)	157	12				0		395					
Queue Length 95th (ft)	#323	m28				m0		m391					
Internal Link Dist (ft)		81			229			52			71		
Turn Bay Length (ft)													
Base Capacity (vph)	212	452				379		1488					
Starvation Cap Reductn	91	0				0		187					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.69	0.08				0.01		0.91					

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 50 (45%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 48.7 Intersection LOS: D
Intersection Capacity Utilization 48.4% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	155	230	90	1015	51	0	0	0
Future Volume (vph)	0	0	0	0	155	230	90	1015	51	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.89			0.97				
Frt					0.919			0.993				
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	1298	0	0	3140	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	1298	0	0	3136	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					1			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			162	
Travel Time (s)		4.7			4.9			15.5			4.4	
Confl. Peds. (#/hr)						100	47		1255			
Confl. Bikes (#/hr)						1			77			
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	185	274	93	1046	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	459	0	0	1192	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					5			1				
Permitted Phases							1					
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					23.0		87.0	87.0				
Total Split (s)					23.0		87.0	87.0				
Total Split (%)					20.9%		79.1%	79.1%				
Maximum Green (s)					18.0		82.0	82.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					11.0		75.0	75.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					19.0			83.0				
Actuated g/C Ratio					0.17			0.75				
v/c Ratio					2.04			0.50				
Control Delay					509.1			3.1				
Queue Delay					0.0			0.1				
Total Delay					509.1			3.1				
LOS					F			A				
Approach Delay					509.1			3.1				
Approach LOS					F			A				
Queue Length 50th (ft)					~516			155				
Queue Length 95th (ft)					#660			85				
Internal Link Dist (ft)		91			99			490			82	
Turn Bay Length (ft)												
Base Capacity (vph)					225			2369				
Starvation Cap Reductn					0			193				
Spillback Cap Reductn					0			125				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					2.04			0.55				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 14 (13%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.04
Intersection Signal Delay: 143.8 Intersection LOS: F
Intersection Capacity Utilization 121.0% ICU Level of Service H
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: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	211	33	0	0	0	0	0	1000	31	
Future Volume (vph)	0	0	0	211	33	0	0	0	0	0	1000	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.996		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3090	1605	0	0	0	0	0	4597	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3090	1605	0	0	0	0	0	4597	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											6		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												50	
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	220	34	0	0	0	0	0	1111	34	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	220	34	0	0	0	0	0	1145	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				31.0	31.0						58.0		21.0
Total Split (s)				31.0	31.0						58.0		21.0
Total Split (%)				28.2%	28.2%						52.7%		19%
Maximum Green (s)				26.0	26.0						52.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				19.0	19.0						45.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				28.0	28.0						54.0		
Actuated g/C Ratio				0.25	0.25						0.49		
v/c Ratio				0.28	0.08						0.51		
Control Delay				56.2	54.9						7.2		
Queue Delay				18.4	2.3						0.1		
Total Delay				74.6	57.2						7.3		
LOS				E	E						A		
Approach Delay					72.3						7.3		
Approach LOS					E						A		
Queue Length 50th (ft)				0	23						40		
Queue Length 95th (ft)				m0	m23						66		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				786	408						2259		
Starvation Cap Reductn				549	303						224		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.93	0.32						0.56		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 103 (94%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 128.9%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	143	25	0	0	0	0	0	0	87	1006	0	
Future Volume (vph)	0	143	25	0	0	0	0	0	0	87	1006	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	14	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.978											
Flt Protected											0.996		
Satd. Flow (prot)	0	3352	0	0	0	0	0	0	0	0	4600	0	
Flt Permitted											0.996		
Satd. Flow (perm)	0	3352	0	0	0	0	0	0	0	0	4600	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		16											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		314			161			268			332		
Travel Time (s)		8.6			4.4			7.3			9.1		
Confl. Bikes (#/hr)			5										
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	
Adj. Flow (vph)	0	157	27	0	0	0	0	0	0	96	1105	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	184	0	0	0	0	0	0	0	0	1201	0	
Turn Type		NA								Perm	NA		
Protected Phases		5									1		2
Permitted Phases										1			
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		26.0								66.0	66.0		18.0
Total Split (s)		26.0								66.0	66.0		18.0
Total Split (%)		23.6%								60.0%	60.0%		16%
Maximum Green (s)		22.0								61.0	61.0		14.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		1.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		3.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		15.0								54.0	54.0		7.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		23.0									62.0		
Actuated g/C Ratio		0.21									0.56		
v/c Ratio		0.26									0.46		
Control Delay		34.2									4.0		
Queue Delay		0.3									0.1		
Total Delay		34.5									4.2		
LOS		C									A		
Approach Delay		34.5									4.2		
Approach LOS		C									A		
Queue Length 50th (ft)		52									33		
Queue Length 95th (ft)		85									41		
Internal Link Dist (ft)		234			81			188			252		
Turn Bay Length (ft)													
Base Capacity (vph)		713									2592		
Starvation Cap Reductn		0									375		
Spillback Cap Reductn		193									416		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.35									0.55		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 102 (93%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Surface/Purchase/SASB & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	26	200	0	0	0	0	0	1067	292
Future Volume (vph)	0	0	0	26	200	0	0	0	0	0	1067	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor				0.78							0.98	
Frt											0.968	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1464	3022	0	0	0	0	0	4404	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1143	3022	0	0	0	0	0	4404	0
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)											107	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		395			161			332			240	
Travel Time (s)		10.8			4.4			9.1			6.5	
Confl. Peds. (#/hr)				219								84
Confl. Bikes (#/hr)												50
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	0	0	0	28	215	0	0	0	0	0	1123	307
Shared Lane Traffic (%)				0%								
Lane Group Flow (vph)	0	0	0	28	215	0	0	0	0	0	1430	0
Turn Type				Split	NA						NA	
Protected Phases				5	5						1	
Permitted Phases												
Detector Phase				5	5						1	
Switch Phase												
Minimum Initial (s)				8.0	8.0						8.0	
Minimum Split (s)				42.0	42.0						68.0	
Total Split (s)				42.0	42.0						68.0	
Total Split (%)				38.2%	38.2%						61.8%	
Maximum Green (s)				33.0	33.0						63.0	
Yellow Time (s)				3.0	3.0						3.0	
All-Red Time (s)				6.0	6.0						2.0	
Lost Time Adjust (s)				-1.0	-1.0						-1.0	
Total Lost Time (s)				8.0	8.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0						2.0	
Recall Mode				Max	Max						C-Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				26.0	26.0						56.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				34.0	34.0						64.0	
Actuated g/C Ratio				0.31	0.31						0.58	
v/c Ratio				0.06	0.23						0.55	
Control Delay				28.6	29.2						1.1	
Queue Delay				1.6	6.9						0.0	
Total Delay				30.2	36.2						1.1	
LOS				C	D						A	
Approach Delay					35.5						1.1	
Approach LOS					D						A	
Queue Length 50th (ft)				13	54						1	
Queue Length 95th (ft)				m29	94						6	
Internal Link Dist (ft)		315			81			252			160	
Turn Bay Length (ft)												
Base Capacity (vph)				452	934						2607	
Starvation Cap Reductn				342	663						27	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.25	0.79						0.55	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 145.8%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

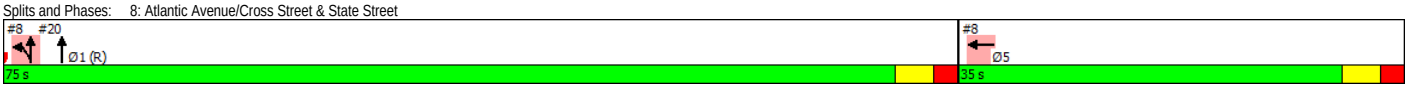
Splits and Phases: 7: Surface/Purchase/SASB & State Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	88	57	124	1147	36	0	0	0
Future Volume (vph)	0	0	0	0	88	57	124	1147	36	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.92			0.98				
Frt					0.947			0.996				
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	1678	0	0	3140	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	0	0	0	1678	0	0	3127	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					3			5				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		161			290			183			264	
Travel Time (s)		4.4			7.9			5.0			7.2	
Confl. Peds. (#/hr)						177	97		780			
Confl. Bikes (#/hr)						4			75			
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	0	93	60	128	1182	37	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	153	0	0	1347	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					35.0		75.0	75.0				
Total Split (s)					35.0		75.0	75.0				
Total Split (%)					31.8%		68.2%	68.2%				
Maximum Green (s)					30.0		70.0	70.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					23.0		63.0	63.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					31.0			71.0				
Actuated g/C Ratio					0.28			0.65				
v/c Ratio					0.32			0.66				
Control Delay					32.9			3.2				
Queue Delay					0.0			0.1				
Total Delay					32.9			3.3				
LOS					C			A				
Approach Delay					32.9			3.3				
Approach LOS					C			A				
Queue Length 50th (ft)					84			82				
Queue Length 95th (ft)					141			68				
Internal Link Dist (ft)		81			210			103			184	
Turn Bay Length (ft)												
Base Capacity (vph)					475			2028				
Starvation Cap Reductn					0			118				
Spillback Cap Reductn					0			97				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.32			0.71				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 6.3		Intersection LOS: A	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Atlantic Avenue/Cross Street & State Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	89	0	0	1209	3	
Future Volume (vph)	0	89	0	0	1209	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	13	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor					1.00		
Frt		0.865					
Flt Protected							
Satd. Flow (prot)	0	1498	0	0	4576	0	
Flt Permitted							
Satd. Flow (perm)	0	1498	0	0	4576	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		283					
Link Speed (mph)	25			25	25		
Link Distance (ft)	358			212	329		
Travel Time (s)	9.8			5.8	9.0		
Confl. Bikes (#/hr)						52	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.90	0.90	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	0	98	0	0	1343	3	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	98	0	0	1346	0	
Turn Type		Prot			NA		
Protected Phases		5			1		2
Permitted Phases							
Detector Phase		5			1		
Switch Phase							
Minimum Initial (s)		8.0			8.0		8.0
Minimum Split (s)		19.0			69.0		22.0
Total Split (s)		19.0			69.0		22.0
Total Split (%)		17.3%			62.7%		20%
Maximum Green (s)		15.0			63.0		18.0
Yellow Time (s)		3.0			3.0		4.0
All-Red Time (s)		1.0			3.0		0.0
Lost Time Adjust (s)		0.0			-2.0		
Total Lost Time (s)		4.0			4.0		
Lead/Lag					Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)		2.0			2.0		2.0
Recall Mode		Ped			C-Max		Ped
Walk Time (s)		7.0			7.0		7.0
Flash Dont Walk (s)		8.0			56.0		11.0
Pedestrian Calls (#/hr)		0			0		5
Act Effct Green (s)		15.0			65.0		
Actuated g/C Ratio		0.14			0.59		
v/c Ratio		0.22			0.50		
Control Delay		1.1			4.0		
Queue Delay		0.0			0.0		
Total Delay		1.1			4.0		
LOS		A			A		
Approach Delay	1.1				4.0		
Approach LOS	A				A		
Queue Length 50th (ft)		0			64		
Queue Length 95th (ft)		0			76		
Internal Link Dist (ft)	278			132	249		
Turn Bay Length (ft)							
Base Capacity (vph)		448			2704		
Starvation Cap Reductn		0			48		
Spillback Cap Reductn		0			0		
Storage Cap Reductn		0			0		
Reduced v/c Ratio		0.22			0.51		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 100 (91%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Surface/Purchase/SASB & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	201	68	0	0	0	0	0	0	180	1117	0	
Future Volume (vph)	0	201	68	0	0	0	0	0	0	180	1117	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12	
Storage Length (ft)	0		75	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	
Ped Bike Factor		1.00											
Frt		0.962											
Flt Protected											0.993		
Satd. Flow (prot)	0	3482	0	0	0	0	0	0	0	0	4545	0	
Flt Permitted											0.993		
Satd. Flow (perm)	0	3482	0	0	0	0	0	0	0	0	4545	0	
Right Turn on Red			Yes			Yes			Yes	No		Yes	
Satd. Flow (RTOR)		35											
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		305			204			514			212		
Travel Time (s)		8.3			5.6			14.0			5.8		
Confl. Bikes (#/hr)			4										
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	2%	2%	0%	
Adj. Flow (vph)	0	258	87	0	0	0	0	0	0	200	1241	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	345	0	0	0	0	0	0	0	0	1441	0	
Turn Type		NA								Split	NA		
Protected Phases		5								1	1		2
Permitted Phases													
Detector Phase		5								1	1		
Switch Phase													
Minimum Initial (s)		8.0								8.0	8.0		8.0
Minimum Split (s)		19.0								72.0	72.0		19.0
Total Split (s)		19.0								72.0	72.0		19.0
Total Split (%)		17.3%								65.5%	65.5%		17%
Maximum Green (s)		14.0								67.0	67.0		15.0
Yellow Time (s)		3.0								3.0	3.0		4.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.0									-1.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)		2.0								2.0	2.0		2.0
Recall Mode		Max								C-Max	C-Max		Ped
Walk Time (s)		7.0								7.0	7.0		7.0
Flash Dont Walk (s)		7.0								60.0	60.0		8.0
Pedestrian Calls (#/hr)		0								0	0		0
Act Effct Green (s)		15.0									68.0		
Actuated g/C Ratio		0.14									0.62		
v/c Ratio		0.68									0.51		
Control Delay		48.2									1.2		
Queue Delay		66.6									0.0		
Total Delay		114.7									1.2		
LOS		F									A		
Approach Delay		114.7									1.2		
Approach LOS		F									A		
Queue Length 50th (ft)		111									9		
Queue Length 95th (ft)		135									10		
Internal Link Dist (ft)		225			124			434			132		
Turn Bay Length (ft)													
Base Capacity (vph)		505									2809		
Starvation Cap Reductn		0									48		
Spillback Cap Reductn		342									6		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		2.12									0.52		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 104 (95%), Referenced to phase 1:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Surface/Purchase/SASB & High Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	381	0	0	775	0	0	
Future Volume (vph)	381	0	0	775	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	13	13	12	12	
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00	
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	3152	0	0	3158	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3152	0	0	3158	0	0	
Right Turn on Red	No	Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	204			692	570		
Travel Time (s)	5.6			18.9	15.5		
Peak Hour Factor	0.95	0.95	0.96	0.96	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	
Parking (#/hr)				0			
Adj. Flow (vph)	401	0	0	807	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	401	0	0	807	0	0	
Turn Type	Prot			NA			
Protected Phases	5			1			2
Permitted Phases							
Detector Phase	5			1			
Switch Phase							
Minimum Initial (s)	8.0			8.0			8.0
Minimum Split (s)	25.0			68.0			17.0
Total Split (s)	25.0			68.0			17.0
Total Split (%)	22.7%			61.8%			15%
Maximum Green (s)	20.0			63.0			13.0
Yellow Time (s)	3.0			3.0			4.0
All-Red Time (s)	2.0			2.0			0.0
Lost Time Adjust (s)	0.0			-1.0			
Total Lost Time (s)	5.0			4.0			
Lead/Lag				Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	Max			C-Max			Ped
Walk Time (s)	7.0			7.0			7.0
Flash Dont Walk (s)	13.0			56.0			6.0
Pedestrian Calls (#/hr)	0			0			0
Act Effct Green (s)	20.0			64.0			
Actuated g/C Ratio	0.18			0.58			
v/c Ratio	0.70			0.44			
Control Delay	40.4			5.1			
Queue Delay	57.0			0.0			
Total Delay	97.4			5.1			
LOS	F			A			
Approach Delay	97.4			5.1			
Approach LOS	F			A			
Queue Length 50th (ft)	143			99			
Queue Length 95th (ft)	194			96			
Internal Link Dist (ft)	124			612	490		
Turn Bay Length (ft)							
Base Capacity (vph)	573			1837			
Starvation Cap Reductn	253			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	1.25			0.44			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 35.8		Intersection LOS: D	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Atlantic Avenue/Cross Street & High Street

Lane Group	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	Ø2	Ø6
Lane Configurations												
Traffic Volume (vph)	6	6	757	533	761	249	74	376	520	315		
Future Volume (vph)	6	6	757	533	761	249	74	376	520	315		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	13	11	12	13	12	12	13	12		
Storage Length (ft)		0			250			0		0		
Storage Lanes		0			1			1		0		
Taper Length (ft)		25						25				
Lane Util. Factor	0.95	0.95	0.95	0.91	0.91	0.95	0.95	0.91	0.91	0.95		
Ped Bike Factor									0.98			
Frt					0.850	0.850			0.946			
Flt Protected			0.999					0.950	0.998			
Satd. Flow (prot)	0	0	3321	1475	1323	1427	0	1438	2859	0		
Flt Permitted			0.955					0.950	0.998			
Satd. Flow (perm)	0	0	3175	1475	1323	1427	0	1438	2859	0		
Right Turn on Red						No				No		
Satd. Flow (RTOR)												
Link Speed (mph)			25	25					25			
Link Distance (ft)			248	506					457			
Travel Time (s)			6.8	13.8					12.5			
Confl. Bikes (#/hr)					18	18				76		
Peak Hour Factor	0.98	0.98	0.98	0.97	0.97	0.97	0.98	0.98	0.98	0.98		
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	2%	3%	2%	7%		
Adj. Flow (vph)	6	6	772	549	785	257	76	384	531	321		
Shared Lane Traffic (%)					0%	0%		10%				
Lane Group Flow (vph)	0	0	784	549	785	257	0	422	890	0		
Turn Type	custom	custom	NA	NA	Prot	Prot	Split	Split	NA			
Protected Phases			5	5	5	5	1	1	1		2	6
Permitted Phases	2 5	2 5	2									
Detector Phase	2 5	2 5	5	5	5	5	1	1	1			
Switch Phase												
Minimum Initial (s)			8.0	8.0	8.0	8.0	8.0	8.0	8.0		4.0	4.0
Minimum Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (s)			35.0	35.0	35.0	35.0	43.0	43.0	43.0		26.0	6.0
Total Split (%)			31.8%	31.8%	31.8%	31.8%	39.1%	39.1%	39.1%		24%	5%
Maximum Green (s)			28.5	28.5	28.5	28.5	36.5	36.5	36.5		19.5	4.0
Yellow Time (s)			3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	2.0
All-Red Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	0.0
Lost Time Adjust (s)			0.0	-1.0	-1.0	-1.0		-1.0	-1.0			
Total Lost Time (s)			6.5	5.5	5.5	5.5		5.5	5.5			
Lead/Lag			Lead	Lead	Lead	Lead	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	2.0
Recall Mode			Max	Max	Max	Max	C-Max	C-Max	C-Max		None	Ped
Walk Time (s)			7.0	7.0	7.0	7.0	8.0	8.0	8.0		7.0	4.0
Flash Dont Walk (s)			21.5	21.5	21.5	21.5	28.5	28.5	28.5		12.5	0.0
Pedestrian Calls (#/hr)			0	0	0	0	0	0	0		91	0
Act Effct Green (s)			44.1	29.5	29.5	29.5		42.7	42.7			
Actuated g/C Ratio			0.40	0.27	0.27	0.27		0.39	0.39			
v/c Ratio			0.60	1.39	2.22	0.67		0.76	0.80			
Control Delay			3.7	223.4	580.0	46.0		36.1	32.8			
Queue Delay			5.3	10.7	0.0	0.0		0.0	0.0			
Total Delay			8.9	234.1	580.0	46.0		36.1	32.8			
LOS			A	F	F	D		D	C			
Approach Delay			8.9	374.4					33.9			
Approach LOS			A	F					C			
Queue Length 50th (ft)			8	~568	~983	170		213	242			
Queue Length 95th (ft)			m6	#800	#1240	269		#486	#445			
Internal Link Dist (ft)			168	426					377			
Turn Bay Length (ft)					250	250						
Base Capacity (vph)			1310	395	354	382		558	1109			
Starvation Cap Reductn			453	0	0	0		0	0			
Spillback Cap Reductn			0	220	0	0		0	0			
Storage Cap Reductn			0	0	0	0		0	0			
Reduced v/c Ratio			0.91	3.14	2.22	0.67		0.76	0.80			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 19 (17%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.22
Intersection Signal Delay: 175.5 Intersection LOS: F
Intersection Capacity Utilization 104.7% ICU Level of Service G
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: 12: Atlantic Avenue/Cross Street & Oliver Street/Seaport Boulevard & I-93 NB On-Ramp

