PROJECT NOTIFICATION FORM

PROPOSED MIXED-USE DEVELOPMENT
415 WILLIAM F. MCCLELLAN HIGHWAY & BOARDMAN STREET
BOSTON, MASSACHUSETTS

SUBMITTED TO:
BOSTON REDEVELOPMENT AUTHORITY

SUBMITTED BY:
MC-EB REALTY LLC
C/O FIRST BRISTOL CORPORATION
10 NORTH MAIN STREET
FALL RIVER, MA 02722

PREPARED BY:

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772

IN ASSOCIATION WITH:

BMA ARCHITECTURAL GROUP
GZA
NUTTER MCCLENNEN & FISH LLP
SUFFOLK CONSTRUCTION
TECH ENVIRONMENTAL
VANASSE & ASSOCIATES, INC.

SEPTEMBER 17, 2012

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352 Turnpike Road
Southborough, MA 01772
PHONE 508.480.9900
FAX 508.480.9080 fax

September 17, 2012

Boston Redevelopment Authority
Attn: Mr. Peter Meade, Director
Boston City Hall, 9th Floor
Once City Hall Square
Boston, MA 02201

RE: Project Notification Form
Proposed Mixed-Use Development
415 McClellan Highway, East Boston, MA

Dear Director Meade:

We are pleased to submit the attached Project Notification Form for the Proposed Mixed Use Development at 415 McClellan Highway in East Boston, Massachusetts ("the Property") on behalf MC-EB Realty LLC ("The Proponent").

The Proponent, MC-EB Realty LLC, represents the integrated and proven development experience of J. Karam Management, Inc. and its affiliate First Bristol Corporation, teamed with Marshall Development LLC and its affiliate Marshall Properties, Inc. MC-EB Realty LLC and its principals have collectively been responsible for the development of more than 4 million square feet of hotels, shopping centers and office buildings throughout New England. MC-EB Realty LLC acquired the fee interest in the Property on January 18, 2012.

The Proponent seeks to develop a mixed-use Project consisting of a 177-room business hotel, two restaurant/retail sites; associated entry drives, parking areas containing a total of 346 spaces, and pedestrian walks, landscape and lighting. The Property is located at the corner of McClellan Highway and Boardman Street, in an urban commercial and residential area, and consists of approximately 6 acres of vacant land previously used by the United States Navy as a fuel storage depot.

The proposed development will realize a total of 112,830 square feet of building area, including the 102,525 square foot five-story hotel, a 4,034 square foot one-story retail space and a 6,270 square foot one-story restaurant.

The Project will provide a number of public benefits to the City of Boston, and in particular to the residents of East Boston. The Project has been carefully designed to be sensitive to its residential abutters and also accommodate proposed infrastructure upgrades, and will revitalize a long vacant site into a vibrant mixed use development.

According to Map 3C East Boston Neighborhood Zoning District (the "Zoning Map"), the Property is located in its entirety within the McClellan Highway Economic Development Area ("EDA") of the East Boston Neighborhood Zoning District, the relevant provisions of which are set forth in Article 53 of the Code. According to Section 53-24 of the Code, the purposes of an EDA are to "encourage economic

growth, ... including commercial activity, in a manner that is sensitive to the needs and interest of the community". The express purposes of the McClellan Highway EDA are to provide for opportunities for economic growth which would benefit from the "area's close proximity to the City, the international airport, and major highway access." The uses which are allowed as of right within the McClellan Highway EDA include "hotel", "restaurant" (with the exception of drive-in and "large" takeout restaurants which are "conditional" uses), "general retail business" and "local retail business uses", as well as accessory uses, including parking which are accessory thereto.

According to Section 53-44 of the Code, the Property is within an area which is eligible for development pursuant to the terms of a Planned Development Area ("PDA") Plan prepared in accordance with the terms of Article 80C of the Code. The Property does not appear to be located within any other zoning district, including a special purpose overlay district as that term is understood in the Code and shown on the Zoning Map.

On behalf of MC-EB Realty LLC, we look forward to working with you and other representatives of the BRA, members of the East Boston community – including our neighbors and the Impact Advisory Group when appointed, Mayor Menino, Councilor LaMattina, Senator Petruccelli, Representative Basile and other elected and appointed officials, and other City agencies to undertake the review of this project. We think that this Project represents a positive contribution to the economic health of the East Boston neighborhood, and we are excited and enthusiastic about the possibilities the redevelopment of the Property will bring.

Sincerely,

BOHLER ENGINEERING

Matthew D. Smith, P.E.

Matthew J. Mrva, R.L.A.

Enclosures

Cc: ENF Distribution List
James J. Karam, MC-EB Realty LLC
Mary T. Marshall, Esq., Nutter, McClellan and Fish LLP

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PNF Cover Letter.doc

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PROJECT NOTIFICATION FORM

415 William F. McClellan Highway & Boardman Street
East Boston, MA

Appendix

1.0 SUMMARY

1.1 Project Identification & Summary

Project Name: Proposed Mixed Use Development

Location: 415 William F. McClellan Highway and Boardman Street
Parcel 3, Lot ID 0100522000
Suffolk County
East Boston, MA

The proposed development is located at 415 McClellan Highway in East Boston at the corner of McClellan Highway and Boardman Street, in an urban commercial and residential area (see figures ***1-1a USGS Locus Map 1" = 2000; 1-1b USGS Locus Map 1" = 1000; 1-2a Aerial Locus Map 1"=2000'; 1-2b Aerial Locus Map 1"=1000')***

The site consists of approximately 6 acres of vacant land fenced with gated access from Boardman Street, and was part of a larger property previously used by the United States Navy as a fuel storage depot. The uses surrounding the site include (refer to Figures 1-1 and 1-2): residences on Boardman Street to the northeast, McClellan Highway to the northwest, beyond which is an airport park and ride facility (Logan Park-n-Ride) and a car rental business (Avis); Orient Heights Community Youth Center, Noyes Playground, and a condominium complex to the southeast; and a car rental business (Avis, 375 McClellan Highway) to the southwest.