Lane Group	WBL	WBT	SBT	SBR	SWL2	SWL	SWR	Ø2
Lane Configurations								
Traffic Volume (vph)	382	225	1070	116	770	193	49	
Future Volume (vph)	382	225	1070	116	770	193	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor			1.00					
Frt			0.985			0.970		
Flt Protected		0.970			0.950	0.962		
Satd. Flow (prot)	0	3005	4494	0	1608	1546	0	
Flt Permitted		0.970			0.950	0.962		
Satd. Flow (perm)	0	3005	4494	0	1608	1546	0	
Right Turn on Red				Yes				
Satd. Flow (RTOR)			17					
Link Speed (mph)		25	25			25		
Link Distance (ft)		248	514			293		
Travel Time (s)		6.8	14.0			8.0		
Confl. Bikes (#/hr)				41				
Peak Hour Factor	0.85	0.85	0.91	0.91	0.98	0.98	0.98	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	4%	0%	
Adj. Flow (vph)	449	265	1176	127	786	197	50	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	714	1303	0	786	247	0	
Turn Type	Split	NA	NA		pm+pt	Prot		
Protected Phases	6	6	1		5	5		2
Permitted Phases					2			
Detector Phase	6	6	1		5	5		
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0		8.0	8.0		4.0
Minimum Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (s)	21.0	21.0	38.0		31.0	31.0		20.0
Total Split (%)	19.1%	19.1%	34.5%		28.2%	28.2%		18%
Maximum Green (s)	14.0	14.0	33.5		26.0	26.0		16.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5		3.0
All-Red Time (s)	3.5	3.5	1.0		1.5	1.5		1.0
Lost Time Adjust (s)		-2.0	-1.0		-1.0	-1.0		
Total Lost Time (s)		5.0	3.5		4.0	4.0		
Lead/Lag	Lag	Lag	Lead		Lead	Lead		Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		2.0
Recall Mode	Max	Max	C-Max		Max	Max		Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	7.0	7.0	26.5		19.0	19.0		9.0
Pedestrian Calls (#/hr)	0	0	0		0	0		50
Act Effct Green (s)		16.0	34.5		47.0	27.0		
Actuated g/C Ratio		0.15	0.31		0.43	0.25		
v/c Ratio		1.99dl	0.92		1.14	0.65		
Control Delay		309.7	28.0		112.3	46.5		
Queue Delay		0.5	3.1		0.0	0.0		
Total Delay		310.1	31.1		112.4	46.5		
LOS		F	C		F	D		
Approach Delay		310.1	31.1			96.6		
Approach LOS		F	C			F		
Queue Length 50th (ft)		~367	83		~652	157		
Queue Length 95th (ft)		m#270	#111		#886	247		
Internal Link Dist (ft)		168	434			213		
Turn Bay Length (ft)								
Base Capacity (vph)		437	1421		687	379		
Starvation Cap Reductn		21	0		0	0		
Spillback Cap Reductn		0	64		4	0		
Storage Cap Reductn		0	0		0	0		
Reduced v/c Ratio		1.72	0.96		1.15	0.65		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 16 (15%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.63			
Intersection Signal Delay: 118.6		Intersection LOS: F	
Intersection Capacity Utilization 107.6%		ICU Level of Service G	
Analysis Period (min) 15			

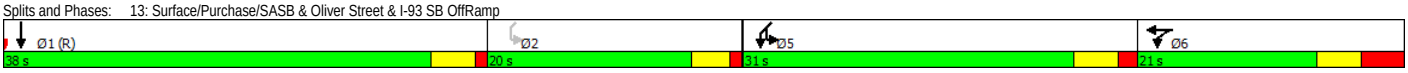
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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: 13: Surface/Purchase/SASB & Oliver Street & I-93 SB OffRamp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	145	168	0	0	0	0	0	1558	77	
Future Volume (vph)	0	0	0	145	168	0	0	0	0	0	1558	77	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.993		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	1540	3110	0	0	0	0	0	4537	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	1540	3110	0	0	0	0	0	4537	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											11		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		151			246			252			420		
Travel Time (s)		4.1			6.7			6.9			11.5		
Confl. Bikes (#/hr)												37	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	2%	3%	
Adj. Flow (vph)	0	0	0	167	193	0	0	0	0	0	1693	84	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	167	193	0	0	0	0	0	1777	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				18.0	18.0						66.0		18.0
Total Split (s)				26.0	26.0						66.0		18.0
Total Split (%)				23.6%	23.6%						60.0%		16%
Maximum Green (s)				21.0	21.0						62.0		14.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						1.0		0.0
Lost Time Adjust (s)				-1.0	-1.0						-1.0		
Total Lost Time (s)				4.0	4.0						3.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Ped	Ped						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				6.0	6.0						55.0		7.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				17.5	17.5						67.5		
Actuated g/C Ratio				0.16	0.16						0.61		
v/c Ratio				0.68	0.39						0.64		
Control Delay				67.0	52.9						5.6		
Queue Delay				2.7	0.0						1.5		
Total Delay				69.7	52.9						7.1		
LOS				E	D						A		
Approach Delay					60.7						7.1		
Approach LOS					E						A		
Queue Length 50th (ft)				126	75						110		
Queue Length 95th (ft)				190	111						m172		
Internal Link Dist (ft)		71			166			172			340		
Turn Bay Length (ft)													
Base Capacity (vph)				308	622						2786		
Starvation Cap Reductn				66	0						764		
Spillback Cap Reductn				0	0						384		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.69	0.31						0.88		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: Surface/Purchase/SASB & Pearl Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	0	0	313	1285	0	0	
Future Volume (vph)	0	0	313	1285	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	
Frt							
Flt Protected				0.990			
Satd. Flow (prot)	0	0	0	4531	0	0	
Flt Permitted				0.990			
Satd. Flow (perm)	0	0	0	4531	0	0	
Right Turn on Red		Yes	No			Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	246			240	457		
Travel Time (s)	6.7			6.5	12.5		
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	0	0	323	1325	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	1648	0	0	
Turn Type			Split	NA			
Protected Phases			1	1			2
Permitted Phases							
Detector Phase			1	1			
Switch Phase							
Minimum Initial (s)			25.0	25.0			8.0
Minimum Split (s)			32.0	32.0			18.0
Total Split (s)			92.0	92.0			18.0
Total Split (%)			83.6%	83.6%			16%
Maximum Green (s)			87.0	87.0			14.0
Yellow Time (s)			3.0	3.0			4.0
All-Red Time (s)			2.0	2.0			0.0
Lost Time Adjust (s)				0.0			
Total Lost Time (s)				5.0			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0	2.0			2.0
Recall Mode			C-Max	C-Max			Ped
Walk Time (s)							7.0
Flash Dont Walk (s)							7.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				87.0			
Actuated g/C Ratio				0.79			
v/c Ratio				0.46			
Control Delay				0.4			
Queue Delay				0.3			
Total Delay				0.7			
LOS				A			
Approach Delay				0.7			
Approach LOS				A			
Queue Length 50th (ft)				0			
Queue Length 95th (ft)				m0			
Internal Link Dist (ft)	166			160	377		
Turn Bay Length (ft)							
Base Capacity (vph)				3583			
Starvation Cap Reductn				1156			
Spillback Cap Reductn				142			
Storage Cap Reductn				0			
Reduced v/c Ratio				0.68			

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 11 (10%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 0.7 Intersection LOS: A
Intersection Capacity Utilization 77.5% ICU Level of Service D
Analysis Period (min) 15

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

Splits and Phases: 15: Atlantic Avenue/Cross Street & Pearl Street

Lane Group	EBT	EBR	EBR2	SBL2	SBL	SBT	Ø2
Lane Configurations							
Traffic Volume (vph)	602	352	307	369	710	624	
Future Volume (vph)	602	352	307	369	710	624	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	11	14	12	11	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850	0.850				
Flt Protected				0.950	0.950		
Satd. Flow (prot)	3110	1439	1405	1699	1593	1637	
Flt Permitted				0.950	0.950		
Satd. Flow (perm)	3110	1439	1405	1699	1593	1637	
Right Turn on Red			No	No			
Satd. Flow (RTOR)							
Link Speed (mph)	25					25	
Link Distance (ft)	173					252	
Travel Time (s)	4.7					6.9	
Confl. Bikes (#/hr)		19	19				
Peak Hour Factor	0.96	0.96	0.96	0.91	0.91	0.91	
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	627	367	320	405	780	686	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	627	367	320	405	780	686	
Turn Type	NA	Prot	Prot	Split	Split	NA	
Protected Phases	1	1	1	5	5	5	2
Permitted Phases							
Detector Phase	1	1	1	5	5	5	
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (s)	48.0	48.0	48.0	42.0	42.0	42.0	20.0
Total Split (%)	43.6%	43.6%	43.6%	38.2%	38.2%	38.2%	18%
Maximum Green (s)	43.0	43.0	43.0	37.0	37.0	37.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	5.0	3.0	3.0	3.0	3.0	
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	C-Max	C-Max	C-Max	Max	Max	Max	Ped
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0	36.0	30.0	30.0	30.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	45.0	43.0	45.0	39.0	39.0	39.0	
Actuated g/C Ratio	0.41	0.39	0.41	0.35	0.35	0.35	
v/c Ratio	0.49	0.65	0.56	0.67	1.38	1.18	
Control Delay	25.7	34.1	29.5	19.9	204.2	119.3	
Queue Delay	0.8	0.0	0.0	11.0	0.0	0.1	
Total Delay	26.5	34.1	29.5	31.0	204.2	119.4	
LOS	C	C	C	C	F	F	
Approach Delay	29.4					135.6	
Approach LOS	C					F	
Queue Length 50th (ft)	169	209	170	245	~761	~605	
Queue Length 95th (ft)	223	317	262	338	#1005	#839	
Internal Link Dist (ft)	93					172	
Turn Bay Length (ft)							
Base Capacity (vph)	1272	562	574	602	564	580	
Starvation Cap Reductn	0	0	0	170	0	7	
Spillback Cap Reductn	349	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.68	0.65	0.56	0.94	1.38	1.20	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 82 (75%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 91.8		Intersection LOS: F	
Intersection Capacity Utilization 75.4%		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.

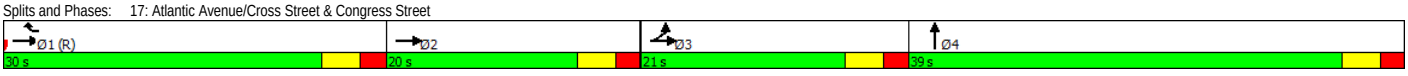
Splits and Phases: 16: Surface/Purchase/SASB & Ramp to I-93W-I-90S & Congress Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	454	518	0	0	0	371	0	772	73	0	0	0	
Future Volume (vph)	454	518	0	0	0	371	0	772	73	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	12	12	11	12	12	12	12	12	12	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.88	1.00	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor	0.53							0.96					
Frt						0.850		0.987					
Flt Protected	0.950												
Satd. Flow (prot)	2987	3079	0	0	0	2448	0	4287	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1582	3079	0	0	0	2448	0	4287	0	0	0	0	
Right Turn on Red	No		No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		233			288			612			240		
Travel Time (s)		6.4			7.9			16.7			6.5		
Confl. Peds. (#/hr)	593					593			1007				
Confl. Bikes (#/hr)						12			76				
Peak Hour Factor	0.99	0.99	0.99	0.98	0.98	0.98	0.95	0.95	0.95	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	0%	3%	6%	0%	0%	0%	
Adj. Flow (vph)	459	523	0	0	0	379	0	813	77	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	459	523	0	0	0	379	0	890	0	0	0	0	
Turn Type	Prot	NA				Prot		NA					
Protected Phases	3	1 2 3				1		4					2
Permitted Phases													
Detector Phase	3	1 2 3				1		4					
Switch Phase													
Minimum Initial (s)	8.0					8.0		8.0					8.0
Minimum Split (s)	13.0					30.0		39.0					20.0
Total Split (s)	21.0					30.0		39.0					20.0
Total Split (%)	19.1%					27.3%		35.5%					18%
Maximum Green (s)	16.0					25.0		34.0					15.0
Yellow Time (s)	3.0					3.0		3.0					3.0
All-Red Time (s)	2.0					2.0		2.0					2.0
Lost Time Adjust (s)	-1.0					-1.0		-2.0					
Total Lost Time (s)	4.0					4.0		3.0					
Lead/Lag	Lead					Lead		Lag					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0					2.0		2.0					2.0
Recall Mode	Max					C-Max		Max					Max
Walk Time (s)						7.0		7.0					7.0
Flash Dont Walk (s)						18.0		27.0					8.0
Pedestrian Calls (#/hr)						0		0					0
Act Effct Green (s)	17.0	67.0				26.0		36.0					
Actuated g/C Ratio	0.15	0.61				0.24		0.33					
v/c Ratio	1.00	0.28				0.66		0.63					
Control Delay	76.4	4.0				44.2		27.9					
Queue Delay	25.8	0.4				0.0		0.0					
Total Delay	102.2	4.4				44.2		27.9					
LOS	F	A				D		C					
Approach Delay		50.1			44.2			27.9					
Approach LOS		D			D			C					
Queue Length 50th (ft)	174	52				138		217					
Queue Length 95th (ft)	#281	48				196		263					
Internal Link Dist (ft)		153			208			532			160		
Turn Bay Length (ft)													
Base Capacity (vph)	461	1875				578		1403					
Starvation Cap Reductn	35	826				0		0					
Spillback Cap Reductn	0	0				0		0					
Storage Cap Reductn	0	0				0		0					
Reduced v/c Ratio	1.08	0.50				0.66		0.63					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 63 (57%), Referenced to phase 1:EBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.3		Intersection LOS: D	
Intersection Capacity Utilization 77.6%		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.			

Splits and Phases: 17: Atlantic Avenue/Cross Street & Congress Street

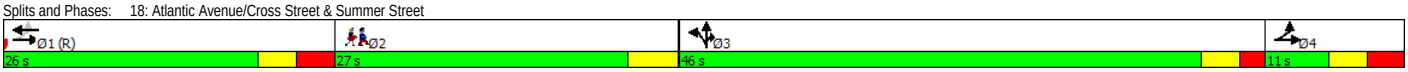


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	35	301	0	0	294	276	94	534	259	0	0	0	
Future Volume (vph)	35	301	0	0	294	276	94	534	259	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	
Ped Bike Factor					0.98								
Frt					0.927				0.850				
Flt Protected		0.995					0.950	0.999					
Satd. Flow (prot)	0	3194	0	0	3931	0	1464	2864	1454	0	0	0	
Flt Permitted		0.817					0.950	0.999					
Satd. Flow (perm)	0	2623	0	0	3931	0	1464	2864	1454	0	0	0	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		138			413			606			612		
Travel Time (s)		3.8			11.3			16.5			16.7		
Confl. Bikes (#/hr)						30			78				
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	1%	0%	0%	0%	1%	1%	5%	0%	0%	0%	0%	
Adj. Flow (vph)	36	314	0	0	297	279	98	556	270	0	0	0	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	0	350	0	0	576	0	88	566	270	0	0	0	
Turn Type	D.P+P	NA			NA		Split	NA	Prot				
Protected Phases	4	1 4			1		3	3	3				2
Permitted Phases	1												
Detector Phase	4	1 4			1		3	3	3				
Switch Phase													
Minimum Initial (s)	4.0				8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	10.0				26.0		46.0	46.0	46.0				27.0
Total Split (s)	11.0				26.0		46.0	46.0	46.0				27.0
Total Split (%)	10.0%				23.6%		41.8%	41.8%	41.8%				25%
Maximum Green (s)	5.0				20.0		41.0	41.0	41.0				23.0
Yellow Time (s)	3.0				3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	3.0				3.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)					-2.0		-1.0	-1.0	-1.0				
Total Lost Time (s)					4.0		4.0	4.0	4.0				
Lead/Lag	Lag				Lead		Lead	Lead	Lead				Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0				2.0		2.0	2.0	2.0				2.0
Recall Mode	Max				C-Max		Max	Max	Max				Ped
Walk Time (s)	0.0				7.0		7.0	7.0	7.0				8.0
Flash Dont Walk (s)	0.0				13.0		34.0	34.0	34.0				15.0
Pedestrian Calls (#/hr)	0				0		0	0	0				0
Act Effct Green (s)		29.0			22.0		42.0	42.0	42.0				
Actuated g/C Ratio		0.26			0.20		0.38	0.38	0.38				
v/c Ratio		0.48			1.04dr		0.16	0.52	0.49				
Control Delay		34.0			47.6		23.4	28.3	29.5				
Queue Delay		0.0			0.0		0.0	0.0	0.0				
Total Delay		34.0			47.6		23.4	28.3	29.5				
LOS		C			D		C	C	C				
Approach Delay		34.0			47.6			28.2					
Approach LOS		C			D			C					
Queue Length 50th (ft)		102			141		43	167	143				
Queue Length 95th (ft)		144			184		83	223	224				
Internal Link Dist (ft)		58			333			526			532		
Turn Bay Length (ft)													
Base Capacity (vph)		727			786		558	1093	555				
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		0.48			0.73		0.16	0.52	0.49				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 59 (54%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 35.3 Intersection LOS: D
Intersection Capacity Utilization 50.0% ICU Level of Service A
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 18: Atlantic Avenue/Cross Street & Summer Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø5
Lane Configurations					↑↑↑		
Traffic Volume (vph)	0	0	0	0	1359	0	
Future Volume (vph)	0	0	0	0	1359	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	0	0	5136	0	
Flt Permitted							
Satd. Flow (perm)	0	0	0	0	5136	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)							
Link Speed (mph)	25			25	25		
Link Distance (ft)	107			240	199		
Travel Time (s)	2.9			6.5	5.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97	
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	0	1401	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	0	1401	0	
Turn Type					NA		
Protected Phases					1		5
Permitted Phases							
Detector Phase					1		
Switch Phase							
Minimum Initial (s)					8.0		8.0
Minimum Split (s)					71.0		39.0
Total Split (s)					71.0		39.0
Total Split (%)					64.5%		35%
Maximum Green (s)					66.0		33.0
Yellow Time (s)					3.0		3.0
All-Red Time (s)					2.0		3.0
Lost Time Adjust (s)					-1.0		
Total Lost Time (s)					4.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)					2.0		2.0
Recall Mode					C-Max		Max
Walk Time (s)					7.0		7.0
Flash Dont Walk (s)					59.0		26.0
Pedestrian Calls (#/hr)					0		0
Act Effct Green (s)					67.0		
Actuated g/C Ratio					0.61		
v/c Ratio					0.45		
Control Delay					6.2		
Queue Delay					0.2		
Total Delay					6.4		
LOS					A		
Approach Delay					6.4		
Approach LOS					A		
Queue Length 50th (ft)					73		
Queue Length 95th (ft)					83		
Internal Link Dist (ft)	27			160	119		
Turn Bay Length (ft)							
Base Capacity (vph)					3128		
Starvation Cap Reductn					751		
Spillback Cap Reductn					0		
Storage Cap Reductn					0		
Reduced v/c Ratio					0.59		

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Surface/Purchase/SASB & S Market Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø5
Lane Configurations			↑↑				
Traffic Volume (vph)	0	0	1205	0	0	0	
Future Volume (vph)	0	0	1205	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00	
Frt							
Flt Protected							
Satd. Flow (prot)	0	0	3574	0	0	0	
Flt Permitted							
Satd. Flow (perm)	0	0	3574	0	0	0	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	111		264			262	
Travel Time (s)	3.0		7.2			7.1	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	
Adj. Flow (vph)	0	0	1242	0	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	1242	0	0	0	
Turn Type			NA				
Protected Phases			1				5
Permitted Phases							
Detector Phase			1				
Switch Phase							
Minimum Initial (s)			8.0				8.0
Minimum Split (s)			75.0				35.0
Total Split (s)			75.0				35.0
Total Split (%)			68.2%				32%
Maximum Green (s)			70.0				30.0
Yellow Time (s)			3.0				3.0
All-Red Time (s)			2.0				2.0
Lost Time Adjust (s)			-1.0				
Total Lost Time (s)			4.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			2.0				2.0
Recall Mode			C-Max				Max
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			63.0				23.0
Pedestrian Calls (#/hr)			0				0
Act Effct Green (s)			71.0				
Actuated g/C Ratio			0.65				
v/c Ratio			0.54				
Control Delay			2.8				
Queue Delay			0.3				
Total Delay			3.1				
LOS			A				
Approach Delay			3.1				
Approach LOS			A				
Queue Length 50th (ft)			33				
Queue Length 95th (ft)			55				
Internal Link Dist (ft)	31		184			182	
Turn Bay Length (ft)							
Base Capacity (vph)			2306				
Starvation Cap Reductn			419				
Spillback Cap Reductn			136				
Storage Cap Reductn			0				
Reduced v/c Ratio			0.66				

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 44 (40%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 3.1		Intersection LOS: A	
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: Atlantic Avenue/Cross Street & Christopher Columbus Path

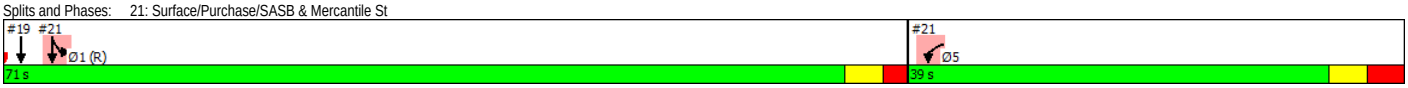
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	249	0	0	0	228	1110
Future Volume (vph)	249	0	0	0	228	1110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor	0.98					0.99
Frt						
Flt Protected	0.950					0.992
Satd. Flow (prot)	2958	0	0	0	0	4577
Flt Permitted	0.950					0.992
Satd. Flow (perm)	2899	0	0	0	0	4543
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	25		25			25
Link Distance (ft)	195		199			185
Travel Time (s)	5.3		5.4			5.0
Confl. Peds. (#/hr)	20				88	
Peak Hour Factor	0.95	0.95	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	0%	2%	1%
Adj. Flow (vph)	262	0	0	0	233	1133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	0	0	0	0	1366
Turn Type	Prot				Split	NA
Protected Phases	5				1	1
Permitted Phases						
Detector Phase	5				1	1
Switch Phase						
Minimum Initial (s)	8.0				8.0	8.0
Minimum Split (s)	39.0				71.0	71.0
Total Split (s)	39.0				71.0	71.0
Total Split (%)	35.5%				64.5%	64.5%
Maximum Green (s)	33.0				66.0	66.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	3.0				2.0	2.0
Lost Time Adjust (s)	-1.0					-1.0
Total Lost Time (s)	5.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0				2.0	2.0
Recall Mode	Max				C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	26.0				59.0	59.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	34.0					67.0
Actuated g/C Ratio	0.31					0.61
v/c Ratio	0.29					0.49
Control Delay	9.1					13.1
Queue Delay	8.8					0.8
Total Delay	17.9					13.9
LOS	B					B
Approach Delay	17.9					13.9
Approach LOS	B					B
Queue Length 50th (ft)	54					159
Queue Length 95th (ft)	m60					201
Internal Link Dist (ft)	115		119			105
Turn Bay Length (ft)						
Base Capacity (vph)	914					2787
Starvation Cap Reductn	607					997
Spillback Cap Reductn	0					377
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.85					0.76

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 21: Surface/Purchase/SASB & Mercantile St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	33	234	0	0	228	48	21	725	456	0	0	0	
Future Volume (vph)	33	234	0	0	228	48	21	725	456	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00								
Frt					0.976				0.850				
Flt Protected		0.994						0.999					
Satd. Flow (prot)	0	3095	0	0	1592	0	0	3184	1454	0	0	0	
Flt Permitted		0.741						0.999					
Satd. Flow (perm)	0	2307	0	0	1592	0	0	3184	1454	0	0	0	
Right Turn on Red			Yes			Yes			No			Yes	
Satd. Flow (RTOR)					9								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		195			457			262			193		
Travel Time (s)		5.3			12.5			7.1			5.3		
Confl. Bikes (#/hr)						16			77				
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	35	249	0	0	245	52	22	747	470	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	284	0	0	297	0	0	769	470	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA	Prot				
Protected Phases		5			5			1	1				2
Permitted Phases	5						1						
Detector Phase	5	5			5		1	1	1				
Switch Phase													
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0	8.0				8.0
Minimum Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (s)	28.0	28.0			28.0		60.0	60.0	60.0				22.0
Total Split (%)	25.5%	25.5%			25.5%		54.5%	54.5%	54.5%				20%
Maximum Green (s)	23.0	23.0			23.0		55.0	55.0	55.0				18.0
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0				4.0
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0				0.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0				
Total Lost Time (s)		4.0			4.0			4.0	4.0				
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	Max	Max			Max		C-Max	C-Max	C-Max				Ped
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0				7.0
Flash Dont Walk (s)	16.0	16.0			16.0		48.0	48.0	48.0				11.0
Pedestrian Calls (#/hr)	0	0			0		0	0	0				0
Act Effct Green (s)		24.0			24.0			56.0	56.0				
Actuated g/C Ratio		0.22			0.22			0.51	0.51				
v/c Ratio		0.56			0.84			0.47	0.64				
Control Delay		43.0			61.5			9.3	15.6				
Queue Delay		12.2			3.7			1.3	3.8				
Total Delay		55.2			65.2			10.7	19.4				
LOS		E			E			B	B				
Approach Delay		55.2			65.2			14.0					
Approach LOS		E			E			B					
Queue Length 50th (ft)		111			196			142	247				
Queue Length 95th (ft)		157			#344			182	389				
Internal Link Dist (ft)		115			377			182			113		
Turn Bay Length (ft)													
Base Capacity (vph)		503			354			1620	740				
Starvation Cap Reductn		192			0			605	186				
Spillback Cap Reductn		0			21			0	0				
Storage Cap Reductn		0			0			0	0				
Reduced v/c Ratio		0.91			0.89			0.76	0.85				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 79 (72%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 28.8		Intersection LOS: C	
Intersection Capacity Utilization 57.8%		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: 22: Atlantic Avenue/Cross Street & Mercantile St/Atlantic Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	547	137	0	0	0	0	0	820	96	
Future Volume (vph)	0	0	0	547	137	0	0	0	0	0	820	96	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	14	16	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											0.99		
Frt											0.984		
Flt Protected				0.950	0.973								
Satd. Flow (prot)	0	0	0	1630	1758	0	0	0	0	0	4507	0	
Flt Permitted				0.950	0.973								
Satd. Flow (perm)	0	0	0	1630	1758	0	0	0	0	0	4507	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											21		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		277			118			185			455		
Travel Time (s)		7.6			3.2			5.0			12.4		
Confl. Bikes (#/hr)												56	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.99	0.99	0.99	
Heavy Vehicles (%)	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	1%	2%	
Adj. Flow (vph)	0	0	0	576	144	0	0	0	0	0	828	97	
Shared Lane Traffic (%)				30%									
Lane Group Flow (vph)	0	0	0	403	317	0	0	0	0	0	925	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				42.0	42.0						44.0		24.0
Total Split (s)				42.0	42.0						44.0		24.0
Total Split (%)				38.2%	38.2%						40.0%		22%
Maximum Green (s)				37.0	37.0						38.0		20.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				30.0	30.0						31.0		13.0
Pedestrian Calls (#/hr)				0	0						0		0
Act Effct Green (s)				39.0	39.0						40.0		
Actuated g/C Ratio				0.35	0.35						0.36		
v/c Ratio				0.70	0.51						0.56		
Control Delay				38.1	31.5						27.8		
Queue Delay				59.1	55.5						0.0		
Total Delay				97.2	87.0						27.8		
LOS				F	F						C		
Approach Delay					92.7						27.8		
Approach LOS					F						C		
Queue Length 50th (ft)				254	184						175		
Queue Length 95th (ft)				375	275						218		
Internal Link Dist (ft)		197			38			105			375		
Turn Bay Length (ft)													
Base Capacity (vph)				577	623						1652		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				308	332						20		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				1.50	1.09						0.57		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 1 (1%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 56.2		Intersection LOS: E	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Surface/Purchase/SASB & Clinton Street/I-93 SB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	23	804	0	0	0
Future Volume (vph)	0	23	804	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1509	3185	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1509	3185	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		239				
Link Speed (mph)	25		25			25
Link Distance (ft)	559		193			493
Travel Time (s)	15.2		5.3			13.4
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Growth Factor	100%	100%	100%	50%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Parking (#/hr)	0	0				
Adj. Flow (vph)	0	25	846	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	846	0	0	0
Turn Type		Prot	NA			
Protected Phases		5	1			
Permitted Phases						
Detector Phase		5	1			
Switch Phase						
Minimum Initial (s)		8.0	8.0			
Minimum Split (s)		25.0	85.0			
Total Split (s)		25.0	85.0			
Total Split (%)		22.7%	77.3%			
Maximum Green (s)		21.0	80.0			
Yellow Time (s)		3.0	3.0			
All-Red Time (s)		1.0	2.0			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		2.0	2.0			
Recall Mode		Max	C-Max			
Walk Time (s)		7.0	7.0			
Flash Dont Walk (s)		14.0	73.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		21.0	80.0			
Actuated g/C Ratio		0.19	0.73			
v/c Ratio		0.05	0.37			
Control Delay		0.2	0.6			
Queue Delay		0.0	0.1			
Total Delay		0.2	0.7			
LOS		A	A			
Approach Delay	0.2		0.7			
Approach LOS	A		A			
Queue Length 50th (ft)		0	1			
Queue Length 95th (ft)		0	1			
Internal Link Dist (ft)	479		113			413
Turn Bay Length (ft)						
Base Capacity (vph)		481	2316			
Starvation Cap Reductn		0	510			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.05	0.47			

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 62 (56%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 0.7		Intersection LOS: A	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			

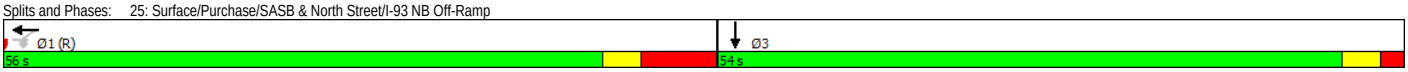
Splits and Phases: 24: Atlantic Avenue/Cross Street & Commercial Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	142	200	151	0	0	0	0	0	567	88
Future Volume (vph)	0	0	142	200	151	0	0	0	0	0	567	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											0.97	
Frt			0.865								0.980	
Flt Protected					0.972							
Satd. Flow (prot)	0	0	1465	0	3113	0	0	0	0	0	3043	0
Flt Permitted					0.972							
Satd. Flow (perm)	0	0	1465	0	3113	0	0	0	0	0	3043	0
Right Turn on Red			No	No		Yes			Yes			Yes
Satd. Flow (RTOR)											21	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			177			455			423	
Travel Time (s)		3.5			4.8			12.4			11.5	
Confl. Peds. (#/hr)												251
Confl. Bikes (#/hr)												53
Peak Hour Factor	0.94	0.94	0.94	0.99	0.99	0.99	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	1%	2%	0%	0%	0%	0%	0%	2%	1%
Parking (#/hr)												0
Adj. Flow (vph)	0	0	151	202	153	0	0	0	0	0	597	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	151	0	355	0	0	0	0	0	690	0
Turn Type			Perm	Perm	NA						NA	
Protected Phases					1						3	
Permitted Phases			1	1								
Detector Phase			1	1	1						3	
Switch Phase												
Minimum Initial (s)			10.0	10.0	10.0						10.0	
Minimum Split (s)			56.0	56.0	56.0						54.0	
Total Split (s)			56.0	56.0	56.0						54.0	
Total Split (%)			50.9%	50.9%	50.9%						49.1%	
Maximum Green (s)			47.0	47.0	47.0						49.0	
Yellow Time (s)			3.0	3.0	3.0						3.0	
All-Red Time (s)			6.0	6.0	6.0						2.0	
Lost Time Adjust (s)			-5.0		-5.0						-1.0	
Total Lost Time (s)			4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			2.0	2.0	2.0						2.0	
Recall Mode			C-Max	C-Max	C-Max						Max	
Walk Time (s)			7.0	7.0	7.0						7.0	
Flash Dont Walk (s)			40.0	40.0	40.0						42.0	
Pedestrian Calls (#/hr)			0	0	0						0	
Act Effct Green (s)			52.0		52.0						50.0	
Actuated g/C Ratio			0.47		0.47						0.45	
v/c Ratio			0.22		0.24						0.49	
Control Delay			18.1		17.8						21.9	
Queue Delay			0.0		0.0						0.0	
Total Delay			18.1		17.8						21.9	
LOS			B		B						C	
Approach Delay		18.1			17.8						21.9	
Approach LOS		B			B						C	
Queue Length 50th (ft)			61		76						170	
Queue Length 95th (ft)			104		107						223	
Internal Link Dist (ft)		47			97			375			343	
Turn Bay Length (ft)												
Base Capacity (vph)			692		1471						1394	
Starvation Cap Reductn			0		0						0	
Spillback Cap Reductn			0		0						0	
Storage Cap Reductn			0		0						0	
Reduced v/c Ratio			0.22		0.24						0.49	

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 25: Surface/Purchase/SASB & North Street/I-93 NB Off-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	252	44	0	0	0	0	0	817	16	0	0	0	
Future Volume (vph)	252	44	0	0	0	0	0	817	16	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt								0.997					
Flt Protected	0.950	0.966											
Satd. Flow (prot)	1484	1526	0	0	0	0	0	3171	0	0	0	0	
Flt Permitted	0.950	0.966											
Satd. Flow (perm)	1484	1526	0	0	0	0	0	3171	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								2					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		169			386			493			376		
Travel Time (s)		4.6			10.5			13.4			10.3		
Confl. Bikes (#/hr)									82				
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	
Adj. Flow (vph)	260	45	0	0	0	0	0	834	16	0	0	0	
Shared Lane Traffic (%)	42%												
Lane Group Flow (vph)	151	154	0	0	0	0	0	850	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	1	1						5					2
Permitted Phases													
Detector Phase	1	1						5					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	15.0	15.0						14.0					18.0
Total Split (s)	43.0	43.0						49.0					18.0
Total Split (%)	39.1%	39.1%						44.5%					16%
Maximum Green (s)	38.0	38.0						44.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag	Lead	Lead											Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	C-Max	C-Max						Max					Ped
Walk Time (s)													7.0
Flash Dont Walk (s)													7.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	39.0	39.0						45.0					
Actuated g/C Ratio	0.35	0.35						0.41					
v/c Ratio	0.29	0.28						0.65					
Control Delay	27.4	27.3						8.8					
Queue Delay	0.0	0.0						0.2					
Total Delay	27.4	27.3						9.0					
LOS	C	C						A					
Approach Delay		27.3						9.0					
Approach LOS		C						A					
Queue Length 50th (ft)	80	81						61					
Queue Length 95th (ft)	135	137						68					
Internal Link Dist (ft)		89			306			413			296		
Turn Bay Length (ft)													
Base Capacity (vph)	526	541						1298					
Starvation Cap Reductn	0	0						69					
Spillback Cap Reductn	0	0						11					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.29	0.28						0.69					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 25 (23%), Referenced to phase 1:EBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: Atlantic Avenue/Cross Street & I-93 Off-Ramp/North Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	87	0	0	153	69	107	940	21	0	0	0
Future Volume (vph)	32	87	0	0	153	69	107	940	21	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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.75				0.87			0.98				
Frt					0.958			0.997				
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1624	1693	0	0	1409	0	0	3123	0	0	0	0
Flt Permitted	0.447							0.995				
Satd. Flow (perm)	570	1693	0	0	1409	0	0	3072	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			4				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			265			376			181	
Travel Time (s)		4.3			7.2			10.3			4.9	
Confl. Peds. (#/hr)	748					748	212		289			
Confl. Bikes (#/hr)						6			80			
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	3%	0%	0%	0%	0%
Parking (#/hr)									0			
Adj. Flow (vph)	33	90	0	0	163	73	109	959	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	90	0	0	236	0	0	1089	0	0	0	0
Turn Type	Perm	NA			NA		Split	NA				
Protected Phases		5			5		1	1				
Permitted Phases	5											
Detector Phase	5	5			5		1	1				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (s)	34.0	34.0			34.0		76.0	76.0				
Total Split (%)	30.9%	30.9%			30.9%		69.1%	69.1%				
Maximum Green (s)	29.0	29.0			29.0		71.0	71.0				
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)	-1.0	-1.0			-1.0			-1.0				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0				
Recall Mode	Max	Max			Max		C-Max	C-Max				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	22.0	22.0			22.0		64.0	64.0				
Pedestrian Calls (#/hr)	50	50			50		0	0				
Act Effct Green (s)	30.0	30.0			30.0			72.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.65				
v/c Ratio	0.21	0.20			0.59			0.53				
Control Delay	35.3	32.1			38.8			2.3				
Queue Delay	0.0	0.0			0.0			0.6				
Total Delay	35.3	32.1			38.8			2.8				
LOS	D	C			D			A				
Approach Delay		33.0			38.8			2.8				
Approach LOS		C			D			A				
Queue Length 50th (ft)	18	49			132			8				
Queue Length 95th (ft)	46	92			218			10				
Internal Link Dist (ft)		77			185			296			101	
Turn Bay Length (ft)												
Base Capacity (vph)	155	461			398			2045				
Starvation Cap Reductn	0	0			0			520				
Spillback Cap Reductn	0	0			1			318				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.21	0.20			0.59			0.71				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 98 (89%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

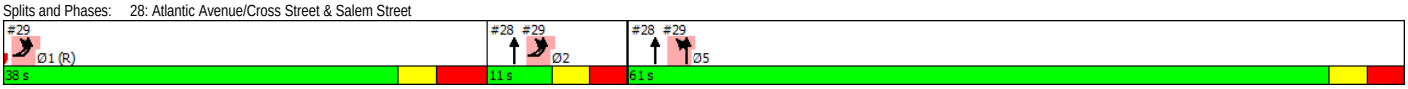
Splits and Phases: 27: Atlantic Avenue/Cross Street & Hanover Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2	Ø5
Lane Configurations									
Traffic Volume (vph)	0	0	1002	40	0	0			
Future Volume (vph)	0	0	1002	40	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Ped Bike Factor			0.99						
Frt			0.994						
Flt Protected									
Satd. Flow (prot)	0	0	3454	0	0	0			
Flt Permitted									
Satd. Flow (perm)	0	0	3454	0	0	0			
Right Turn on Red		Yes		Yes					
Satd. Flow (RTOR)			6						
Link Speed (mph)	25		25			25			
Link Distance (ft)	221		181			194			
Travel Time (s)	6.0		4.9			5.3			
Confl. Peds. (#/hr)				239					
Confl. Bikes (#/hr)				81					
Peak Hour Factor	0.92	0.92	0.99	0.99	0.92	0.92			
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%			
Adj. Flow (vph)	0	0	1012	40	0	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	1052	0	0	0			
Turn Type			NA						
Protected Phases			2 5				1	2	5
Permitted Phases									
Detector Phase			2 5						
Switch Phase									
Minimum Initial (s)							10.0	4.0	10.0
Minimum Split (s)							38.0	11.0	61.0
Total Split (s)							38.0	11.0	61.0
Total Split (%)							35%	10%	55%
Maximum Green (s)							31.0	5.0	55.0
Yellow Time (s)							3.0	3.0	3.0
All-Red Time (s)							4.0	3.0	3.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag							Lead	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)							2.0	2.0	2.0
Recall Mode							C-Max	Max	Max
Walk Time (s)							7.0		7.0
Flash Dont Walk (s)							24.0		48.0
Pedestrian Calls (#/hr)							0		30
Act Effct Green (s)			66.0						
Actuated g/C Ratio			0.60						
v/c Ratio			0.51						
Control Delay			9.8						
Queue Delay			0.4						
Total Delay			10.2						
LOS			B						
Approach Delay			10.2						
Approach LOS			B						
Queue Length 50th (ft)			303						
Queue Length 95th (ft)			305						
Internal Link Dist (ft)	141		101			114			
Turn Bay Length (ft)									
Base Capacity (vph)			2074						
Starvation Cap Reductn			458						
Spillback Cap Reductn			191						
Storage Cap Reductn			0						
Reduced v/c Ratio			0.65						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 34.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Atlantic Avenue/Cross Street & Salem Street