The proposed development will realize a total of 112,830 square feet of building area, including a 102,525 square foot five-story hotel, a 4,034 square foot one-story retail space and a 6,270 square foot one-story restaurant. The hotel is intended to be an all-suites business hotel, and will contain 177 rooms.

Development Team:
MC-EB Realty LLC represents the integrated and proven development experience of J. Karam Management , Inc. and its affiliate First Bristol Corporation, teamed with Marshall Development LLC and its affiliate Marshall Preperties, Inc. MC-EB Realty LLC and its principals have collectively been responsible for the development of more than 4 million square feet of hotels, shopping centers and office buildings throughout New England. MC-EB Realty LLC acquired the fee interest in the Property on January 18, 2012.

The Proponent has enlisted a team of planners, engineers, attorneys, and consultants to assist them with Project development. The Project Team is listed below:

Proponent:	MC-EB Realty LLC c/o First Bristol Corporation P.O. Box 2516 10 North Main Street Fall River, MA 02722 James J. Karam (508) 679-1180 jimk@firstbristol.com Jeffery T Karam (508) 679-1180 jeffk@firstbristol.com
	Marshall Properties 700 Narragansett Park Drive East Providence, RI 02914 Lianne Marshall (401) 725-9370 lmarshall@marshallpropertiesinc.com
Site Engineer and Landscape Architect:	Bohler Engineering 352 Turnpike Road Southboro, MA 01772 Matt Smith, P.E. (508) 480-9900 msmith@bohlereng.com Matt Mrva, R.L.A. (508) 480-9900 mmrva@bohlereng.com
Architect:	BMA Architectural Group, P.C. 12 Middle Street Amherst, NH 03031 Rolf Biggers, A.I.A. (603) 673-1991 rolf@bmaworld.com Marcus Parkkonen (603) 673-1991 marcus@bmaworld.com
Environmental / Geo-Tech Engineer:	GZA 530 Broadway Providence, RI 02903 Derek Simpson, P.E. (401) 421-4140 derek.simpson@gza.com

Legal Counsel:	Nutter McClennen & Fish LLP Seaport West 155 Seaport Boulevard, Boston, MA 02210 William F. Kennedy, Esq. Mary T. Marshall, Esq. 617-439-2000 MMarshall@nutter.com
Construction Manager:	Suffolk Construction 65 Allerton Street Boston, MA 02119 Mark DiNapoli President - Northeast Division (617) 445-3500
Environmental Consultant:	Tech Environmental Hobbs Brook Office Park 303 Wyman Street, Ste. 295 Waltham, MA 02451 Marc C. Wallace, QEP (781) 890-2220 x30 mWallace@TechEnv.com
Traffic Engineer:	Vanasse & Associates, Inc. 10 New England Business Center Drive, Suite 314 Andover, MA 01810-1066 Jeffrey Dirk, P.E., PTOE (978) 474-8800 jdirk@rdva.com

1.2 Public Review

This Project Notification Form is being submitted to the Boston Redevelopment Authority in order to initiate Large Project Review in accordance with Article 80B of the Boston Zoning Code and Enabling Act (the "Code".) As discussed in greater detail herein, other Article 80 related review may be required in connection with the further review and approval of the Project. The Proponent intends to coordinate the City's Article 80 review of the Project with review required in accordance with the Massachusetts Environmental Policy Act and implementing regulations ("MEPA").

The Proponent looks forward to working with our East Boston neighbors, in particular the members of the Impact Advisory Group for the Project, Mayor Menino, Councilor LaMattina, Senator Petruccelli, Representative Basile and other elected and appointed officials, the Boston Redevelopment Authority, and other City agencies to undertake the review of this Project. The Project represents a positive contribution to the economic health of the East Boston neighborhood by virtue of the vibrant redevelopment of the Property.

1.3 Project Benefits

The Project will provide a number of public benefits to the City of Boston, and in particular to the residents of East Boston. The Project has been carefully designed to be sensitive to its residential abutters and also accommodate proposed infrastructure upgrades. Specific benefits include:

Redevelopment
- The Project will revitalize a long vacant site which was formerly used as a fuel depot into a vibrant mixed use site providing benefits to the East Boston neighborhood and the City as a whole.
- Creation of approximately 10,000 SF of restaurant and retail uses that will be open to the public and compatible with the community.
- Hotel and conference room facilities that will attract additional business travelers to the area.

Improvements to the Public Realm
- Enhanced streetscape on Boardman Street including sidewalks, trees, planters and lighting.
- Improvements to Traffic Management - Improved intersection function at Boardman Street / McClellan Highway intersection.
- Infrastructure - Accommodation for the future implementation of the infrastructure improvements in the area - e.g. Suffolk Downs redevelopment if and to the extent it goes forward

Increased Construction and Permanent Employment Opportunities
- Creation of new construction as well as permanent jobs in the City of Boston related to the hotel and restaurant industries

Tax Revenue
- Substantial new annual real estate taxes that will support City fire, police, schools and other services.

Linkage
- Under section 80B-7 of the Code, projects that require zoning relief and that will devote more than 100,000 square feet of space to "development impact uses," must make contributions to the City of Boston's Neighborhood Housing Trust and Neighborhood Jobs Trust. The Proponent will make both a housing contribution grant and a jobs construction grant to the Neighborhood Housing Trust and the Neighborhood Jobs Trust.

Sustainable Design
- The Proponent will incorporate sustainable design the Project, which will be designed to comply with the requirements of Article 37 of the Code and be LEED Certifiable.

1.4 Legal Information

A. Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments which are adverse to the Proposed Project.

B. History of Tax Arrears on the Property

The Proponent acquired the Property on January 18, 2012 and based upon its diligence at the time is not aware of any real estate taxes due and owing with respect to the Property. A review of the City of Boston Assessing Website indicates that no taxes are currently due and owing with respect to Parcel 0150022000.

C. Evidence of Site Control/Nature of Public Easements

The Proponent acquired the Property subject to existing easements of record. These easements include an easement granted in 1964 to the Commonwealth of Massachusetts by the then owner, the United States of America, to use operate and maintain then existing sewer lines. The Property is also subject to a grant of "Roadway Easements, Utility, Signage and Storage Tank Removal" which benefits land to the south and east of the Property, and impacts the ability to provide landscaping and other amenities along the easterly property boundary.

1.5 Permits and Approvals

The following permits are expected to be required for this Project:

FEDERAL	
U.S. Environmental Protection Agency	National Pollution Discharge Elimination System Notice of Intent for Construction General Permit
Federal Aviation Administration	Notice of Proposed Construction or Alteration
STATE	
Executive Office of Energy and Environmental	MEPA Review
Massachusetts Historical Commission	Historic Register Review
Massachusetts Department of Transportation, Highway Division	State Highway Access Permit and Traffic Signal Regulation
Massachusetts Aeronautics Commission	Airspace Review Form
LOCAL	
Boston Redevelopment Authority	Article 80B Large Project Review; Article 80C Planned Development Area Review
Boston Civic Design Commission	Design Review and Approval
Boston Zoning Commission	Possible Planned Development Area Approval
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Plan Street and Sidewalk Occupation Permits;

Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Construction Dewatering Permit; Sewer Extension/ Connection Permit; Stormwater Connection
Public Works Department/Public Improvement Commission	Streetscape Improvements Curb Cut Permits; Specific Repairs
City of Boston Inspectional Services Department	Building and Occupancy Permits
Parks Commission	Approval of Construction Within 100 Feet of a Park or Parkway

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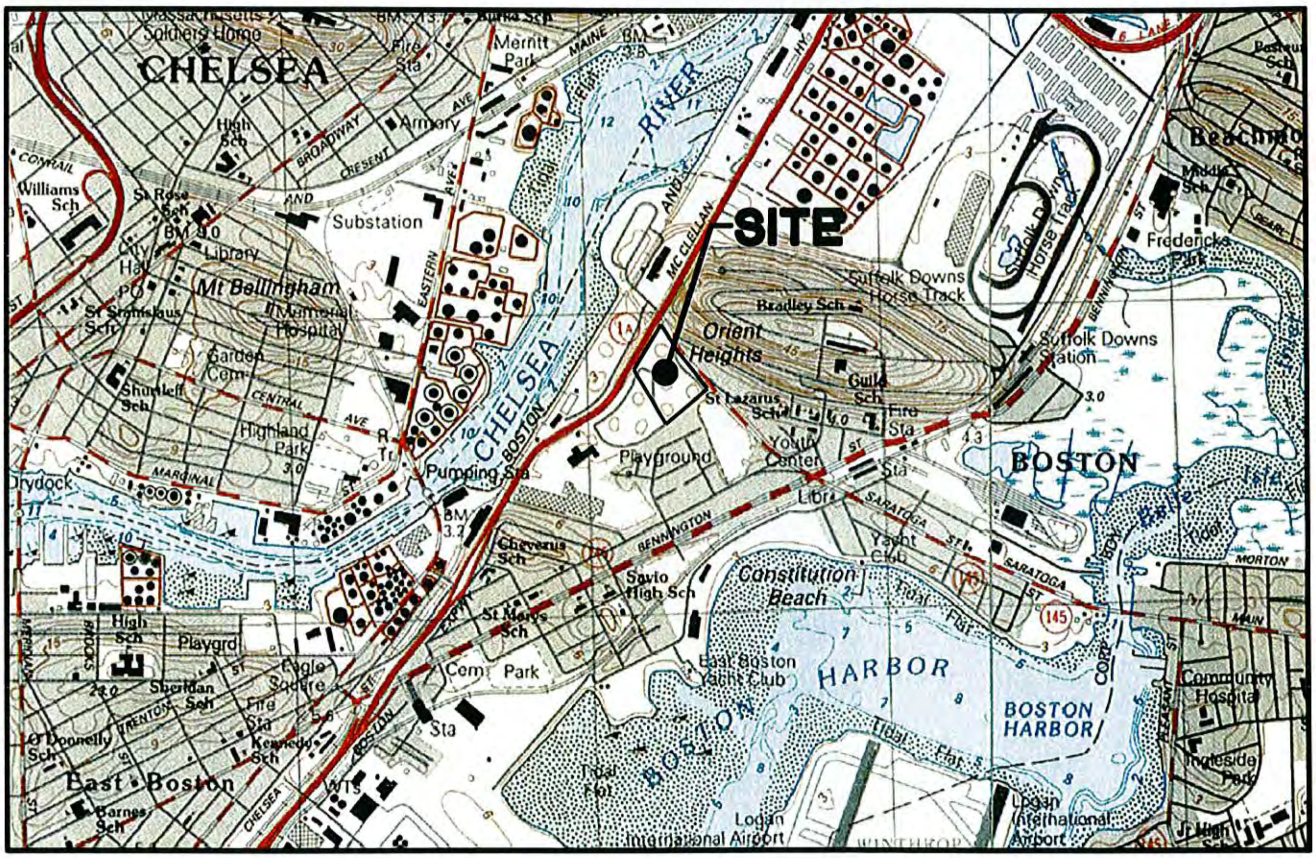