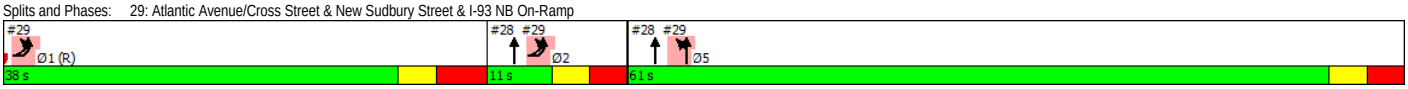


Lane Group	EBL2	EBL	EBR	NBL	NBT	SBT	SBR	SEL	SER	Ø1	Ø2
Lane Configurations											
Traffic Volume (vph)	443	254	0	425	575	0	0	0	0		
Future Volume (vph)	443	254	0	425	575	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	13	12	11	11	12	12	12	12		
Lane Util. Factor	0.95	0.97	1.00	0.95	0.95	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00									
Frt											
Flt Protected		0.950			0.979						
Satd. Flow (prot)	0	3583	0	0	3303	0	0	0	0		
Flt Permitted		0.950			0.979						
Satd. Flow (perm)	0	3570	0	0	3303	0	0	0	0		
Right Turn on Red	No		Yes								
Satd. Flow (RTOR)											
Link Speed (mph)		25			25	25		25			
Link Distance (ft)		112			194	254		234			
Travel Time (s)		3.1			5.3	6.9		6.4			
Confl. Peds. (#/hr)		2									
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	1%	1%	0%	4%	3%	0%	0%	0%	0%		
Adj. Flow (vph)	452	259	0	434	587	0	0	0	0		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	711	0	0	1021	0	0	0	0		
Turn Type	Prot	Prot		Split	NA						
Protected Phases	1 2	1 2		5	5					1	2
Permitted Phases											
Detector Phase	1 2	1 2		5	5						
Switch Phase											
Minimum Initial (s)				10.0	10.0					10.0	4.0
Minimum Split (s)				61.0	61.0					38.0	11.0
Total Split (s)				61.0	61.0					38.0	11.0
Total Split (%)				55.5%	55.5%					35%	10%
Maximum Green (s)				55.0	55.0					31.0	5.0
Yellow Time (s)				3.0	3.0					3.0	3.0
All-Red Time (s)				3.0	3.0					4.0	3.0
Lost Time Adjust (s)					-1.0						
Total Lost Time (s)					5.0						
Lead/Lag										Lead	Lag
Lead-Lag Optimize?											
Vehicle Extension (s)				2.0	2.0					2.0	2.0
Recall Mode				Max	Max					C-Max	Max
Walk Time (s)				7.0	7.0					7.0	
Flash Dont Walk (s)				48.0	48.0					24.0	
Pedestrian Calls (#/hr)				30	30					0	
Act Effct Green (s)		43.0			56.0						
Actuated g/C Ratio		0.39			0.51						
v/c Ratio		0.51			0.61						
Control Delay		27.0			6.5						
Queue Delay		0.0			0.0						
Total Delay		27.0			6.5						
LOS		C			A						
Approach Delay		27.0			6.5						
Approach LOS		C			A						
Queue Length 50th (ft)		193			311						
Queue Length 95th (ft)		249			28						
Internal Link Dist (ft)		32			114	174		154			
Turn Bay Length (ft)											
Base Capacity (vph)		1400			1681						
Starvation Cap Reductn		0			0						
Spillback Cap Reductn		0			0						
Storage Cap Reductn		0			0						
Reduced v/c Ratio		0.51			0.61						

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 1:EBL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

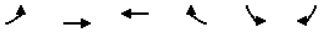
Splits and Phases: 29: Atlantic Avenue/Cross Street & New Sudbury Street & I-93 NB On-Ramp



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1136	109	0	0
Future Volume (Veh/h)	0	0	1136	109	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1235	118	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			162			132
pX, platoon unblocked	0.86	0.86			0.86	
vC, conflicting volume	1294	676			1353	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1016	298			1085	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	204	605			559	

Direction, Lane #	WB 1	NB 1	NB 2
Volume Total	0	823	530
Volume Left	0	0	0
Volume Right	0	0	118
cSH	1700	1700	1700
Volume to Capacity	0.00	0.48	0.31
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		38.2%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	23	27	2	0	357
Future Volume (Veh/h)	28	23	27	2	0	357
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.63	0.63	0.70	0.70
Hourly flow rate (vph)	33	27	43	3	0	510
Pedestrians		29	17		204	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		2	1		17	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		179				
pX, platoon unblocked						
vC, conflicting volume	250				358	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	250				358	278
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				100	18
cM capacity (veh/h)	1102				511	621

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	60	46	510
Volume Left	33	0	0
Volume Right	0	3	510
cSH	1102	1700	621
Volume to Capacity	0.03	0.03	0.82
Queue Length 95th (ft)	2	0	214
Control Delay (s)	4.7	0.0	32.0
Lane LOS	A		D
Approach Delay (s)	4.7	0.0	32.0
Approach LOS			D

Intersection Summary				
Average Delay			26.9	
Intersection Capacity Utilization			44.7%	ICU Level of Service A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	29	1279	0	0	0
Future Volume (Veh/h)	0	29	1279	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.83	0.83	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	35	1332	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			151			183
pX, platoon unblocked	0.68	0.68			0.68	
vC, conflicting volume	1332	666			1332	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	548	0			548	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	320	742			702	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	18	18	666	666
Volume Left	0	0	0	0
Volume Right	18	18	0	0
cSH	742	742	1700	1700
Volume to Capacity	0.02	0.02	0.39	0.39
Queue Length 95th (ft)	2	2	0	0
Control Delay (s)	10.0	10.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	10.0		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay			0.3	
Intersection Capacity Utilization			45.4%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	25	59	4	4
Future Volume (Veh/h)	0	0	25	59	4	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	0	0	26	62	5	5
Pedestrians	128					
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)				460		
pX, platoon unblocked						
vC, conflicting volume	250	136	138			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	250	136	138			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	730	919	1446			

Direction, Lane #	NB 1	SB 1
Volume Total	88	10
Volume Left	26	0
Volume Right	0	5
cSH	1446	1700
Volume to Capacity	0.02	0.01
Queue Length 95th (ft)	1	0
Control Delay (s)	2.3	0.0
Lane LOS	A	
Approach Delay (s)	2.3	0.0
Approach LOS		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	16.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	6	2	133	12	47
Future Volume (Veh/h)	30	6	2	133	12	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.87	0.87	0.83	0.83
Hourly flow rate (vph)	34	7	2	153	14	57
Pedestrians	140			275	347	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	12			23	29	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	290					
pX, platoon unblocked						
vC, conflicting volume			388		682	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			388		682	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	78
cM capacity (veh/h)			840		259	256

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	41	155	71
Volume Left	0	2	14
Volume Right	7	0	57
cSH	1700	840	257
Volume to Capacity	0.02	0.00	0.28
Queue Length 95th (ft)	0	0	27
Control Delay (s)	0.0	0.1	24.3
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	24.3
Approach LOS			C

Intersection Summary					
Average Delay			6.6		
Intersection Capacity Utilization			33.3%	ICU Level of Service	A
Analysis Period (min)			15		

- Build (2026) Condition with Mitigation

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	110	26	0	0	0	0	0	797	39	0	0	0	
Future Volume (vph)	110	26	0	0	0	0	0	797	39	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt								0.993					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3081	0	0	0	0	0	2997	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3081	0	0	0	0	0	2997	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			309			127			151		
Travel Time (s)		4.4			8.4			3.5			4.1		
Confl. Bikes (#/hr)									64				
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.97	0.97	0.97	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	118	28	0	0	0	0	0	822	40	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	118	28	0	0	0	0	0	862	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	5	5						1					2
Permitted Phases													
Detector Phase	5	5						1					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	27.0	27.0						51.0					18.0
Total Split (s)	31.0	31.0						61.0					18.0
Total Split (%)	28.2%	28.2%						55.5%					16%
Maximum Green (s)	26.0	26.0						56.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	Max	Max						C-Max					Ped
Walk Time (s)	7.0	7.0						7.0					7.0
Flash Dont Walk (s)	15.0	15.0						39.0					7.0
Pedestrian Calls (#/hr)	0	0						0					0
Act Effct Green (s)	27.0	27.0						57.0					
Actuated g/C Ratio	0.25	0.25						0.52					
v/c Ratio	0.33	0.04						0.55					
Control Delay	32.2	27.5						9.0					
Queue Delay	18.9	0.0						0.7					
Total Delay	51.0	27.5						9.7					
LOS	D	C						A					
Approach Delay		46.5						9.7					
Approach LOS		D						A					
Queue Length 50th (ft)	58	6						93					
Queue Length 95th (ft)	92	15						93					
Internal Link Dist (ft)		81			229			47			71		
Turn Bay Length (ft)													
Base Capacity (vph)	359	756						1556					
Starvation Cap Reductn	223	0						357					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.87	0.04						0.72					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 89 (81%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	58	69	145	1059	35	0	0	0
Future Volume (vph)	0	0	0	0	58	69	145	1059	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.93			0.98				
Frt					0.927			0.996				
Flt Protected								0.994				
Satd. Flow (prot)	0	0	0	0	1372	0	0	3150	0	0	0	0
Flt Permitted								0.994				
Satd. Flow (perm)	0	0	0	0	1372	0	0	3144	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					11			7				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			167	
Travel Time (s)		4.7			4.9			15.5			4.6	
Confl. Peds. (#/hr)						71	42		703			
Confl. Bikes (#/hr)						1			65			
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	72	85	149	1092	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	157	0	0	1277	0	0	0	0
Turn Type					NA		Split	NA				
Protected Phases					5		1	1				
Permitted Phases												
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					24.0		86.0	86.0				
Total Split (s)					24.0		86.0	86.0				
Total Split (%)					21.8%		78.2%	78.2%				
Maximum Green (s)					19.0		81.0	81.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					12.0		74.0	74.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					20.0			82.0				
Actuated g/C Ratio					0.18			0.75				
v/c Ratio					0.61			0.54				
Control Delay					49.5			12.3				
Queue Delay					0.9			0.6				
Total Delay					50.4			12.9				
LOS					D			B				
Approach Delay					50.4			12.9				
Approach LOS					D			B				
Queue Length 50th (ft)					96			314				
Queue Length 95th (ft)					147			101				
Internal Link Dist (ft)		91			99			490			87	
Turn Bay Length (ft)												
Base Capacity (vph)					258			2349				
Starvation Cap Reductn					0			636				
Spillback Cap Reductn					17			2				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.65			0.75				

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 86 (78%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 17.0		Intersection LOS: B	
Intersection Capacity Utilization 100.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	111	92	0	0	0	0	0	602	62	
Future Volume (vph)	0	0	0	111	92	0	0	0	0	0	602	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.986		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3120	1637	0	0	0	0	0	4346	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3120	1637	0	0	0	0	0	4346	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											24		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												38	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	6%	0%	
Adj. Flow (vph)	0	0	0	119	99	0	0	0	0	0	627	65	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	119	99	0	0	0	0	0	692	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				27.0	27.0						62.0		21.0
Total Split (s)				27.0	27.0						62.0		21.0
Total Split (%)				24.5%	24.5%						56.4%		19%
Maximum Green (s)				22.0	22.0						56.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				15.0	15.0						49.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				24.0	24.0						58.0		
Actuated g/C Ratio				0.22	0.22						0.53		
v/c Ratio				0.17	0.28						0.30		
Control Delay				30.5	32.8						2.0		
Queue Delay				2.3	11.8						0.2		
Total Delay				32.8	44.6						2.2		
LOS				C	D						A		
Approach Delay					38.1						2.2		
Approach LOS					D						A		
Queue Length 50th (ft)				32	54						5		
Queue Length 95th (ft)				m58	m99						8		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				680	357						2302		
Starvation Cap Reductn				450	228						717		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.52	0.77						0.44		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 107.8%		ICU Level of Service G	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	196	34	0	0	0	0	0	1087	48	0	0	0	
Future Volume (vph)	196	34	0	0	0	0	0	1087	48	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	16	12	12	12	12	12	12	
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor								1.00					
Frt								0.994					
Flt Protected	0.950												
Satd. Flow (prot)	1464	3112	0	0	0	0	0	3027	0	0	0	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1464	3112	0	0	0	0	0	3027	0	0	0	0	
Right Turn on Red	No		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)								6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		161			309			132			151		
Travel Time (s)		4.4			8.4			3.6			4.1		
Confl. Bikes (#/hr)						1			76				
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.96	0.96	0.96	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	
Parking (#/hr)								0	0				
Adj. Flow (vph)	204	35	0	0	0	0	0	1132	50	0	0	0	
Shared Lane Traffic (%)	0%												
Lane Group Flow (vph)	204	35	0	0	0	0	0	1182	0	0	0	0	
Turn Type	Split	NA						NA					
Protected Phases	5	5						1					2
Permitted Phases													
Detector Phase	5	5						1					
Switch Phase													
Minimum Initial (s)	8.0	8.0						8.0					8.0
Minimum Split (s)	20.0	20.0						58.0					18.0
Total Split (s)	31.0	31.0						61.0					18.0
Total Split (%)	28.2%	28.2%						55.5%					16%
Maximum Green (s)	26.0	26.0						56.0					14.0
Yellow Time (s)	3.0	3.0						3.0					4.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)	-1.0	-1.0						-1.0					
Total Lost Time (s)	4.0	4.0						4.0					
Lead/Lag								Lead					Lag
Lead-Lag Optimize?													
Vehicle Extension (s)	2.0	2.0						2.0					2.0
Recall Mode	Max	Max						C-Max					Ped
Walk Time (s)	7.0	7.0						7.0					7.0
Flash Dont Walk (s)	8.0	8.0						46.0					7.0
Pedestrian Calls (#/hr)	0	0						0					0
Act Effct Green (s)	27.0	27.0						57.0					
Actuated g/C Ratio	0.25	0.25						0.52					
v/c Ratio	0.57	0.05						0.75					
Control Delay	34.6	22.1						17.7					
Queue Delay	11.2	0.0						1.4					
Total Delay	45.8	22.1						19.2					
LOS	D	C						B					
Approach Delay		42.3						19.2					
Approach LOS		D						B					
Queue Length 50th (ft)	150	5						201					
Queue Length 95th (ft)	236	m11						231					
Internal Link Dist (ft)		81			229			52			71		
Turn Bay Length (ft)													
Base Capacity (vph)	359	763						1571					
Starvation Cap Reductn	126	0						208					
Spillback Cap Reductn	0	0						0					
Storage Cap Reductn	0	0						0					
Reduced v/c Ratio	0.88	0.05						0.87					

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 1:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Atlantic Avenue/Cross Street & Milk Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	155	230	90	1015	51	0	0	0
Future Volume (vph)	0	0	0	0	155	230	90	1015	51	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	14	14	14	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.89			0.97				
Frt					0.919			0.993				
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	1299	0	0	3128	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	1299	0	0	3121	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)								6				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		171			179			570			162	
Travel Time (s)		4.7			4.9			15.5			4.4	
Confl. Peds. (#/hr)						100	47		1255			
Confl. Bikes (#/hr)						1			77			
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Parking (#/hr)								0	0			
Adj. Flow (vph)	0	0	0	0	185	274	93	1046	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	459	0	0	1192	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					5			1				
Permitted Phases							1					
Detector Phase					5		1	1				
Switch Phase												
Minimum Initial (s)					8.0		8.0	8.0				
Minimum Split (s)					23.0		60.0	60.0				
Total Split (s)					50.0		60.0	60.0				
Total Split (%)					45.5%		54.5%	54.5%				
Maximum Green (s)					45.0		55.0	55.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		2.0	2.0				
Lost Time Adjust (s)					-1.0			-1.0				
Total Lost Time (s)					4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					2.0		2.0	2.0				
Recall Mode					Max		C-Max	C-Max				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					11.0		48.0	48.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effct Green (s)					46.0			56.0				
Actuated g/C Ratio					0.42			0.51				
v/c Ratio					0.85			0.75				
Control Delay					45.0			21.8				
Queue Delay					0.8			1.0				
Total Delay					45.9			22.9				
LOS					D			C				
Approach Delay					45.9			22.9				
Approach LOS					D			C				
Queue Length 50th (ft)					286			197				
Queue Length 95th (ft)					#417			419				
Internal Link Dist (ft)		91			99			490			82	
Turn Bay Length (ft)												
Base Capacity (vph)					543			1591				
Starvation Cap Reductn					0			121				
Spillback Cap Reductn					12			182				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.86			0.85				

Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 14 (13%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 29.3 Intersection LOS: C
Intersection Capacity Utilization 98.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Atlantic Avenue/Cross Street & India Street/East India Row

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations													
Traffic Volume (vph)	0	0	0	211	33	0	0	0	0	0	1000	31	
Future Volume (vph)	0	0	0	211	33	0	0	0	0	0	1000	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	12	12	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	
Ped Bike Factor											1.00		
Frt											0.996		
Flt Protected				0.950									
Satd. Flow (prot)	0	0	0	3090	1605	0	0	0	0	0	4597	0	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	0	3090	1605	0	0	0	0	0	4597	0	
Right Turn on Red			Yes	No		Yes			Yes			Yes	
Satd. Flow (RTOR)											6		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		251			171			329			268		
Travel Time (s)		6.8			4.7			9.0			7.3		
Confl. Bikes (#/hr)												50	
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	1%	0%	
Adj. Flow (vph)	0	0	0	220	34	0	0	0	0	0	1111	34	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	220	34	0	0	0	0	0	1145	0	
Turn Type				Split	NA						NA		
Protected Phases				5	5						1		2
Permitted Phases													
Detector Phase				5	5						1		
Switch Phase													
Minimum Initial (s)				8.0	8.0						8.0		8.0
Minimum Split (s)				31.0	31.0						58.0		21.0
Total Split (s)				31.0	31.0						58.0		21.0
Total Split (%)				28.2%	28.2%						52.7%		19%
Maximum Green (s)				26.0	26.0						52.0		17.0
Yellow Time (s)				3.0	3.0						3.0		4.0
All-Red Time (s)				2.0	2.0						3.0		0.0
Lost Time Adjust (s)				-2.0	-2.0						-2.0		
Total Lost Time (s)				3.0	3.0						4.0		
Lead/Lag											Lead		Lag
Lead-Lag Optimize?													
Vehicle Extension (s)				2.0	2.0						2.0		2.0
Recall Mode				Max	Max						C-Max		Ped
Walk Time (s)				7.0	7.0						7.0		7.0
Flash Dont Walk (s)				19.0	19.0						45.0		10.0
Pedestrian Calls (#/hr)				50	50						0		5
Act Effct Green (s)				28.0	28.0						54.0		
Actuated g/C Ratio				0.25	0.25						0.49		
v/c Ratio				0.28	0.08						0.51		
Control Delay				28.5	29.3						6.6		
Queue Delay				6.5	1.9						0.1		
Total Delay				35.0	31.2						6.7		
LOS				C	C						A		
Approach Delay					34.5						6.7		
Approach LOS					C						A		
Queue Length 50th (ft)				44	13						42		
Queue Length 95th (ft)				m62	m19						48		
Internal Link Dist (ft)		171			91			249			188		
Turn Bay Length (ft)													
Base Capacity (vph)				786	408						2259		
Starvation Cap Reductn				507	295						218		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.79	0.30						0.56		

Intersection Summary

Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 106.4%		ICU Level of Service G	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Surface/Purchase/SASB & India Street

Appendix C

Climate Change Checklist

Boston Planning & Development Agency

Climate Resiliency Report Summary

Submitted: 01/21/2020 15:08:20

A.1 - Project Information

Project Name:	The Pinnacle at Central Wharf			
Project Address:	70 East India Row (a/k/a 270 Atlantic Avenue)			
Filing Type:	Initial (PNF, EPNF, NPC or other substantial filing)			
Filing Contact:	Steven G. Mitchell	The Chiofaro Company	smitchell@chiofaro.com	6173305250
Is MEPA approval required?	Yes	MEPA date:		

A.2 - Project Team

Owner / Developer:	RHDC 70 East India LLC c/o The Chiofaro Company
Architect:	Kohn Pedersen Fox Associates PC; Copley Wolff Design Group
Engineer:	Haley and Aldrich; McNamara Salvia; Nitsch Engineering
Sustainability / LEED:	Cosentini Associates
Permitting:	Epsilon Associates, Inc.
Construction Management:	TBD

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Office, Residential, Retail
List the First Floor Uses:	Building Entrances, Lobby, Loading Dock Entrances, Below Grade Parking Entrance, and Public Amenity
List any Critical Site Infrastructure and or Building Uses:	None

Site and Building:

Site Area (SF):	58000	Building Area (SF):	864600
Building Height (Ft):	600	Building Height (Stories):	42
Existing Site Elevation – Low (Ft BCB):	16.0	Existing Site Elevation – High (Ft BCB):	17.0
Proposed Site Elevation – Low (Ft BCB):	21.0	Proposed Site Elevation – High (Ft BCB):	21.0
Proposed First Floor Elevation (Ft BCB):	21.0	Below grade spaces/levels (#):	6

Article 37 Green Building:

LEED Version - Rating System:	LEED V4	LEED Certification:	

Boston Planning & Development Agency
Climate Resiliency Report Summary

Proposed LEED rating:	Gold	Proposed LEED point score (Pts.):	63

Building Envelope:

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	30	Exposed Floor :	30
Foundation Wall:	7.5	Slab Edge (at or below grade):	7.5

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	51	Wall & Spandrel Assembly Value:	0.155
Area of Framed & Insulated / Standard Wall:	0	Wall Value:	10
Area of Vision Window:	49	Window Glazing Assembly Value:	0.38
		Window Glazing SHGC:	0.27
Area of Doors:	<2%	Door Assembly Value :	0.77

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	A whole building energy model was developed in eQuest to determine the energy loads and performance.		
Annual Electric (kWh):	7331109	Peak Electric (kW):	2500
Annual Heating (MMbtu/hr):	16500	Peak Heating (MMbtu):	12
Annual Cooling (Tons/hr):	910000	Peak Cooling (Tons):	2200
Energy Use - Below ASHRAE 90.1 - 2013 (%):	29	Have the local utilities reviewed the building energy performance?:	No
Energy Use - Below Mass. Code (%):	26	Energy Use Intensity (kBtu/SF):	30

Back-up / Emergency Power System

Electrical Generation Output (kW):	2000	Number of Power Units:	1
System Type (kW):	Combustion	Fuel Source:	Fuel Oil

Emergency and Critical System Loads (in the event of a service interruption)

Electric (kW):	2000	Heating (MMbtu/hr):	8
		Cooling (Tons/hr):	350

B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing greenhouse gas emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon-neutrality by 2050 the performance of new buildings will need to progressively improve to carbon net zero and net positive.

B.1 – GHG Emissions - Design Conditions

For this filing - Annual Building GHG Emissions (Tons): 3460

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

"Shoebox" energy modeling and daylight simulation were applied by Kohn Pedersen Fox Associates PC ("KPF") during conceptual design. An energy goal setting meeting was organized involving the Proponent, KPF and Cosentini to identify MA 2020 code requirements and advanced EUI targets. Cosentini has integrated energy modeling along the design process, providing feedback on façade composition, shading and systems.

Describe building specific passive energy efficiency measures including orientation, massing, building envelop, and systems:

The Project will include a high-efficiency building envelope that combines high performance glazing for solar protection with highly insulated vertical piers, also integrating operable opening for natural ventilation on the residential section of the tower. Exterior shading fins are being explored as additional shading.

Describe building specific active energy efficiency measures including high performance equipment, controls, fixtures, and systems:

Ventilation heat recovery will be combined with high efficiency active chilled beams in the office floors, served by water-cooled chillers, water-side economizer and condensing boilers. In residential floors heating and cooling will be provided with high efficiency 4 pipe fan coils, served by same hot/cold supply. The proponent is studying the introduction of a network of open loop geothermal wells to serve part of heating and cooling loads in the residential section of the tower.

Central building controls will be provided for the central plants and sized to be expanded for use by tenants, including daylight harvesting and occupancy sensors. LED lighting will be utilized throughout the Project. Furthermore, the Proponent will continue to evaluate energy efficiency measures ("EEMs") for possible inclusion in select portions of the Proposed Project. The EEMs may include better glazing, increased insulation, lower lighting power densities, etc.

Describe building specific load reduction strategies including on-site renewable energy, clean energy, and storage systems:

The Proponent is studying the incorporation of solar PV in the roof tower.

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

The Proponent is studying the feasibility of incorporating a combined heat and power facility.

Describe any energy efficiency assistance or support provided or to be provided to the project:

The Proponent will work with local utilities and institutions such as Mass CEC and Mass DOER to determine potential incentive programs available and will continue to work with these organizations throughout the design process.

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

The Proponent will design and construct the Project to use HVAC systems with centralized space and domestic hot water heating sources that allow for an “electric ready” building, which could adapt to zero site emissions by 2035.

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low (Deg.):	0	Temperature Range - High (Deg.):	100
Annual Heating Degree Days:	5541	Annual Cooling Degree Days	2897

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90° (#):	9	Days - Above 100° (#):	5
Number of Heatwaves / Year (#):	3	Average Duration of Heatwave (Days):	3

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

At the street level, the Proponent aims to reduce the heat island effect using light-colored paving materials and integration of greenery, such as tree canopy cover and several landscape features along the streetscape and common open space which encompasses 50% of site area. Roof areas not dedicated to solar generation may be dedicated to vegetated roofs or high albedo cool roofs.

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

Incorporation of high albedo pavement materials and/or vegetated roofs will reduce heat island effect in project vicinity. Façade shading in the form of horizontal reveals will minimize solar gains, helping to maintain building spaces cool during heatwaves. Proponent's design team will run the HVAC load calculations to make sure that building systems can maintain safe indoor temperatures during heat wave conditions.

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

Exposed thermal mass in the façade and slab, combined with operable panels integrated in façade piers in the residential floors, will provide a passive survivability alternative to the cooling system in case of a power interruption in Summer. Similarly, a high-performance façade will allow for shelter in place for residents during any other interruption and will reduce cooling loads in the summer and heat loss in the winter. A low lighting power density and energy-efficient receptacle equipment will also reduce tenant loads. Roof mounted solar PV is being studied to provide grid relief and resilient back-up power generation.

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

What is the project design precipitation level? (In. / 24 Hours)	6

Describe all building and site measures for reducing storm water run-off:

The project will include measures to strive to, at a minimum, control on site 1.25" of storm water from a 24-hour storm event. This will be achieved through the introduction of a rainwater cistern, with an option for reuse, combined with green infrastructure measures on outdoor areas to minimize imperviousness, including vegetated retention surfaces and porous pavement solutions.

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

Refer to the response to D.1 above. The Project is anticipated to make use of on-site storm water retention to reduce the peak discharge rate of runoff. Redundant

	connections for domestic water and fire protection systems ensure functionality in case of damage or other problems caused by extreme weather events. Sewage backflow valves will prevent backflow into buildings during rainstorms and floods to avoid building damage and maintain occupant safety and comfort.

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA Special Flood Hazard Area?	Yes	What Zone:	AE
What is the current FEMA SFHA Zone Base Flood Elevation for the site (Ft BCB)?			16.5
Is any portion of the site in the BPDA Sea Level Rise Flood Hazard Area (see SLR-FHA online map)?	Yes		

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented by the Sea Level Rise Flood Hazard Area (SLR-FHA), which includes 3.2' of sea level rise above 2013 tide levels, an additional 2.5" to account for subsidence, and the 1% Annual Chance Flood. After using the SLR-FHA to identify a project's Sea Level Rise Base Flood Elevation, proponents should calculate the Sea Level Rise Design Flood Elevation by adding 12" of freeboard for buildings, and 24" of freeboard for critical facilities and infrastructure and any ground floor residential units.

What is the Sea Level Rise - Base Flood Elevation for the site (Ft BCB)?	19.5		
What is the Sea Level Rise - Design Flood Elevation for the site (Ft BCB)?	20.5	First Floor Elevation (Ft BCB):	21.0
What are the Site Elevations at Building (Ft BCB)?	21.0	What is the Accessible Route Elevation (Ft BCB)?	21.0

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The Project Site and the adjacent Harborwalk will be elevated, which, in conjunction with the proposed development in the vicinity of the New England Aquarium site, creates a barrier for tidal flooding and protects the access to the surrounding Downtown Waterfront District. In addition, storm water retention throughout the Site is provided to control localized storm water flooding as the result of ground and sewage saturation.

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

Critical systems will be installed above the second level of the building. If placing sensitive building mechanical equipment at higher elevations is cost-prohibitive, ground-mounted equipment will include waterproofing measures, such as setting equipment on pads, curbs at equipment room entrances, and/or floor drains. Automated flood barriers will be integrated in building entrance and underground vehicle access.

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

All indoor spaces and critical infrastructure is planned to be located above the Sea level Rise Design Flood Elevation (SLR DFE). Emergency lighting, water booster and storm water protection pumps will be on stand-by power.

Describe any strategies that would support rapid recovery after a weather event:

All inhabitable floors of the building are expected to be located above the Sea Level Rise Design Flood Elevation (El. 19.5' BCB). Critical systems will be installed above the second level of the building.

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The Project introduces an elevated site access level which, in conjunction with proposed development in the vicinity of the New England Aquarium site, creates a barrier for tidal flooding and protects the access to the surroundings. In addition, storm water retention throughout the Site is provided to control localized storm water flooding as the result of ground and sewage saturation.

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

Finished floor elevation and critical infrastructure is expected to be designed at or above the SLR DFE, installed at the second level of building.

Thank you for completing the Boston Climate Change Checklist!

For questions or comments about this checklist or Climate Change best practices, please contact:
John.Dalzell@boston.gov

Appendix D

Accessibility Checklist

ARTICLE 80 – ACCESSIBILITY CHECKLIST

A Requirement of the Boston Planning & Development Agency (BPDA)
Article 80 Development Review Process

The Mayor's Commission for Persons with Disabilities works to reduce architectural barriers that impact accessibility in Boston's built environment. This Checklist is intended to ensure that accessibility is planned at the beginning of projects, rather than after a design is completed. It aims to ensure that projects not only meet minimum MAAB/ADA requirements, but that they create a built environment which provides equitable experiences for all people, regardless of age or ability.

All BPDA Small or Large Project Review, including Institutional Master Plan modifications, must complete this Checklist to provide specific detail and data on accessibility. An updated Checklist is required if any project plans change significantly.

For more information on compliance requirements, best practices, and creating ideal designs for accessibility throughout Boston's built environment, proponents are strongly encouraged to meet with Disability Commission staff prior to filing.

Accessibility Analysis Information Sources:

1. Age-Friendly Design Guidelines - Design features that allow residents to Age in Place
   https://www.enterprisecommunity.org/download?fid=6623&nid=3496
2. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
   http://www.ada.gov/2010ADAstandards_index.htm
3. Massachusetts Architectural Access Board 521 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
4. Massachusetts State Building Code 780 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html
5. Massachusetts Office of Disability – Disabled Parking Regulations
   http://www.mass.gov/anf/docs/mod/hp-parking-regulations-summary-mod.pdf
6. MBTA Fixed Route Accessible Transit Stations
   http://www.mbta.com/riding_the_t/accessible_services/
7. City of Boston – Complete Street Guidelines
   http://bostoncompletestreets.org/
8. City of Boston – Mayor's Commission for Persons with Disabilities
   http://www.boston.gov/disability
9. City of Boston – Public Works Sidewalk Reconstruction Policy
   http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
10. City of Boston – Public Improvement Commission Sidewalk Café Policy
    http://www.cityofboston.gov/images_documents/Sidewalk_cafes_tcm3-1845.pdf
11. International Symbol of Accessibility (ISA)
    https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/guide-to-the-ada-standards/guidance-on-the-isa
12. LEED – Pilot Credits for Social Equity and Inclusion
    https://www.usgbc.org/articles/social-equity-pilot-credits-added-leed-nd-and-leed-om

Glossary of Terms:

1. ***Accessible Route*** – A continuous and unobstructed path of travel that meets or exceeds the dimensional requirements set forth by MAAB 521 CMR: Section 20
2. ***Accessible Guestrooms*** – Guestrooms with additional floor space, that meet or exceed the dimensional requirements set forth by MAAB 521 CMR: Section 8.4
3. ***Age-Friendly –*** Implementing structures, settings and polices that allow people to age with dignity and respect in their homes and communities
4. ***Housing – Group 1 Units –*** Residential Units that contain features which can be modified without structural change to meet the specific functional needs of an occupant with a disability, per MAAB 521 CMR: Section 9.3
5. ***Housing – Group 2 Units –*** Residential units with additional floor space that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 9.4
6. ***Ideal Design for Accessibility –*** Design which meets, as well as exceeds, compliance with AAB/ADA building code requirements
7. ***Inclusionary Development Policy (IDP)*** – Program run by the BPDA that preserves access to affordable housing opportunities in the City. For more information visit: http://www.bostonplans.org/housing/overview
8. ***Public Improvement Commission (PIC)*** – The regulatory body in charge of managing the public right of way in Boston. For more information visit: https://www.boston.gov/pic
9. ***Social Equity LEED Credit –*** Pilot LEED credit for projects that engage neighborhood residents and provide community benefits, particularly for persons with disabilities
10. ***Visitability*** – A structure that is designed intentionally with no architectural barriers in its common spaces (entrances, doors openings, hallways, bathrooms), thereby allowing persons with disabilities who have functional limitations to visit

Today's Date: **January 22, 2020**	**Your Name and Title:** **Erik Rexford, Senior Planner**

1. Project Information:

If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.

Project Name:	**The Pinnacle at Central Wharf**
Project Address(es):	**70 East India Row (a/k/a 270 Atlantic Avenue)**
Total Number of Phases/Buildings:	**One Building**
Primary Contact: (Name / Title / Company / Email / Phone):	**Steven G. Mitchell, The Chiofaro Company; smitchell@chiofaro.com; 617-330-5250**
Owner / Developer:	**RHDC 70 East India LLC c/o The Chiofaro Company**
Architect:	**Kohn Pedersen Fox Associates PC**
Civil Engineer:	**Nitsch Engineering**
Landscape Architect:	**Copley Wolff Design Group**
Code Consultant:	**TBD**
Accessibility Consultant (*If you have one)*:	**TBD**
What stage is the project on the date this checklist is being filled out?	**PNF**

2. Building Classification and Description:

This section identifies preliminary construction information about the project including size and uses.

What are the dimensions of the project? See below:

Site Area:	***~58,000 SF***	Building Area:	***864,600 GSF***
First Floor Elevation:	**21.0-feet BCB**	Any below-grade space	***Yes***

What is the construction classification?	**New Construction**	Renovation	Addition	Change of Use

Do you anticipate filing any variances with the MAAB (Massachusetts Architectural Access Board) due to non-compliance with 521 CMR?	**YES**
If yes, is the reason for your MAAB variance: (1) technical infeasibility, **OR** (2) excessive and unreasonable cost without substantial benefit for persons with disabilities?	**Variances, as necessary, may be required based upon technical infeasibility of items where conflicts between codes and MAAB requirements will require relief.**

Have you met with an accessibility consultant or Disability Commission to try to achieve compliance rather than applying for a variance? Explain:				
What are principal building uses? (using IBC definitions, select all appropriate that apply):	Residential – One - Three Unit	**Residential - Multi-unit, Four+**	Institutional	Educational
	Business	**Mercantile**	Factory	Hospitality
	Laboratory / Medical	Storage, Utility and Other	Other:	
List street-level uses of the building:	**Building Entrances, Lobby, Loading Dock Entrances, Below Grade Parking Entrance, and Public Amenity**			

3. Accessibility of Existing Infrastructure:

This section explores the proximity to accessible transit lines and institutions. Identify how the area surrounding the development is accessible for people with mobility impairments, and analyze the existing condition of the accessible routes to these sites through sidewalk and pedestrian ramp reports.

Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:

The neighborhood includes a mix of commercial, residential and civic/cultural properties, as well as a number of new and proposed developments and existing buildings. The area around the Project is generally flat.

List the surrounding accessible MBTA transit lines and their proximity to development site, including commuter rail, subway stations, and bus stops:

Route	Description	Proximity
Rapid Transit		
Blue Line	Bowdoin – Wonderland	500 feet
Orange Line	Forest Hills – Oak Grove	0.4 miles
Local Bus Routes		
4	North Station – Tide Street	500 feet
92	Sullivan Station – Downtown via Main Street	0.4 miles
93	Sullivan Station – Downtown via Bunker Hill Street	0.4 miles
352	State Street – Burlington (Express)	0.4 miles
354	State Street – Woburn (Express)	0.4 miles
Ferry Routes		
Charlestown	Boston (Long Wharf) – Charlestown	0.1 miles

	<table><tr><td>**Hingham/Hull**</td><td>Hingham – Hull – Logan Airport – Boston (Long Wharf)</td><td>0.2 miles</td></tr><tr><td>**Hingham/Hull**</td><td>Boston (Long Wharf) – Hingham</td><td>0.2 miles</td></tr></table>
List surrounding institutions and their proximity: hospitals, public housing, elderly and disabled housing, educational facilities, others:	**Boston Centers for Youth & Families:** **-Boston Centers for Youth & Families – Mirabelle Pool, 475 Commercial Street, Boston, MA. Proximity: 0.9 miles** **-Boston Centers for Youth & Families – City Hall Childcare, 1 City Hall Plaza, Boston, MA. Proximity: 0.4 miles** **Educational Facilities:** **-Elliot K-8 Innovation Upper School – 585 Commercial Street, Boston, MA. Proximity: 1.1 miles** **-Elliot School –16 Charter Street, Boston, MA. Proximity: 0.9 miles** **-St. John School, 9 Moon Street, Boston, MA. Proximity: 0.8 miles** **Libraries:** **-North End Branch of the Boston Public Library – 25 Parmenter Street, Boston, MA. Proximity: 0.8 miles** **West End Branch of the Boston Public Library – 151 Cambridge Street, Boston, MA. Proximity: 1.1 miles** **Public Housing:** **-Charlestown Apartments - 55 Bunker Hill Street, Charlestown, MA 02129** **-West Broadway – 81 Orton Marotta Way, South Boston, MA. Proximity: 1.5 miles** **-West Broadway Homes - 73 Crowley Rogers Way, South Boston, MA. Proximity: 1.4 mile** **-Old Colony – 265 East 9th Street, South Boston, MA. Proximity: 2.0 miles** **-Mary Ellen McCormack – 10 Kemp Street, South Boston, MA. Proximity: 1.5 miles** **Elderly / Disabled Housing:** **-Ausonia Apartments, 185 Fulton Street, Boston, MA 02109. Proximity: 0.7 miles** **-Heritage Elderly - 209 Sumner Street, East Boston, MA 02128. Proximity: 0.9 miles** **-General Warren, 114 Rutherford Ave, Charlestown, MA 02129. Proximity: 1.6 miles** **-Bay Cove Group Home III, 267 West 3rd Street, South Boston, MA. Proximity: 1.6 miles** **Hospitals / Healthcare:** **-Tufts Medical Center, 800 Washington Street, Boston, MA. Proximity: 0.8 miles** **-Massachusetts General Hospital, 15 Parkman Street, Boston, MA 02114. Proximity: 1.2 miles** **-Boston Medical Center, 72 E Concord Street, Boston, MA. Proximity: 2.0 miles**
List surrounding government buildings and their proximity: libraries, community centers, recreational facilities, and related facilities:	**-City Hall, One City Hall Plaza, Boston, MA. Proximity: 0.4 miles** **-District Hall Civic Center, 75 Northern Avenue, Boston, MA. Proximity: 0.7 miles** **-Nazarro Community Center, 30 N Bennet St, Boston, MA. Proximity: 0.9 miles** **-Boston Public Library – 700 Boylston Street, Boston, MA. Proximity: 1.7 miles**

4. Surrounding Site Conditions – Existing:

This section identifies current condition of the sidewalks and pedestrian ramps at the development site.

Is the development site within a formally recognized historic district? ***If yes,*** which one?	**NO**
Are there existing sidewalks and pedestrian ramps at the development site? ***If yes***, list the existing sidewalk and pedestrian ramp slopes, dimensions, materials, and physical condition:	**YES** **Site property is bounded on all four sides by sidewalks.** **East India Row/Harborwalk (pedestrianized public way east of Site): 60' wide, brick, flat, good condition.** **East India Row (vehicular way south of site): 14' wide, brick and concrete, flat, good condition.** **Atlantic Avenue: 20' to 32' wide, brick and concrete, flat, good condition.** **Milk Street: 12' wide, bituminous concrete and concrete, flat, good condition.**
Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA/MAAB compliant (with yellow composite detectable warnings, cast in concrete)? ***If yes,*** provide description and photos. If ***no,*** explain plans for compliance:	**NO** **All existing sidewalks will be replaced from curb to building.**

5. Surrounding Site Conditions – Proposed

This section identifies the proposed condition of the sidewalks and pedestrian ramps around the development site. Ideal sidewalk width contributes to lively pedestrian activity, allowing people to walk side by side and pass each other comfortably walking alone, in pairs, or using a wheelchair or walker.

Are the proposed sidewalks consistent with Boston Complete Streets? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard. Explain:	**YES** **The proposed sidewalks will be consistent with City of Boston Complete Streets standards. It is anticipated that the Downtown Mixed-Use type may be applied to East India and Milk Street and the Downtown Commercial type may be applied to Atlantic Avenue.**

What are the total dimensions and slopes of the proposed sidewalks? List the widths of each proposed zone: Frontage, Pedestrian and Furnishing Zone:	**The exact dimensions of each sidewalk shall be developed in collaboration with City of Boston, BPDA, Accessibility Commission and BCDC during the Article 80 process. All sidewalks shall have a greenscape/furnishing zone, pedestrian zone and frontage (café) zone which comply with current City of Boston Complete Streets Guidelines. All sidewalks shall have a cross slope of 2% or less and a directional slope of 5% or less.**
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	**The materials of each sidewalk shall be developed in collaboration with City of Boston, BPDA, Accessibility Commission and BCDC during the Article 80 process.** **Current assumptions include a pedestrian zone comprised primarily of medium broom finish cast-in-place concrete with small areas of concrete or unit pavers selected for continuity with existing conditions on pedestrian plazas and Harborwalk. The furnishing zone will primarily consist of precast concrete unit pavers and vegetated surface. The frontage (café) zone will consist of unit pavers complimentary to the adjacent ground floor uses.**
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?	**YES** **The development of the frontage (café) zone program, dimensions and portions of the remaining Right of Way shall be developed in collaboration with City of Boston, BPDA, Accessibility Commission and BCDC during the Article 80 process. All frontage (café) zones shall be delineated in a manner which allows a clear and continuous pedestrian zone along the sidewalk. Bike lanes, cycle tracks, loading zones, etc., which may be included within the Right of Way, shall be coordinated closely with BPDA, BTD and other City of Boston Agencies.**
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	**YES** **Along some of the Rights of Way, a portion of the pedestrian zone may be located on private property and a pedestrian easement shall be part of the documentation during the PIC process.**
Will any portion of this project be going through the Public Improvement Commission (PIC)? ***If yes,*** identify PIC actions and provide details:	**YES** **The Project will go through PIC on items including but not limited to potential earth retention plans, surface improvements in the public right-of-way, and discontinuance.**

6. Building Entrances, Vertical Connections, Accessible Routes, and Common Areas:
The primary objective in ideal accessible design is to build smooth, level, continuous routes and vertical connections that are integrated with standard routes, not relocated to alternate areas. This creates universal access to all entrances and spaces, and creates equity for persons of all ages and abilities by allowing for "aging in place" and "visitability" (visiting neighbors).