USGS QUADRANGLE MAP
1"=2000'±

PROPOSED MIXED USE DEVELOPMENT

PARCEL 3 LOT ID 0100522000
415 WILLIAM F MCCLELLAN HIGHWAY
CITY OF BOSTON
SUFFOLK COUNTY, MASSACHUSETTS

FIGURE 1-1A 2000 SCALE

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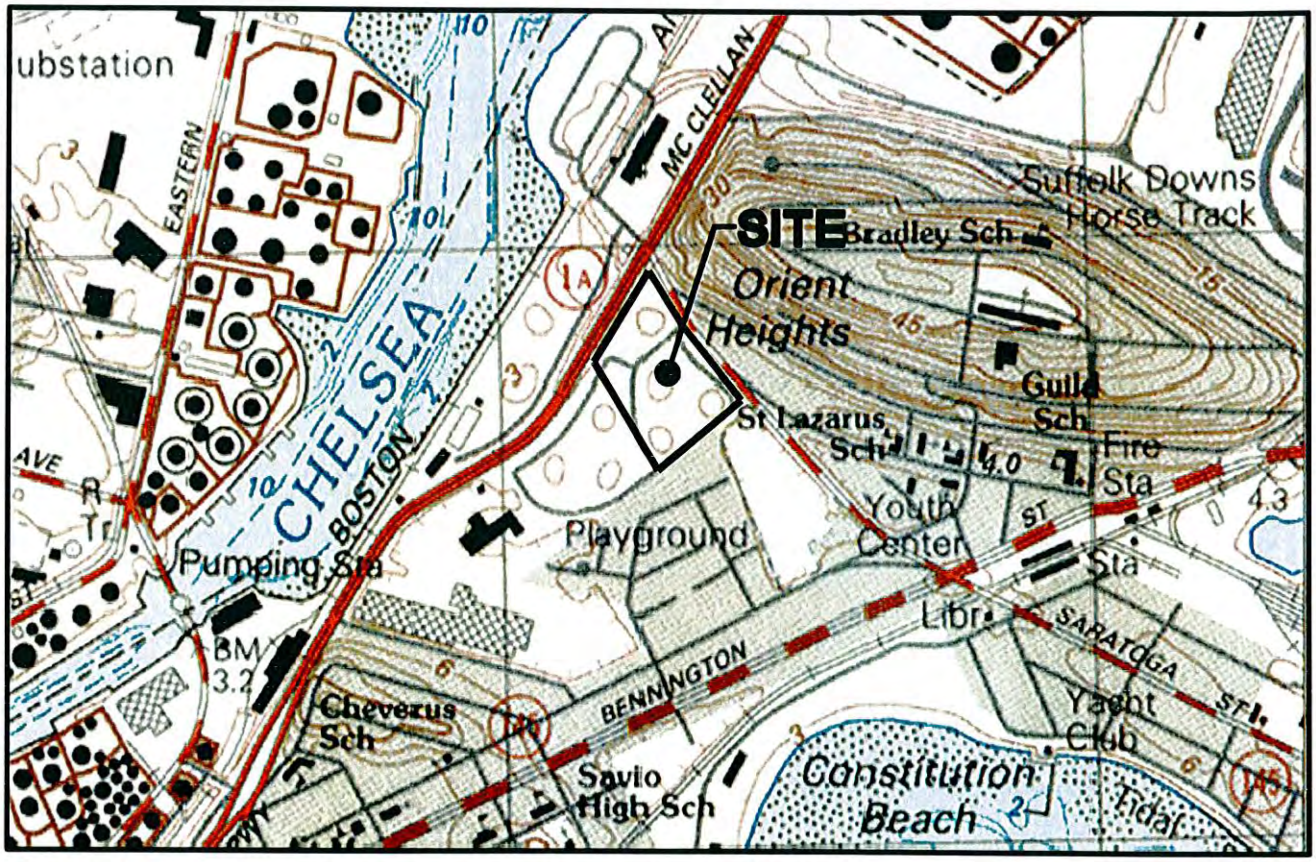

USGS QUADRANGLE MAP
1"=1000'±

PROPOSED MIXED USE DEVELOPMENT

PARCEL 3 LOT ID 0100522000
415 WILLIAM F MCCLELLAN HIGHWAY
CITY OF BOSTON
SUFFOLK COUNTY, MASSACHUSETTS

FIGURE 1-1B 1000 SCALE

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USGS AERIAL MAP

1"=2000'±

PROPOSED MIXED USE DEVELOPMENT

PARCEL 3 LOT ID 0100522000
415 WILLIAM F MCCLELLAN HIGHWAY
CITY OF BOSTON
SUFFOLK COUNTY, MASSACHUSETTS

FIGURE 1-2A 2000 SCALE

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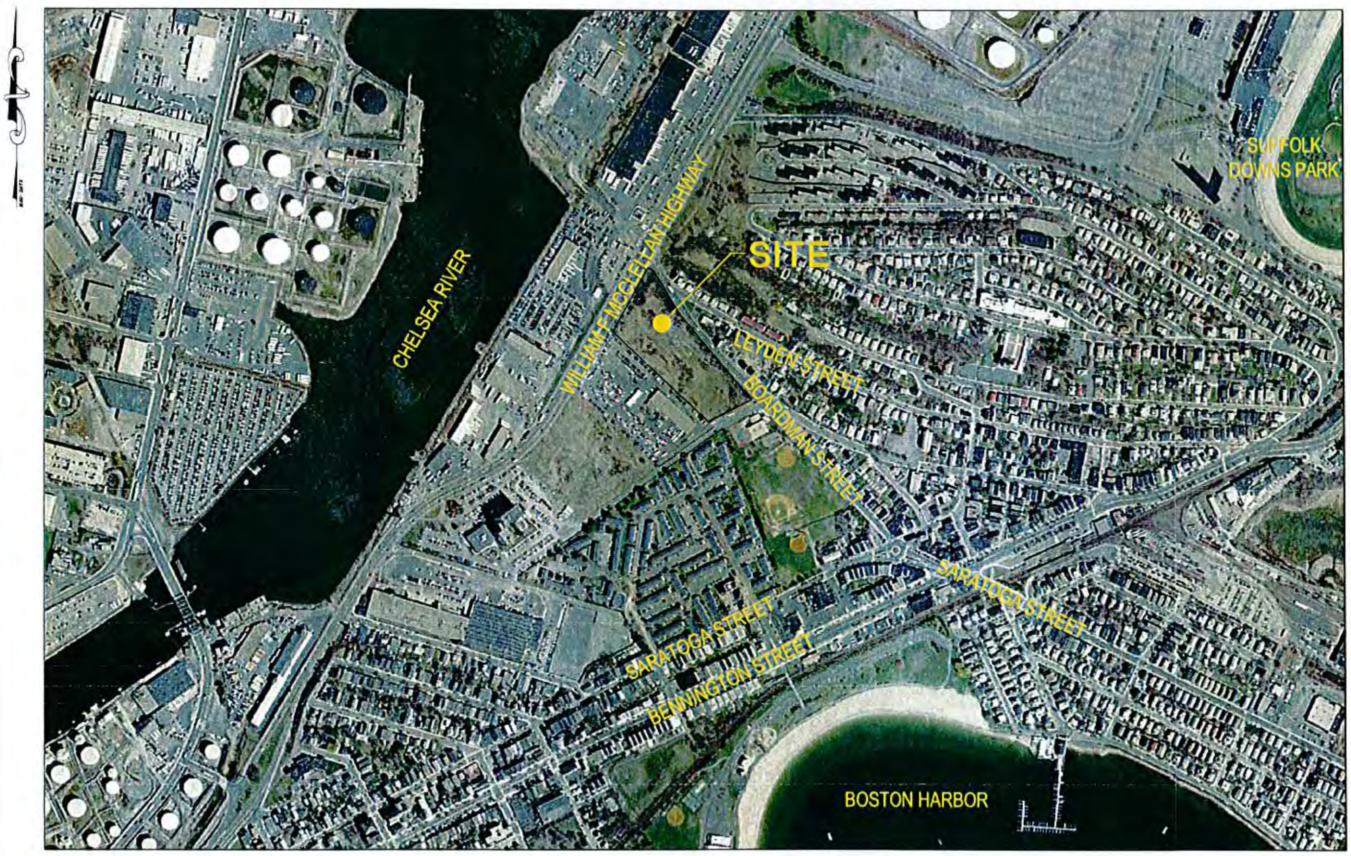


USGS AERIAL MAP
1"=1000'±

PROPOSED MIXED USE DEVELOPMENT

PARCEL 3 LOT ID 0100522000
415 WILLIAM F MCCLELLAN HIGHWAY
CITY OF BOSTON
SUFFOLK COUNTY, MASSACHUSETTS

FIGURE 1-2B 1000 SCALE

2.0 Project Description

2.0 Project Description

2.1 Existing Conditions

The Proponent intends to redevelop the currently vacant brownfields site into a mixed use development including hotel, retail and restaurant uses. The 6.2-acre Project site is located along McClellan Highway at the intersection of Boardman Street. Once home to a fueling depot for the US Navy with associated underground fuel oil storage tanks (UST's), this site has remained under-developed for years, surrounded by the Orient Heights Community Center to the east, a residential neighborhood and park space to the north, the McClellan Highway and commercial/industrial properties along the Chelsea River to the west and an Avis Car Rental facility to the south.

The concrete bases of the former UST's are still present below grade onsite. These tanks are intended to remain in place as the Project moves forward, and careful attention has been paid to the siting of the proposed structures to avoid encroachment into their footprints. In the late 1990'2, GZA conducted numerous borings and subsequent tests of onsite soils and groundwater that identified conditions typical of urban soil with no Reportable Concentrations. This resulted in GZA's issuance of a Class B-1 Remedial Action Outcome Statement for the site concluding that No Significant Risk or harm to human health, safety, public welfare, and the environment existed at the Site in August of 1998.

The easterly end of the site is encumbered by access easements to the benefit of properties to the south. Specifically, a 32' strip containing 8,300 SF± of land that is currently paved and provides a utility corridor and the right to pass and repass. This area is presently paved as shown on ***Figure 1-2a Aerial Locus Map*** and is anticipated to remain so with development. When combined, the easement and the existing tank locations restrict the amount of area on site available for development.