Are all of the building entrances accessible? Describe the accessibility of each building entrance: flush condition, stairs, ramp, lift, elevator, or other. If all of the building entrances are ***not accessible***, explain:	**YES** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design and the Proponent intends to comply accessibility requirements for the building's entrances.. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive.**
Are all building entrances well-marked with signage, lighting, and protection from weather?	**YES** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design and the Proponent intends to comply with best practices for signage, lighting and protection from weather at the building's entrances. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive.**
Are all vertical connections located within the site (interior and exterior) integrated and accessible? Describe each vertical connection (interior and exterior): stairs, ramp, lift, elevator, or other. If all the vertical connections are ***not integrated and accessible***, explain:	**YES** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design and the Proponent intends to comply accessibility requirements for integrating vertical connections on the Site. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive.**
Are all common spaces in the development located on an accessible route? Describe:	**YES** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design and the Proponent intends to ensure that all common spaces at the Project Site are on an accessible route. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive.**

Are all of the common spaces accessible for persons with mobility impairments? (Examples: community rooms, laundry areas, outdoor spaces, garages, decks/roof decks):	**YES** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design and the Proponent intends to ensure that all common spaces are accessible for persons with mobility impairments. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive.**
What built-in features are provided in common public spaces? (Examples: built-in furnishings such as tables, seating; countertop heights, outdoor grills and benches). Are these accessible? Do benches and seats have armrests? Describe:	**Built in furnishings will be accessible as per 521 CMR and ADA and/or FHA as applicable.**
If this project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package:	**YES** **The way-finding/signage will be developed as the Project design progresses and details are determined.**
7. Accessible Housing Units (If applicable) – Residential Group 1, Group 2, and Hospitality Guestrooms *In order to create accessible housing and hospitality rooms, this section addresses the number of accessible units that are proposed for barrier-free housing and hotel rooms in this development.*	
What is the total number of proposed housing units or hotel rooms for this development?	**200 UNITS**
If a residential development, how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units?	**All proposed residential units are rental. The affordable breakdown will be consistent with the Inclusionary Development Policy.**

If a residential development, will all units be constructed as MAAB Group 1* units, which have blocking and other built-in infrastructure that makes them adaptable for access modifications in the future? *(*this is required in all new construction)*:	**YES** **All units will meet MAAB Group 1 requirements as required.**
If a residential development, how many fully built-out ADA (MAAB Group 2) units will there be? (*requirement is 5%*):	**Development will meet MAAB Group 2 requirements for 5% of units (5% of 200 = 10 units)**
If a residential development, how many units will be built-out as ADA/MAAB sensory units? (*requirement is 2%):*	**Development will meet ADA/MAAB sensory requirements for 2% of units (2% of 200 = 4 units)**
If a residential development, how many of the fully built-out ADA (MAAB Group 2) units will also be IDP units? ***If none***, explain:	**It is expected 5% of affordable units will meet MAAB Group 2 requirements. The remaining affordable units will meet MAAB Group 1 requirements.**
If a hospitality development, how many of the accessible units will feature a wheel-in shower? Will accessibility features and equipment be built in or provided (built-in bench, tub seat, etc.)? ***If yes,*** provide details and location of equipment:	**N/A**
Do the proposed housing and hotel units that are standard, non-ADA units	**NO**

(MAAB Group 1) have any architectural barriers that would prevent entry or use of the space by persons with mobility impairments? (Example: stairs or thresholds within units, step up to balcony, etc.). ***If yes,*** explain:	
8. Accessible Parking: *See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirements and the Massachusetts Office of Disability Disabled Parking Regulations.*	
What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage? Will they be mechanically stacked? Explain:	**The Project includes 1,100 parking spaces in a below-grade garage. The Project does not currently include mechanically stacked parking.**
How many of these parking spaces will be designated as Accessible Parking Spaces? How many will be "Van Accessible" spaces with an 8 foot access aisle? Describe:	**Based on the current anticipated garage parking spaces, the Project will have 31 Accessible Parking Spaces, 6 of which will be Van Accessible Spaces.**
Will visitor parking be provided? If ***yes,*** where will the accessible visitor parking be located?	**YES** **Visitor accessible parking will be provided in the garage. The garage design will differentiate between visitor parking and other user groups. Accessible Spaces will be provided for the separated group(s) and the shared parking groups separately.**
Has a drop-off area been identified? ***If yes,*** where is it located, and is it wheelchair accessible?	**YES** **Accessible drop-off areas are planned for Milk Street, Atlantic Avenue, and East India Row. Drop-off location(s) adjacent to each entrance will be refined during the design process. All will be wheelchair accessible.**
9. Community Impact: *Accessibility and inclusion extend past required compliance with building codes to providing an overall development that allows full and equal participation of persons with disabilities and older adults.*	

Has the proponent looked into either of the two new LEED Credit Pilots for (1) Inclusion, or (2) Social Equity – with a proposal that could increase inclusion of persons with disabilities? ***If yes,*** describe:	**YES** **Pilot credits will be developed as the Project design progresses and details are determined.**
These new LEED Pilot Credits may be awarded for filling out this checklist and evaluating ways to add features to your design that will increase equity for persons with disabilities. Have you looked at this list to assess the feasibility of adding any of these features?	**YES** **Pilot credits will be developed as the Project design progresses and details are determined.**
Is this project providing funding or improvements to the surrounding neighborhood or to adjacent MBTA Station infrastructure? (Examples: adding street trees, building or refurbishing parks, adding an additional MBTA elevator or funding other accessibility improvements or other community initiatives)? ***If yes,*** describe:	**YES** **The Project includes significant public realm improvements, including along Milk Street and the pedestrianized section of East India Row. The DWMHP offsets specific to the Project Site, as designed, are $10 million in funding to be provided by the Proponent for the design and construction of the public realm improvements associated with the Aquarium's proposed "Blueway" vision and $300,000 for planning, feasibility assessment, design, engineering and permitting for a signature waterfront park and water transportation gateway at the BPDA-owned Chart House parking lot.**
Will any public transportation infrastructure be affected by this development, during and/or post-construction (Examples: are any bus stops being removed or	**NO** **Public transportation infrastructure is not anticipated to be affected by this development.**

relocated)? ***If yes***, has the proponent coordinated with the MBTA for mitigation? Explain:	
During construction, will any on-street accessible parking spaces be impacted (during and/or post-construction)? **If yes,** what is the plan for relocating the spaces?	**YES** **On-street accessible parking spaces may be affected during construction. The Proponent will work closely with BTD and other stakeholders to develop, as necessary, reasonable measures intended to mitigate any adverse impacts to on-street accessible parking.**
Has the proponent reviewed these plans with the City of Boston Disability Commission Architectural Access staff? ***If no,*** will you be setting up a meeting before filing?	**NO** **Maximizing accessibility and inclusivity is a core principle that has guided the Project's design. Addition details regarding accessibility and inclusion will be provided as the Project's design is further refined. The Project team looks forward to working with the Staff to the Mayor's Commission for Persons with Disabilities, the BPDA Staff, PIC Staff and others to insure that that the Project is accessibility and inclusive. The Project team will meet with the City of Boston Disability Commission Architectural Access staff at the appropriate stage of design, with the guidance of the BPDA Staff**

10. Attachments

Include a list of all documents you are submitting with this Checklist – drawings, diagrams, photos, or any other materials that describe the accessible and inclusive elements of this project.

Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances. **See attached diagram. Additional detail will be provided in next submission.**
Provide a diagram of the accessible route connections through the site, including distances. **See attached diagram. Additional detail will be provided in next submission.**
Provide a diagram the accessible route to any roof decks or outdoor space (if applicable). **Details of upper floor public space(s) have not been determined. Additional detail will be provided in next submission..**
Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry. **Details of unit have not been determined, but will be spaced out accordingly and provided in next submission.**
Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. • • • •

This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to ensure that all buildings, sidewalks, parks, and open spaces are welcoming and usable to Boston's diverse residents and visitors, including those with physical, sensory, and other disabilities.

For questions about this checklist, or for more information on best practices for improving accessibility and inclusion, visit www.boston.gov/disability, or contact our Architectural Access staff at:

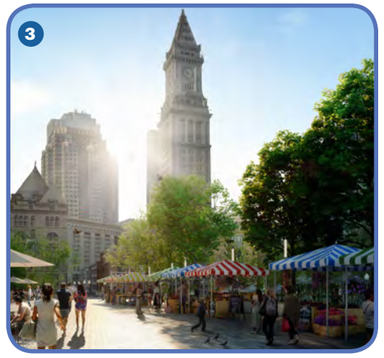
ADA@boston.gov | patricia.mendez@boston.gov | sarah.leung@boston.gov |
617-635-3682 (phone) | 617-635-2726 (fax) | 617-635-2541 (tty)

The Mayor's Commission for Persons with Disabilities
Boston City Hall, One City Hall Square, Room 967, Boston MA 02201

Updated: October, 2019


1
IMAX
THEATRE


2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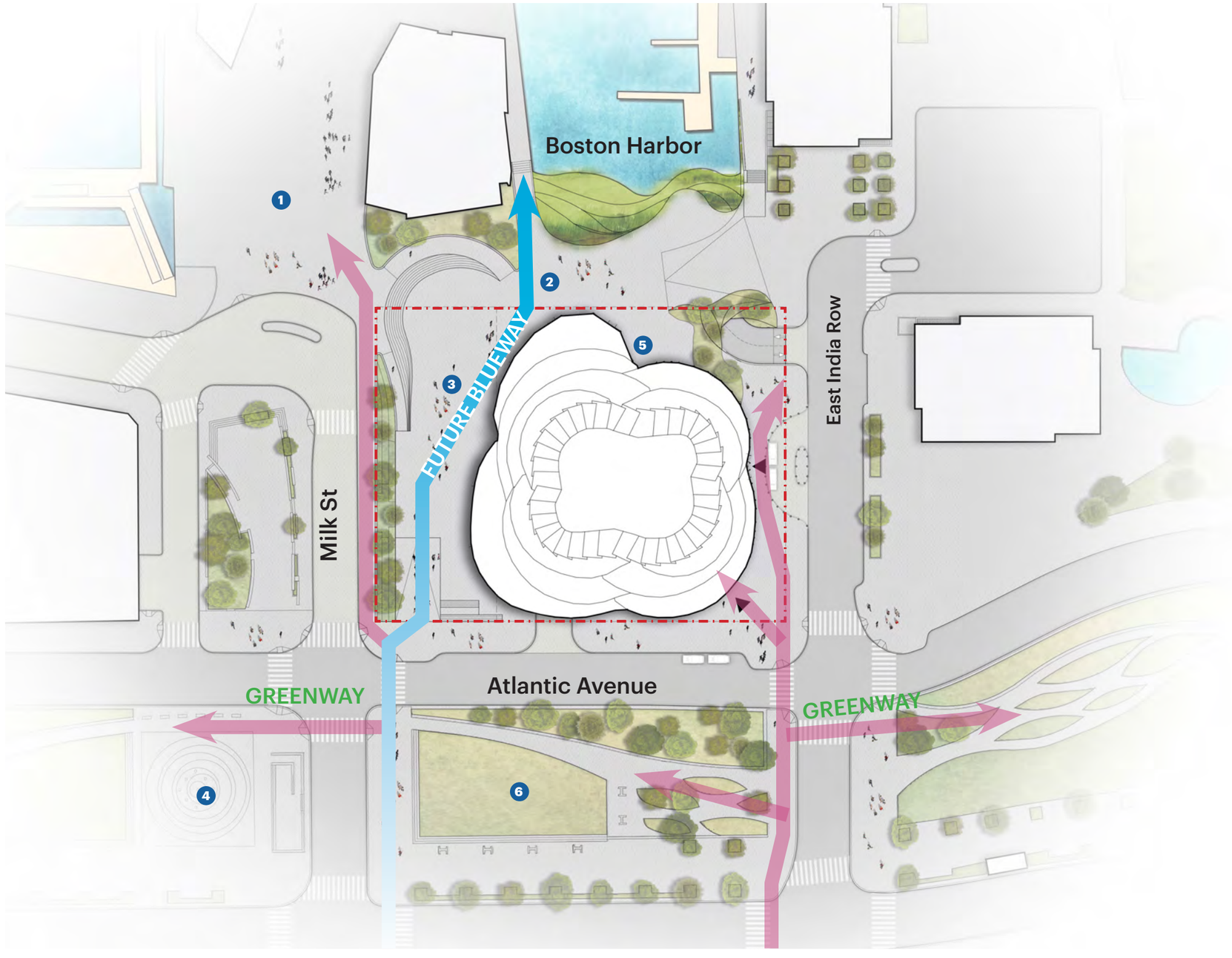
Boston Harbor
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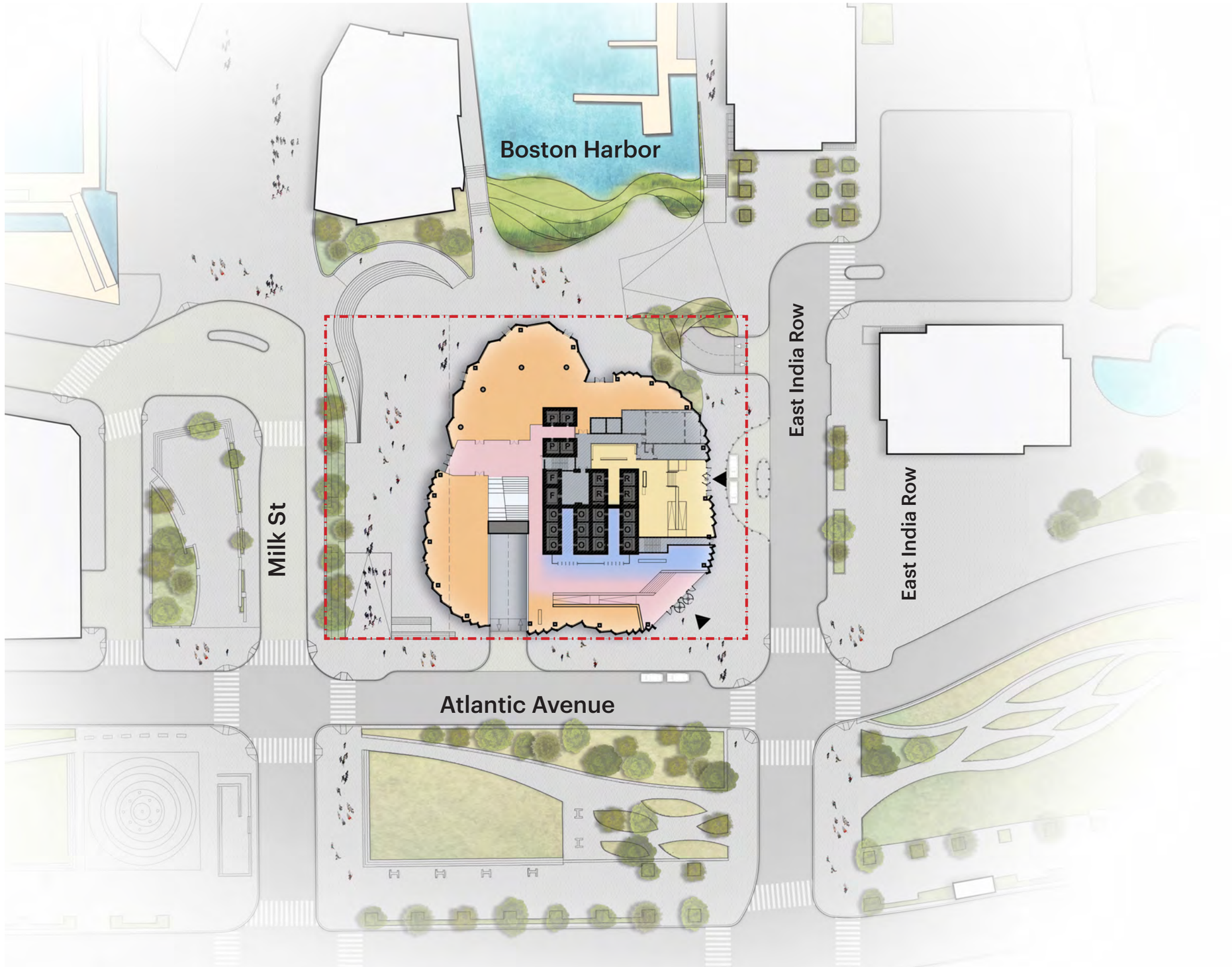
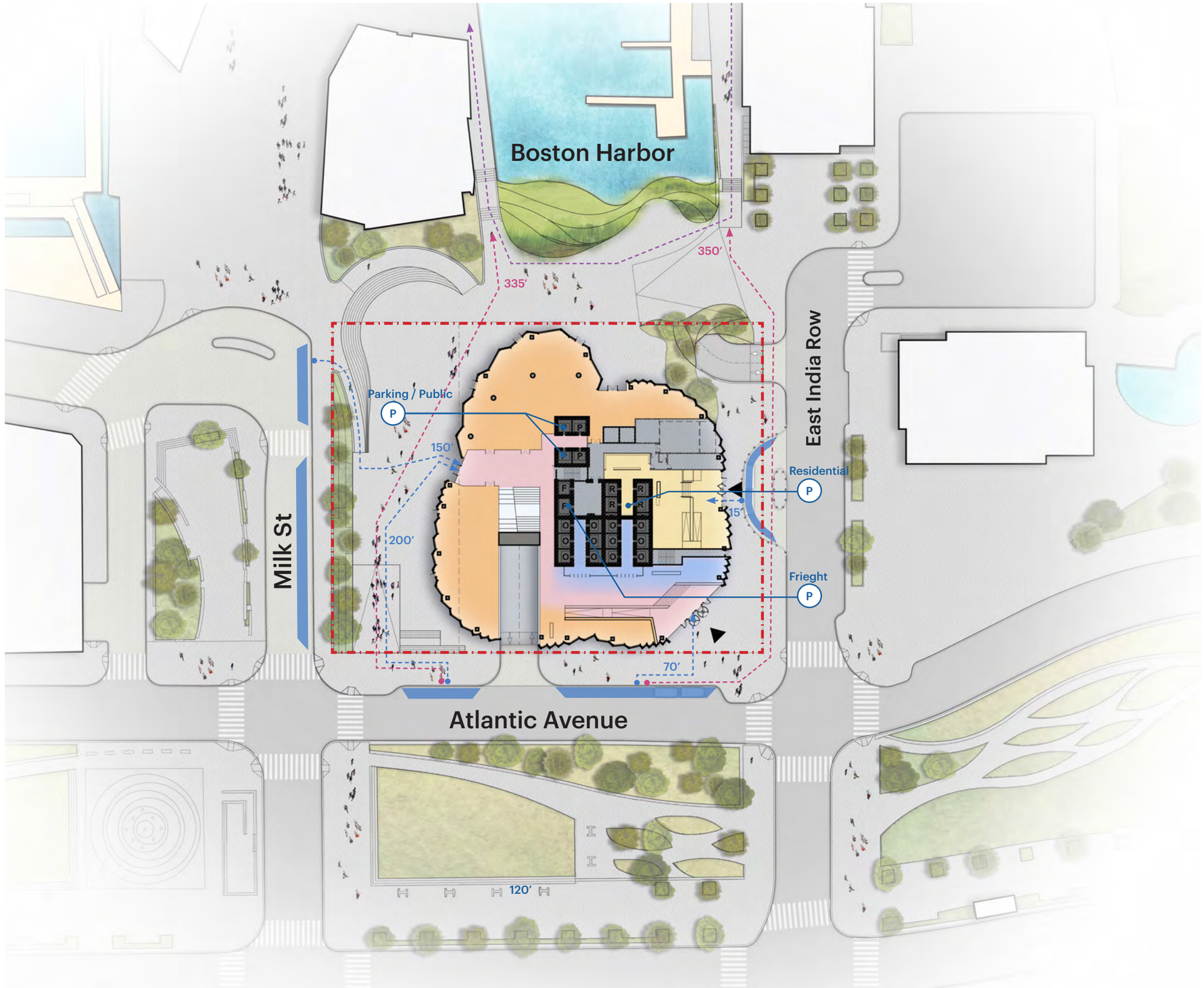
FUTURE BLUEWAY
East India Row
Milk St
GREENWAY
Atlantic Avenue
GREENWAY

Ground Level Plan



Accessibility Diagram



Drop Off Area

Accessible Route + Distance

Accessible Route to Harborwalk + Distance

Harborwalk

P

Accessible Lift Lobby to Parking Garage

Site Access Plan

Appendix E

Smart Utilities Checklist

Boston Smart Utilities Checklist

Date Submitted:	01/21/2020 17:12:23
Submitted by:	erexford@epsilonassociates.com

Background

The Smart Utilities Checklist will facilitate the Boston Smart Utilities Steering Committee's review of:

a) compliance with the Smart Utilities Policy for Article 80 Development Review, which calls for the integration of five (5) Smart Utility Technologies (SUTs) into Article 80 developments

b) integration of the Smart Utility Standards

More information about the Boston Smart Utilities Vision project, including the Smart Utilities Policy and Smart Utility Standards, is available at:
www.http://bostonplans.org/smart-utilities

Note: Any documents submitted via email to manuel.esquivel@boston.gov will not be attached to the pdf form generated after submission, but are available upon request.