2.2 Proposed Project Description

The Proponent seeks to develop a mixed-use Project consisting of a 177-room business hotel, two restaurant/retail sites; associated entry drives, parking areas containing a total of 346 spaces, and pedestrian walks, landscape and lighting. Below is a summary of the building program:

Figure 2-1 Table of Uses

[illegible]	AREA (SF)	[illegible]	[illegible]
Project Site	269,339 SF		
Hotel		54 feet (5 stories)	102,525 SF
Retail / Restaurant 1		18 feet (1 story)	6,270 SF
Retail / Restaurant 2		18 feet (1 story)	4,035 SF
Total			112,830 SF
Parking			346 Spaces
Floor Area Ratio			0.41

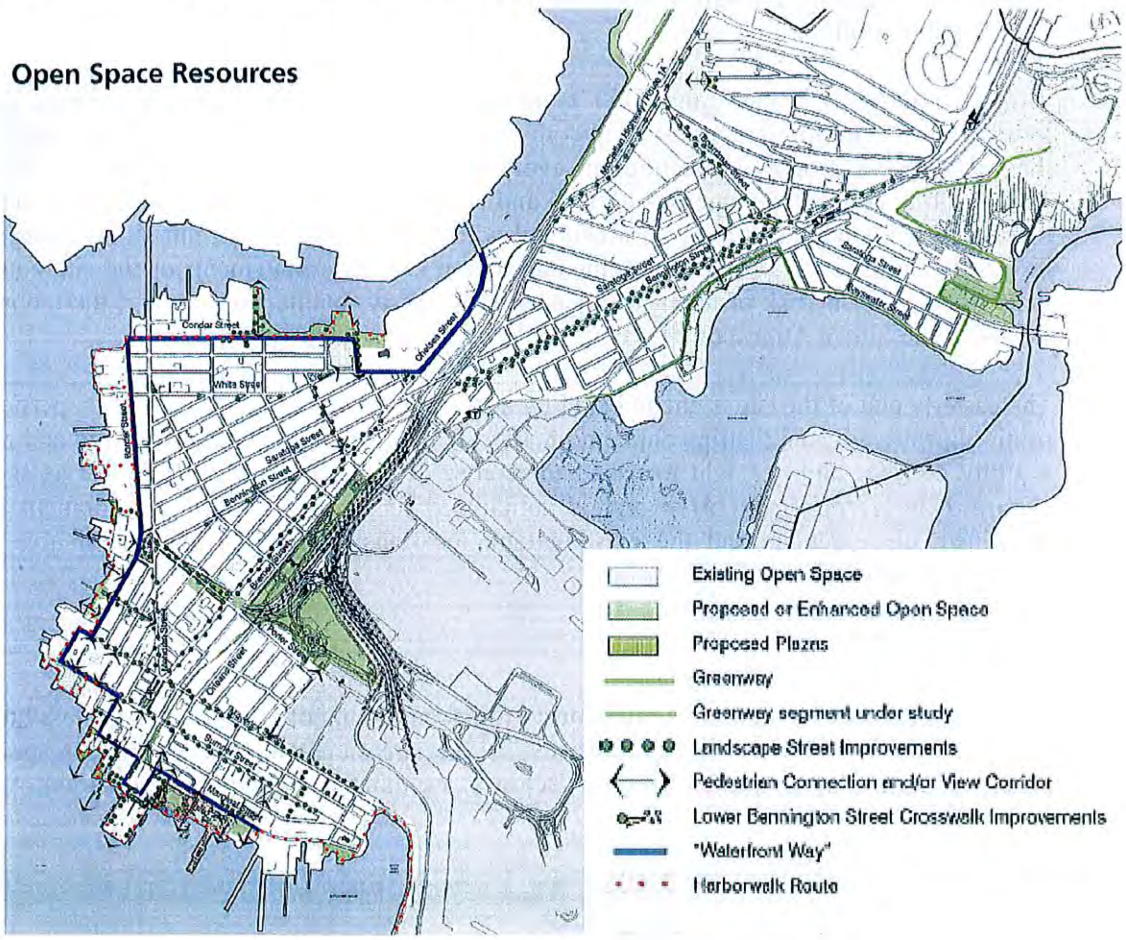
[1] As determined in accordance with the definition set forth in Article 2A of the Boston Zoning Code

2.3 Consistency with Planning and Zoning

1. East Boston Master Plan

The East Boston Master Plan calls for "Landscape Street Improvements" on Boardman Street as shown in Figure 2-2. The Project Proponent intends to provide new sidewalks, street trees, planters and lighting along the Boardman Street frontage, which will greatly enhance the pedestrian experience and comply with the Open Space Resources Plan as proposed in the Master Plan.

Figure 2-2 Excerpt from the East Boston Master Plan



2. Existing Zoning for the Property

According to Map 3C East Boston Neighborhood Zoning District (the "Zoning Map"), the Property is located in its entirety within the McClellan Highway Economic Development Area ("EDA") of the East Boston Neighborhood Zoning District, the relevant provisions of which are set forth in Article 53 of the Code. According to Section 53-24 of the Code, the purposes of an EDA are to "encourage economic growth, … including commercial activity, in a manner that is sensitive to the needs and interest of the community". The express purposes of the McClellan Highway EDA are to provide for opportunities for economic growth which would benefit from the "area's close proximity to the City, the international airport, and major highway access." The uses which are allowed as of right within the McClellan Highway EDA include "hotel", "restaurant" (with the exception of drive-in and "large" takeout restaurants which are "conditional" uses), "general retail business" and "local retail business uses", as well as accessory uses, including parking which are accessory thereto.

According to Section 53-44 of the Code, the Property is within an area which is eligible for development pursuant to the terms of a Planned Development Area ("PDA") Plan prepared in accordance with the terms of Article 80C of the Code. The Property does not appear to be located within any other zoning district, including a special purpose overlay district as that term is understood in the Code and shown on the Zoning Map.

3. Proposed Zoning for the Project.

As noted above, the Property is located within an area which is PDA-eligible in accordance with the terms and provisions of Article 53 of the Code, and qualifies for treatment as a PDA, given that it has an overall area of approximately 6.18 acres, well over the 1.0 acre minimum. The Proposed Uses for the Project are allowed as of right with in the McClellan Highway EDA, and consistent with the purposes of the EDA as described above. Preliminary consultation with the BRA has indicated that it may be possible to permit the redevelopment of the Property in accordance with the terms of an approved PDA Plan, which would allow for a mix of uses and proper sequencing of development. To the extent that further discussions indicate that it is appropriate to proceed forward with a PDA plan to obtain the necessary approvals for the Project, the Proponent will prepare and file a draft PDA plan with the BRA to initiate comment and review in accordance with the provisions of Article 80C of the Code.