Part 1 - General Project Information

1.1 Project Name	The Pinnacle at Central Wharf
1.2 Project Address	70 East India Row (a/k/a) 270 Atlantic Avenue
1.3 Building Size (square feet) **For a multi-building development, enter total development size (square feet)*	864600
1.4 Filing Stage	Initial Filing (i.e., PNF)
1.5 Filing Contact Information	
1.5a Name	John Schmid

Boston Smart Utilities Checklist

1.5b Company	Nitsch Engineering
1.5c E-mail	jschmid@nitscheng.com
1.5d Phone Number	6173380063

1.6 Project Team

1.6a Project Owner/Developer	RHDC 70 East India LLC c/o The Chiofaro Company
1.6b Architect	Kohn Pederson Fox Associates PC
1.6c Permitting	Epsilon Associates, Inc,
1.6d Construction Management	TBD

Part 2 - District Energy Microgrids

Fill out this section if the proposed project's total development size is equal to or greater than 1.5 million square feet.

Note on submission requirements timeline:

Feasibility Assessment Part A should be submitted with PNF or any other initial filing.

Feasibility Assessment Part B should be submitted with any major filing during the Development Review stage (i.e., DPIR)

District Energy Microgrid Master Plan Part A should be submitted before submission of the Draft Board Memorandum by the BPDA Project Manager (Note: Draft Board Memorandums are due one month ahead of the BPDA Board meetings)

District Energy Microgrid Master Plan Part B should be submitted before applying for a Building Permit

Please email submission to manuel.esquivel@boston.gov

2.1 Consultant Assessing/Designing District Energy Microgrid (if applicable)	Not Applicable
2.2 Latest document submitted	

Boston Smart Utilities Checklist

2.3 Date of latest submission	
2.4 Which of the following have you had engagement/review meetings with regarding District Energy Microgrids? (select all that apply)	
2.5 What engagement meetings have you had with utilities and/or other agencies (i.e., MA DOER, MassCEC) regarding District Energy Microgrids? (Optional: include dates)	
2.6 Additional Information	

Part 3 - Telecommunications Utilidor

Fill out this section if the proposed project's total development size is equal to or greater than 1.5 million square feet OR if the project will include the construction of roadways equal to or greater than 0.5 miles in length.

Please submit a map/diagram highlighting the sections of the roads on the development area where a Telecom Utilidor will be installed, including access points to the Telcom Utilidor (i.e., manholes)

Please email submission to manuel.esquivel@boston.gov

3.1 Consultant Assessing/Designing Telecom Utilidor (if applicable)	Not Applicable
3.2 Date Telecom Utilidor Map/Diagram was submitted	
3.3 Dimensions of Telecom Utilidor (include units)	

Boston Smart Utilities Checklist

3.3a Cross-section (i.e., diameter, width X height)	
3.3b Length	
3.4 Capacity of Telecom Utilidor (i.e., number of interducts, 2 inch (ID) pipes, etc.)	
3.5 Which of the following have you had engagement/review meetings with regarding the Telecom Utilidor? (select all that apply)	
3.6 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding the Telecom Utilidor? (Optional: include dates)	
3.7 Additional Information	

Part 4 - Green Infrastructure

Fill out this section if the proposed project's total development size is equal to or greater than 100,000 square feet.

Please submit a map/diagram highlighting where on the development Green Infrastructure will be installed.

Please email submission to manuel.esquivel@boston.gov

4.1 Consultant Assessing/Designing Green Infrastructure (if applicable)	Nitsch Engineering
4.2 Date Green Infrastructure Map/Diagram was submitted	

Boston Smart Utilities Checklist

4.3 Types of Green Infrastructure included in the project (select all that apply)	Rainwater Reuse/Stormwater Recharge Systems
4.4 Total impervious area of the development (in square inches)	8257825
4.5 Volume of stormwater that will be retained (in cubic inches)* **Note: Should equal to at least "Total impervious area (entered in section 4.4)" times "1.25 inches"*	10322280
4.6 Which of the following have you had engagement/review meetings with regarding Green Infrastructure? (select all that apply)	None to date
4.7 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding Green Infrastructure? (Optional: include dates)	None to date
4.8 Additional Information	Will be coordinated with the Boston Water and Sewer Commission through the Site Plan Approval process.

Part 5 - Adaptive Signal Technology (AST)

Fill out this section if as part of your project BTD will require you to install new traffic signals or make significant improvements to the existing signal system.

Please submit a map/diagram highlighting the context of AST around the proposed development area, as well as any areas within the development where new traffic signals will be installed or where significant improvements to traffic signals will be made.

Please email submission to manuel.esquivel@boston.gov

5.1 Consultant Assessing/Designing	Not Applicable

Boston Smart Utilities Checklist

Adaptive Signal Technology (if applicable)	
5.2 Date AST Map/Diagram was submitted	
5.3 Describe how the AST system will benefit/impact the following transportation modes	
5.3a Pedestrians	
5.3b Bicycles	
5.3c Buses and other Public Transportation	
5.3d Other Motorized Vehicles	
5.4 Describe the components of the AST system (including system design and components)	
5.5 Which of the following have you had engagement/review meetings with regarding AST? (select all that apply)	
5.6 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding AST? (Optional: include dates)	
5.7 Additional Information	

Part 6 - Smart Street Lights

Fill out this section if as part of your project PWD and PIC will require you to install new street lights or make significant improvements to the existing street light system.

Please submit a map/diagram highlighting where new street lights will be installed or where improvements to street lights will be made.

Boston Smart Utilities Checklist

Please email submission to manuel.esquivel@boston.gov

6.1 Consultant Assessing/Designing Smart Street Lights (if applicable)	Nitsch Engineering
6.2 Date Smart Street Lights Map/Diagram was submitted	
6.3 Which of the following have you had engagement/review meetings with regarding Smart Street Lights? (select all that apply)	None to date
6.4 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding Smart Street Lights? (Optional: include dates)	None to date
6.5 Additional Information	If required, Smart Street Lights infrastructure will be coordinated with Boston Street Lighting during the PIC process.

Part 7 - Smart Utility Standards

The Smart Utility Standards set forth guidelines for planning and integration of SUTs with existing utility infrastructure in existing or new streets, including cross-section, lateral, and intersection diagrams. The Smart Utility Standards are intended to serve as guidelines for developers, architects, engineers, and utility providers for planning, designing, and locating utilities. The Smart Utility Standards will serve as the baseline for discussions on any deviations from the standards needed/proposed for any given utility infrastructure.

Please submit typical below and above grade cross section diagrams of all utility infrastructure in the proposed development area (including infrastructure related to the applicable SUTs).

Please submit typical below and above grade lateral diagrams of all utility infrastructure in the proposed development area (including infrastructure related to the applicable SUTs).

Boston Smart Utilities Checklist

Please email submission to manuel.esquivel@boston.gov

7.1 Date Cross Section Diagram(s) was submitted	
7.2 Date Lateral Diagram(s) was submitted	
7.3 Additional Information	

1/15/2020 12:52 PM

SMART UTILITIES PLAN

VOLUME OF STORMWATER TO BE RETAINED ON SITE

1.25" X TOTAL SITE IMPERVIOUS AREA = REQUIRED RECHARGE VOLUME
1.25" X 57,346 SF = 5,974 CUBIC FEET (100% IMPERVIOUS ASSUMED)
= 14,500 GALLONS (ROUNDED UP)

EXISTING STREET TREE TO BE REPLACED IN KIND IF DAMAGED DURING CONSTRUCTION (TYP.)

NEW SEWER SERVICE

P&M EX. STREET LIGHTS, REPLACE WITH SMART LIGHTS (TYP.)

PROPOSED POTENTIAL PLANTING BED/ PERMEABLE PLANTING AREA

NEW ELECTRICAL SERVICE

PROPOSED RESIDENTIAL DROP-OFF AREA W/ FLUSH CURB

NEW TELECOM SERVICE

PROPOSED CURB CUT FOR RESIDENTIAL ENTRANCE

PROPOSED POTENTIAL STREET TREE (TYP.)

PROPOSED PLANTING BED/ PERMEABLE PLANTING AREA

RELOCATED WATER MAINS THROUGH UTILITY TUNNEL (ONE 16", TWO 20")

PULL BOX (TYP.)

PROPOSED CURB CUT FOR RETAIL, OFFICE, PUBLIC PARKING, AND LOADING

PROPOSED STORMWATER RECHARGE SYSTEM MIN. 5,974 CUBIC FEET OF STORAGE (LEVEL B-6)

PROPOSED BUILDING FOOTPRINT

PROPOSED 8" DICL DOMESTIC WATER SERVICE

PROPOSED 10" DICL FIRE PROTECTION SERVICE

PROPERTY LINE (TYP.)

NEW GAS LINE

EDGE OF UTILITY TUNNEL

CONNECT RECHARGE SYSTEM OVERFLOW TO EX. 8" ROOF DRAIN

NEW ELECTRICAL SERVICE

EXISTING BUILDING FOOTPRINT

ALL STREET LIGHTING CONDUIT SHALL INCLUDE "SHADOW CONDUIT" FOR FUTURE USE

18.5'

38.0'

EAST INDIA ROW

MILK STREET

CENTRAL STREET

SCALE:
1" = 40'

40 20 0 40 80

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Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

BOSTON HARBOR TOWER
70 EAST INDIA ROW
BOSTON, MA 02110

PREPARED FOR:
THE CHIOFARO COMPANY
ONE INTERNATIONAL PLACE, SUITE 4600, FORT HILL SQUARE, BOSTON, MA 02110

PROJECT #	12972
FILE:	12972PNF-SMART.DWG
SCALE:	1" = 40'
DATE:	1/15/2020
PROJECT MGR:	JMS
SURVEYOR:	FELDMAN
DRAFTED BY:	KAQ
CHECKED BY:	JMS

SHEET:

C-0

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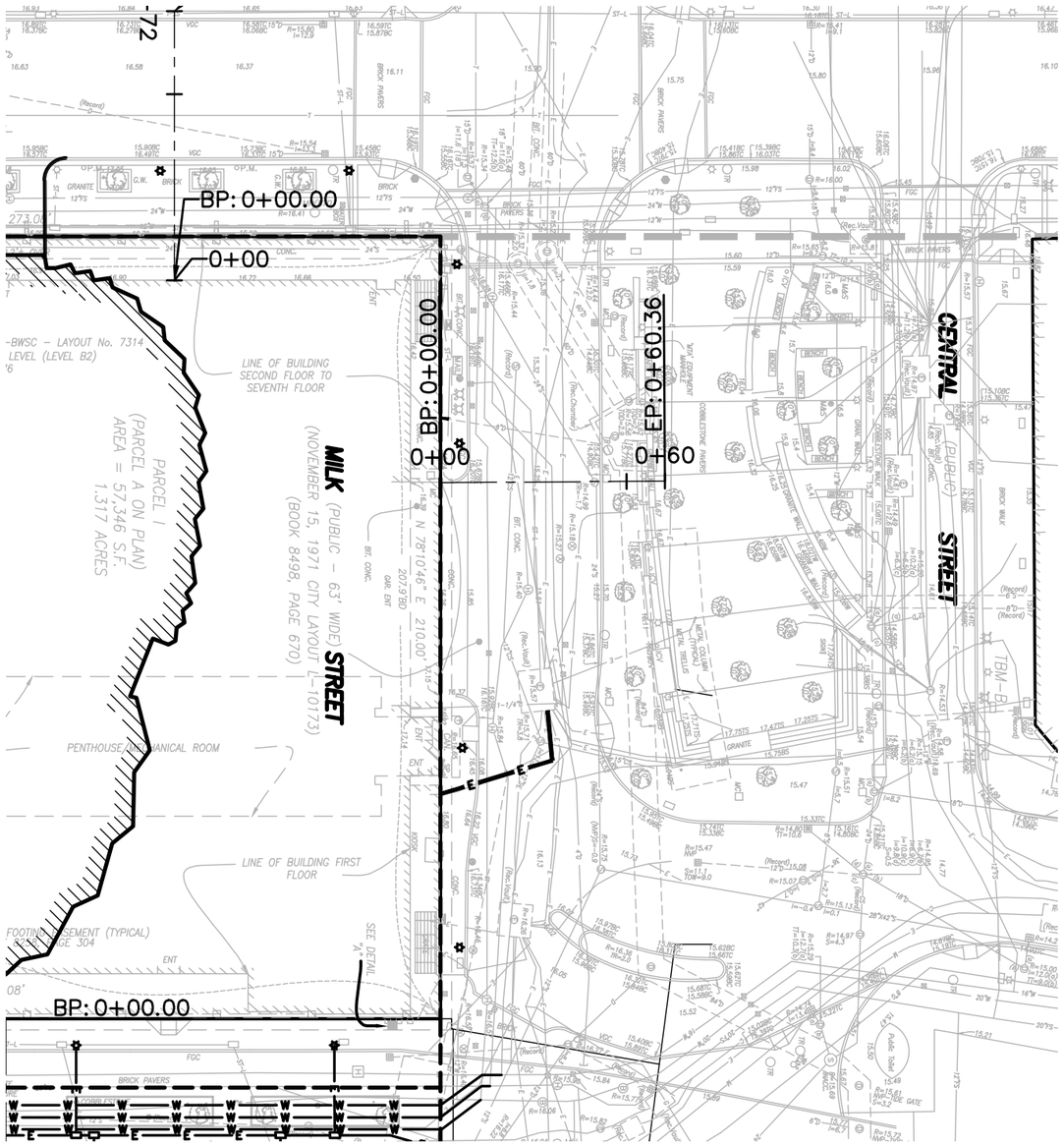

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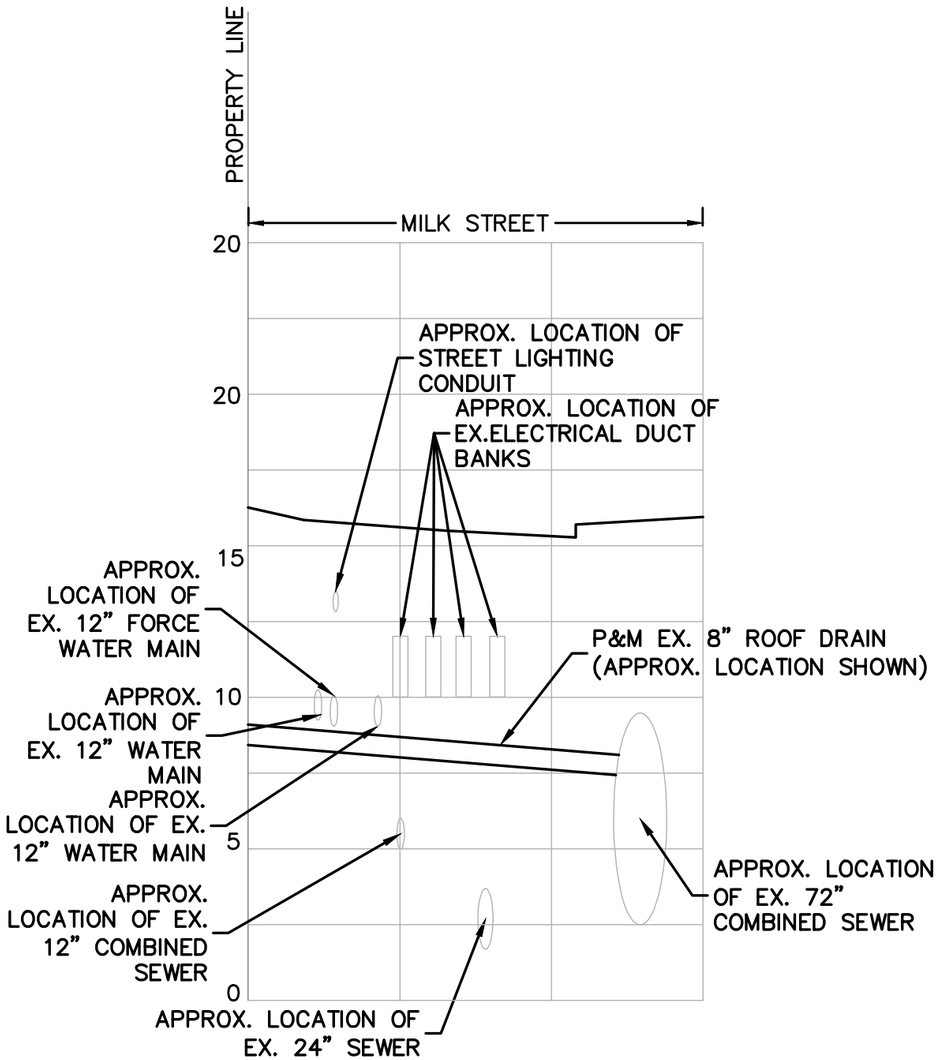

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VERTICAL: 1" = 5'

MILK STREET

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PROJECT #	12972
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SURVEYOR:	FELDMAN
DRAFTED BY:	KAQ
CHECKED BY:	JMS

SHEET:
C-1

1/15/2020 9:47 AM

(1996 STATE HIGHWAY LAYOUT No. 7314)

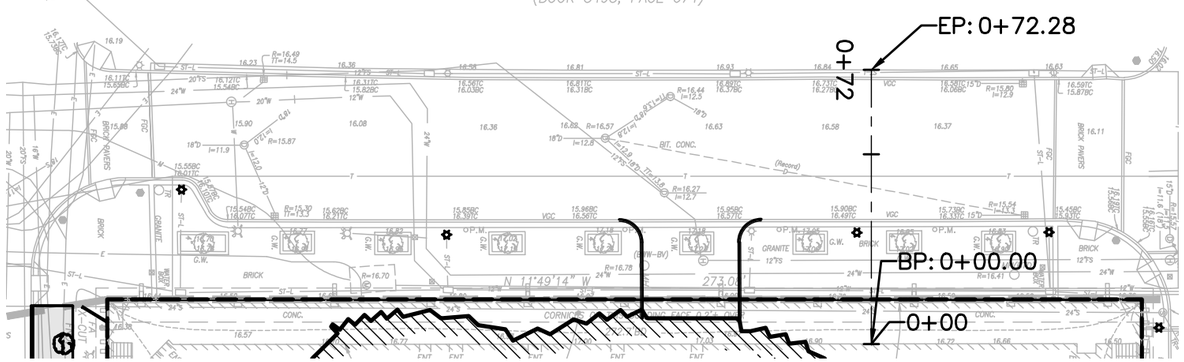
(RELOCATED)

ATLANTIC (PUBLIC – VARIABLE WIDTH) **AVENUE**

(NOVEMBER 15, 1971 CITY LAYOUT L–10171)
(BOOK 8498, PAGE 674)

MASSACHUSETTS HIGHWAY DEPARTMENT
LAYOUT No. 7314
L–10169
L–10170
L–10171
L–10173

CENTRAL ARTERY SPECIAL DISTRICT (PARCELS 15/16)