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3.0 TRANSPORTATION

3.1 Transportation Access Plan

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact and Access Study (TIAS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a mixed-use commercial development to be located at 415 William F. McClellan Highway (Route 1A) in East Boston, Massachusetts (hereafter referred to as the "Project"). Access to the Project site will be provided by way of three (3) driveways as follows: a right-turn, entrance only driveway that will intersect the east side of Route 1A approximately 350 feet south of Boardman Street; a right-turn entrance only driveway that will intersect the south side of Boardman Street approximately 400 feet east of Route 1A; and a full access driveway that will intersect the south side of Boardman Street approximately 750 feet east of Route 1A. Secondary access to the Project site will be provided by way of a shared (with Avis Rental Car) access easement that is situated parallel to the east property line of the Project site; however, the Project has been designed with specific features to limit use of the easement by Project-related traffic.

This study was prepared in consultation with the Boston Redevelopment Authority (BRA), BTD and MassDOT; was performed in accordance with the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA)/MassDOT Guidelines for Environmental Impact Report/Environmental Impact Statement Traffic Impact Assessments (TIAs); and was conducted pursuant to the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports.

The full text of the ***Traffic Impact and Access Study*** is attached to this document in Appendix B.

3.2 Traffic Management

The Project includes the construction of a driveway (right-turn, entrance only) along the west side of William F. McClellan Highway (Route 1A); the widening of the Boardman Street east leg of the Route 1A/Boardman Street intersection to provide an additional westbound travel lane (3 lane approach); and the modification/upgrade of the existing traffic signal system at the Route 1A/Boardman Street intersection to accommodate the widening of Boardman Street.

A comprehensive Transportation Demand Management (TDM) program that includes specific measures that are designed to encourage the use of public transportation services and promote pedestrian and bicycle trips to the Project will be implemented. The Project site is served by public transportation services provided by the MBTA, including fixed-route bus service (Route 120, *Orient Heights – Maverick Station via Bennington Street*) which also links the Project site to the Blue Line subway system via Orient Heights Station. Specific measures that will be implemented in conjunction with the Project and are designed to encourage pedestrian and bicycle trips and the use of public transportation include the following and will be coordinated through an on-site transportation coordinator:

Pedestrian Accommodations

- Reconstruction of sidewalks along the Project frontage
- Addition of sidewalks within the Project site linking the proposed buildings and the sidewalk infrastructure along Route 1A and Boardman Street
- Upgrading the pedestrian traffic signal equipment, timing and phasing as necessary at the Route 1A/Boardman Street intersection
- providing pedestrian scale lighting within the Project site

Bicycle Accommodations

- Incorporating bicycle detection into the traffic signal system at the Route 1A/Boardman Street intersection to the extent feasible and appropriate
- Installing bicycle racks proximate to building entrances

Public Transportation

- Providing on-site sale of Charlie Cards
- Posting public transportation schedules and fare information in centralized locations
- Promoting use of public transportation to hotel guests in print and website based materials
- Providing links to the MassRIDES and the MBTA websites from the hotel website
- Participation in the MBTA Corporate Pass Program
- Providing a periodic newsletter or bulletin about commuting options
- Participation in MassRIDES NuRide program which rewards employees that chose to use alternative modes of transportation to single-occupant vehicles

In addition, a "guaranteed-ride-home" will be offered to all employees that commute to the Project by means other than private automobile.

3.3 Parking Management

The 346 parking spaces proposed for the Project will be sufficient to handle all of the parking requirements of the 177 room hotel & restaurant and retail uses with up to 350 seats planned. No special management measures in terms of valet parking or shared parking are currently planned.

3.4 Construction Management

An important component of the transportation plan for the Project is an effective series of measures that are designed to minimize traffic flow and safety impacts during the Project's construction phase. Summarized below are several measures which will be undertaken during the construction phase of the Project.

- The Project Proponent and the general contractor will coordinate with MassDOT and BTD regarding all transportation-related construction impacts of the Project. Designated truck routes will be established to govern how trucks access the Project site. The goal of this commitment is to have construction trucks use only the regional highway system (i.e., Route 1A) and to avoid traveling through residential areas to the extent practical.
- Secure fencing and sidewalk staging protection (if necessary) will be provided in areas affected by construction to protect nearby pedestrian and vehicular traffic. Gate entrances into the construction area will be determined jointly with MassDOT and BTD.

- During construction activities, as required by MassDOT and/or BTD, a police detail will be employed to manage pedestrian and vehicle traffic at the construction access to the Project site.
- Secure on-site storage will be provided for tools and equipment in an effort to minimize construction-related vehicle trips to the site.
- Full or partial street closures will be avoided to the extent possible. Should a partial street closure be necessary in order to off-load construction materials and/or complete construction-related activities, the closure will be limited to off-peak periods as defined by MassDOT and BTD. Prior to the implementation of any planned construction activities within the public right-of-way, the contractor will submit to MassDOT andBTD for review and approval a traffic and pedestrian management plan.
- Construction worker parking will be provided within the Project site and expressly prohibited along Route 1A, Boardman Street or neighborhood streets.
- The general contractor will implement appropriate measures to encourage ridesharing and the use of public transportation services by employees and subcontractors working on the Project.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be constructed with minimal impact on the roadway system.