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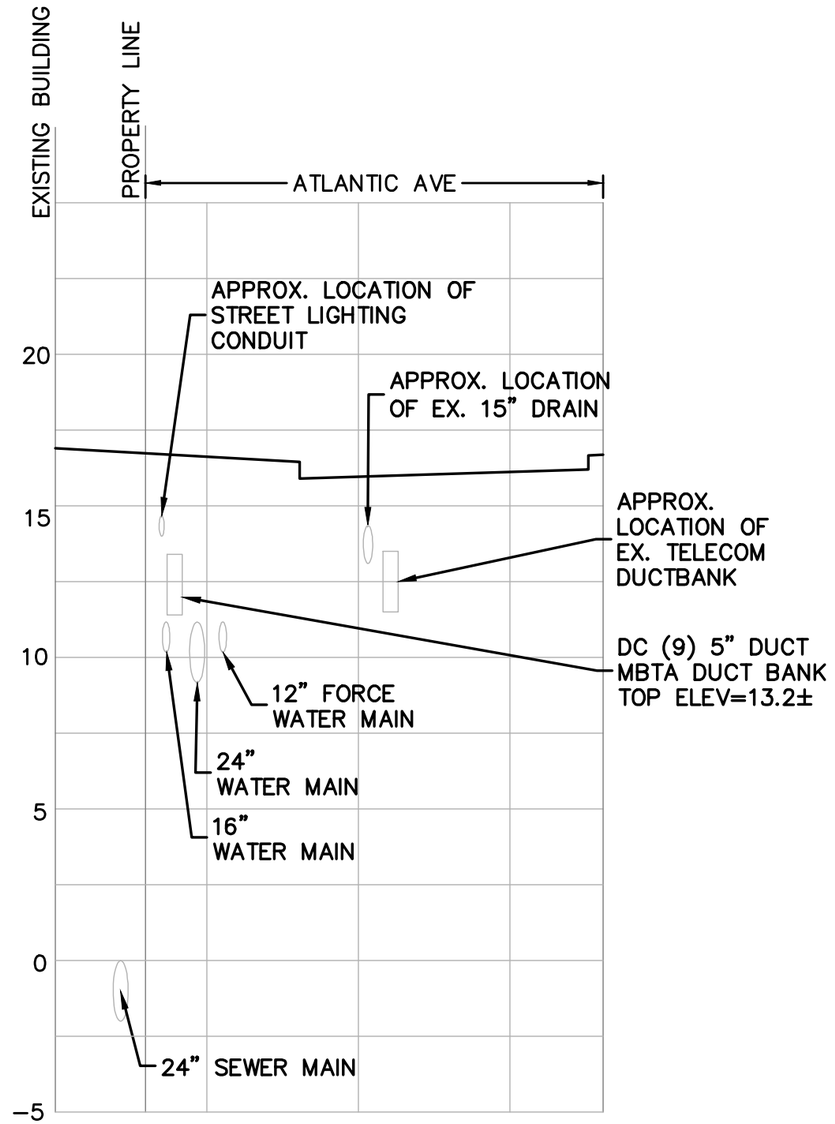

ATLANTIC AVENUE

SCALE:
HORIZONTAL: 1" = 20'
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5 2.5 0 5 10
VERTICAL: 1" = 5'

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FILE: 12972PNF.DWG
SCALE: SEE PLAN
DATE: 1/15/2020
PROJECT MGR: JMS
SURVEYOR: FELDMAN
DRAFTED BY: KAQ
CHECKED BY: JMS

SHEET:

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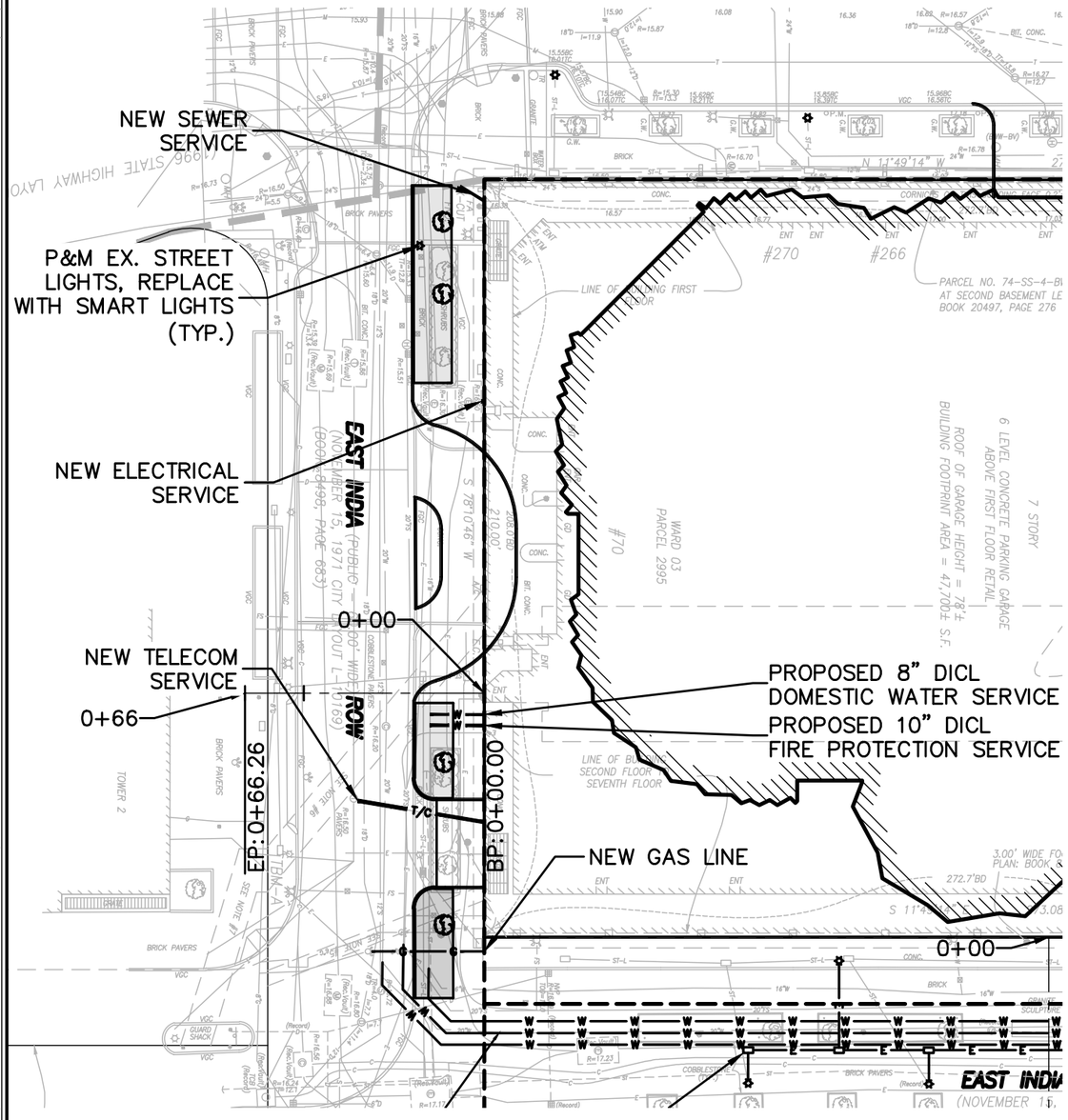

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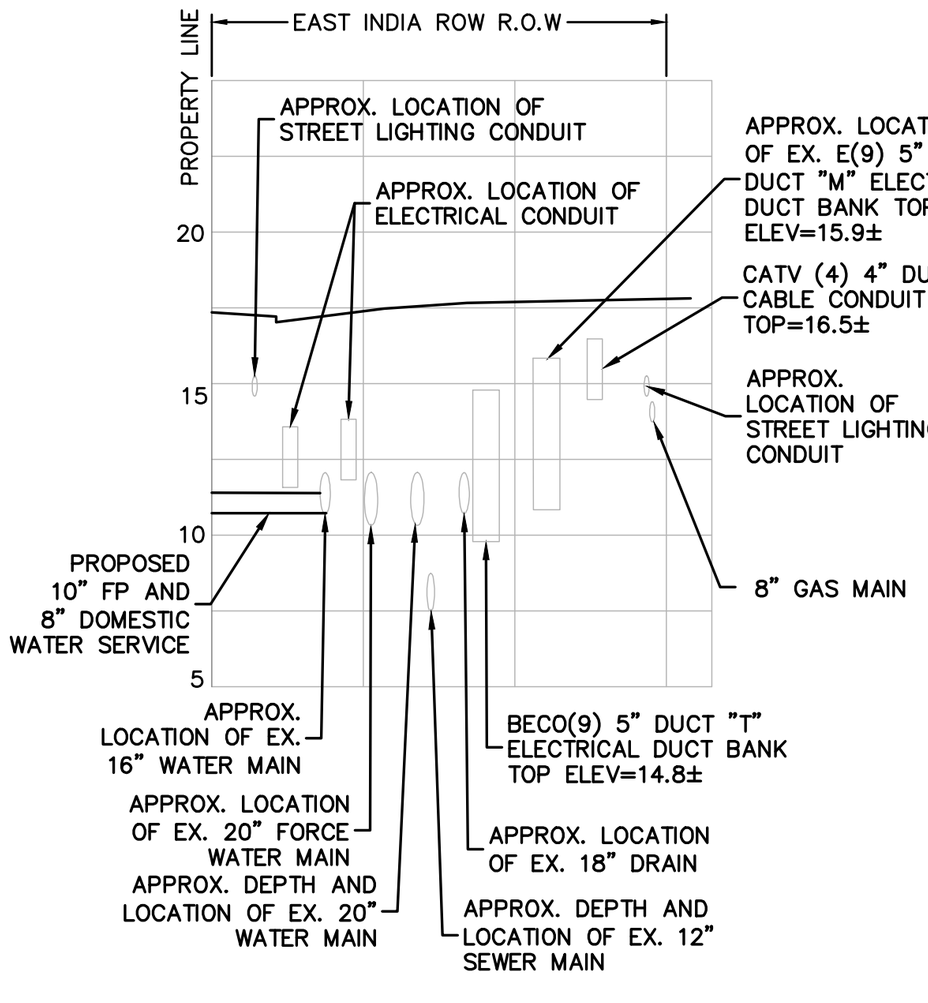

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5 2.5 0 5 10
VERTICAL: 1" = 5'

EAST INDIA ROW
(SOUTH SIDE)

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PROJECT #	12972
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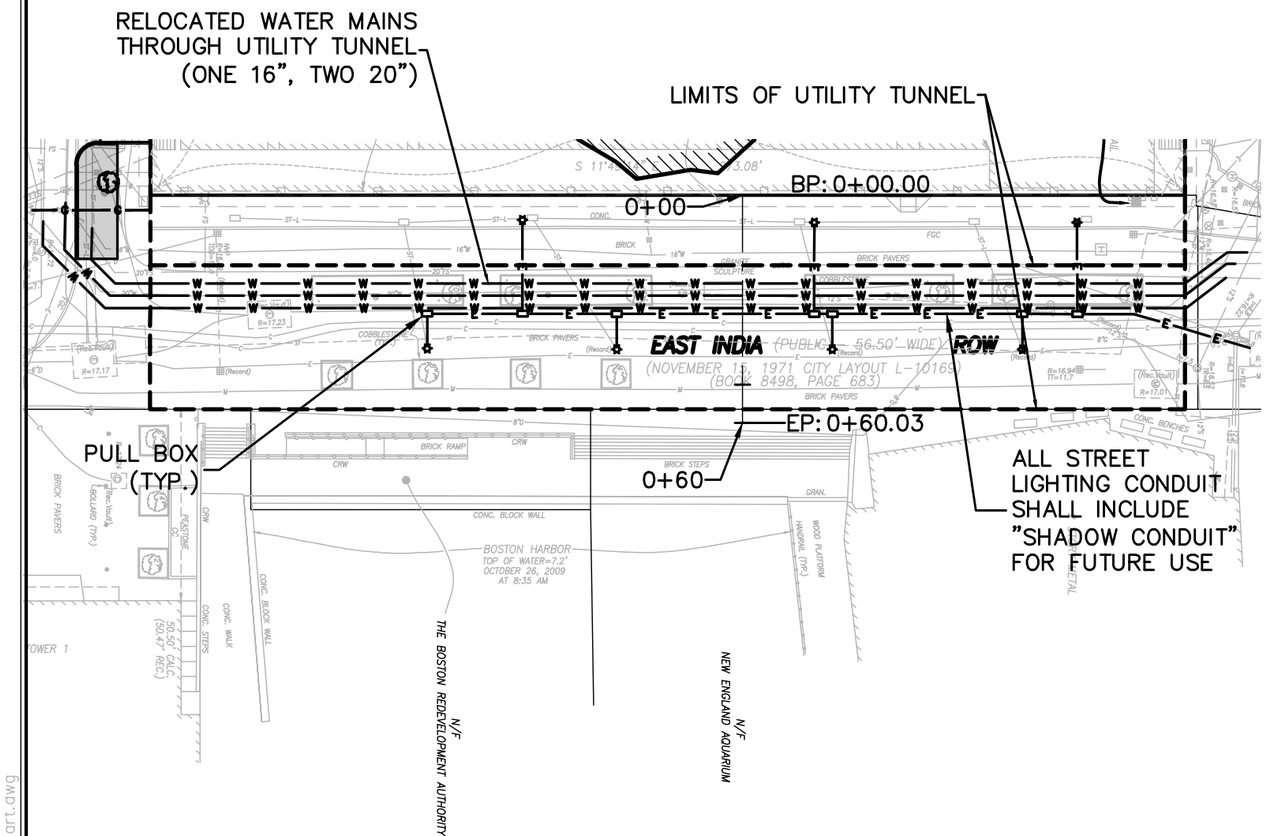
SCALE:	SEE PLAN
DATE:	1/15/2020
PROJECT MGR:	JMS
SURVEYOR:	FELDMAN
DRAFTED BY:	KAQ
CHECKED BY:	JMS

SHEET:
C-3



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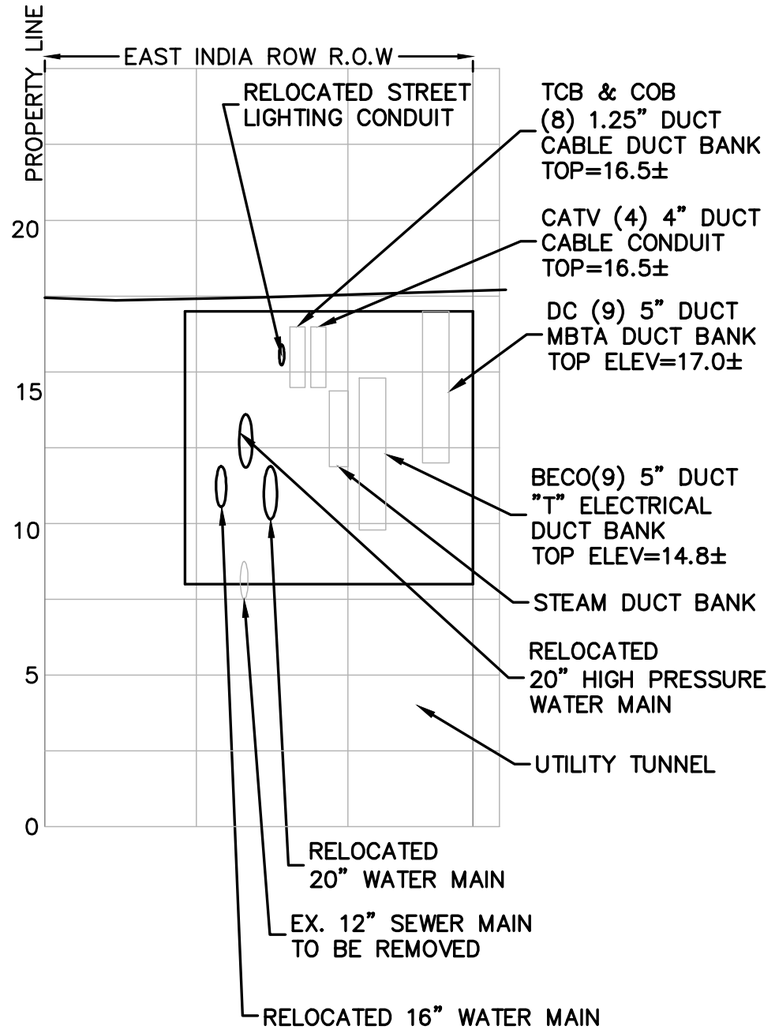

SCALE:
HORIZONTAL: 1" = 20'
20 10 0 20 40
5 2.5 0 5 10
VERTICAL: 1" = 5'

EAST INDIA ROW
(EAST SIDE)

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PROJECT #	12972
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SCALE:	SEE PLAN
DATE:	1/15/2020
PROJECT MGR:	JMS
SURVEYOR:	FELDMAN
DRAFTED BY:	KAQ
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SHEET:
C-4

Appendix F

Broadband Checklist

34				*01/21/2020 12:38:09*
		Form Publisher Template		
01/21/2020				

This is a simple template document automatically generated by Form Publisher.
Feel free to personalize it like any other Google Spreadsheet.

Questions list:				
Project Name::				
Project Address Primary: :				
Project Address Additional: :				
Project Contact (name / Title / Company / email / phone): :				
Expected completion date:				
Owner / Developer:	RHDC 70 East India LLC c/o The Chiofaro Company			
Architect:	Kohn Pedersen Fox Associates PC			
Engineer (building systems)::	Cosentini Associates			
Permitting::	Epsilon Associates, Inc.			
Construction Management:	TBD			
Number of Points of Entry:	Two Entry Locations			
Locations of Points of Entry:	Atlantic Avenue and Milk Street			
Quantity and size of conduits:	Four (4) at 4 inches each			
Location where conduits connect (e.g. building-owned manhole, carrier-specific manhole or stubbed at property line) :	TBD			
Other information/comments:				
Do you plan to conduct a utility site assessment to identify where cabling is located within the street? This information can be helpful in determining the locations of POEs and telco rooms. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.:	Yes			
Number of risers:	One			
Distance between risers (if more than one):	Not Applicable			
Dimensions of riser closets:	TBD, currently programmed at 6'X4'			
Riser or conduit will reach to top floor :	Yes			
Number and size of conduits or sleeves within each riser:	TBD			
Proximity to other utilities (e.g. electrical, heating):	Located in a dedicated room with core and other MEP elements			
Other information/comments:				
What is the size of the telecom room?:	TBD, currently programmed at 15' X 10', located above flood level			
Describe the electrical capacity of the telecom room (i.e. # and size of electrical circuits):	TBD, will be determined during detailed design			

Will the telecom room be located in an area of the building containing one or more load bearing walls?:	No			
Will the telecom room be climate controlled? :	Yes			
If the building is within a flood-prone geographic area, will the telecom equipment will be located above the floodplain?:	Yes			
Will the telecom room be located on a floor where water or other liquid storage is present?:	Yes			
Will the telecom room contain a flood drain?:	Unknown			
Will the telecom room be single use (telecom only) or shared with other utilities?:	Yes			
Other information/comments:				
Will building/developer supply common inside wiring to all floors of the building? :	Yes			
If yes, what transmission medium (e.g. coax, fiber)? Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.:	TBD based on detailed design			
Is the building/developer providing wiring within each unit? :	Unknown			
If yes, what transmission medium (e.g. coax, fiber)? Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.:	TBD based on detailed design			
Will the building conduct any RF benchmark testing to assess cellular coverage?:	Unknown			
Will the building allocate any floor space for future in-building wireless solutions (DAS/small cell/booster equipment)?:	Unknown			
Will the building be providing an in-building solution (DAS/ Small cell/ booster)? :	Unknown			
If so, are you partnering with a carrier, neutral host provider, or self-installing?:				
Will you allow cellular providers to place equipment on the roof?:	No			
Will you allow broadband providers (fixed wireless) to install equipment on the roof? :	No			
Will you allow broadband providers (fixed wireless) to install equipment on the roof? :	No			
Date contacted:				
Does Comcast intend to serve the building?:	Unknown			
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Date contacted:				

Does RCN intend to serve the building?:	Unknown			
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Date contacted:				
Does Verizon intend to serve the building?:	Unknown			
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Date contacted:				
Does netBlazr intend to serve the building?:	Unknown			
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Date contacted:				
Does WebPass intend to serve the building?:				
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Date contacted:				
Does Starry intend to serve the building?:	Unknown			
Transmission Medium:	Unknown			
If no or unknown, why?:	This outreach will begin with the detailed design phase of the Project			
Do you plan to abstain from exclusivity agreements with broadband and cable providers? :	Unknown			
Do you plan to make public to tenants and prospective tenants the list of broadband/cable providers who serve the building?:	Yes			