3.5 Monitoring Element

The Project Proponent will conduct a post-development traffic monitoring and employee survey program in order to evaluate the success and to refine the elements of the TDM program. The monitoring program will include obtaining traffic volume information at the driveways serving the Project and an employee and hotel guest survey of commuting modes. The results of the annual monitoring program will be provided to the BRA, the BTD and MassDOT. The monitoring program will commence upon full completion and occupancy of the Project and will continue for a period of 2-years thereafter.

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4.0 Environmental Protection Component

4.0 ENVIRONMENTAL PROTECTION COMPONENT

4.1 Wind

Analysis of pedestrian-level wind impacts is typically required under BRA Article 80 guidelines if a proposed building is over 150 feet tall, or 100 feet tall and at least two times higher than the adjacent building. As the proposed Project is 54 feet tall, it is not anticipated that a wind impact analysis will be required.

4.2 Shadow

A shadow analysis is required under the BRA Article 80 guidelines in order to indicate the shadow impact of the proposed Project. It is anticipated that the proposed Project will cast some shadow on adjacent streets. The Proponent intends to conduct a full shadow study for the Project and report the results in the DPIR.

4.3 Daylight

The purpose of a daylight analysis is to estimate the extent to which a proposed Project blocks daylight from reaching public streets in the immediate vicinity of the Project site. The analysis is performed for no-build, build, and as-of-right conditions to calculate the percentage of skydome that is obstructed by the proposed Project. The Project Site is currently undeveloped and contains a temporary landscaped open space. The existing land use surrounding the Project site includes Avis Car Rental to the south, Route 1A to the west and the Orient Heights Community Center to the east. Following construction of the Project, some daylight obstruction will occur along Boardman Street. A separation of approximately 125 feet between the proposed hotel and the north side of Boardman Street will significantly reduce the perception of diminished daylight. The daylight impacts will be analyzed using the Boston Redevelopment Authority Daylight Analysis ("BRADA") computer program, and the results will be reported in the DPIR.

4.4 Solar Glare

Analysis of solar glare impact on potentially affected streets, public open spaces and pedestrian areas is required by the BRA, on a case-by-case basis, to determine the potential for visual impairment or discomfort due to reflective spot glare. The analysis includes evaluating the potential for solar heat buildup in any nearby buildings receiving reflective sunlight from the proposed Project, if applicable.

The Project design does not include the use of reflective glass or other reflective materials on the building facades that would cause adverse solar glare impacts. The proposed Project design will include windows that will be low-E, argon filled units or equivalent that will maximize visible light into the buildings, but minimize reflective glare. It is not anticipated, given the building materials as noted, that a solar glare analysis will be required. Should other reflective materials be proposed as the Project design advances, a solar glare study will be prepared as part of the DPIR.

4.5 Air Quality (Microscale Carbon Monoxide and Heating and Mech Systems Air Quality)

The City of Boston is currently classified as being in attainment of the Massachusetts and National Ambient Air Quality Standards ("NAAQS") for all of the criteria air pollutants except ozone (see Table 4-1). These air quality standards have been established to protect the public health and welfare in ambient air, with a margin for safety.

Figure 4-1 MASSACHUSETTS AND NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Averaging Time	NAAQS (μg/m³)
SO_2	1-hour^P 3-hour^S 24-hour^P Annual^P (Arithmetic Mean)	196^a 1,300^b 365^b 80
CO	1-hour^P 8-hour^P	40,000^b 10,000^b
NO_2	1-hour^P Annual$^{P/S}$ (Arithmetic Mean)	188^c 100
PM_{10}	24-hour$^{P/S}$	150^d
$PM_{2.5}$	24-hour$^{P/S}$ Annual$^{P/S}$ (Arithmetic Mean)	35^e 15^f
O_3	8-hour$^{P/S}$	147^g
Pb	Rolling 3-Month Avg.$^{P/S}$ Calendar Quarter$^{P/S}$ (Arithmetic Mean)	0.15 1.5

P = primary standard; S = secondary standard.
[a] 99th percentile 1-hour concentrations in a year (average over three years).
[b] One exceedance per year is allowed.
[c] 98th percentile 1-hour concentrations in a year (average over three years).
[d] Annual PM_{10} standard was revoked in 2006.
[e] 98th percentile 24-hour concentrations in a year (average over three years).
[f] Three-year average of annual arithmetic means.
[g] Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.075 ppm (147 ug/m^3) (effective May 27, 2008).

The BRA requires a mesoscale air quality analysis if a Project will generate more than 10,000 vehicle trips/day. It is anticipated that the Project will generate approximately 2,240 new vehicle trips, which is below the mesoscale air quality analysis threshold (See Section 3.0 Transportation). Therefore, a mesoscale analysis will not be performed as part of the DPIR.

The BRA requires a microscale air quality analysis for any intersection in the Project study area where: 1) the roadways or intersections existing level-of-service ("LOS") operates at D, E or F or the Project traffic reduces the LOS to D, E or F; 2) the Project generates a 10% or greater increase in traffic on nearby roadways (unless the increase in traffic volume is less than 100 vehicles per hour) or 3) the Project will generate 3,000 or more new average daily trips. For such roadway and intersections, a microscale air quality analysis is required to examine the CO concentrations at sensitive receptors near the intersection.

As stated above, the Project will generate less than 3,000 average daily trips, but the signalized intersection of Route 1A at Boardman Street is operating at or over capacity (defined as a LOS E or F, respectively) during the weekday commuter peak hours independent of the Project; therefore, a microscale air quality analysis will be performed and the results reported in the DPIR. Although the increase in traffic associated with the Project will be minor, the Proponent is proposing traffic mitigation measures to improve operating conditions at the intersection to reduce the impact of the Project. These improvements will be included in the microscale air quality analysis.

The Project will include mechanical heating and ventilation systems that may produce minor air quality impacts, and will comply with current standards for air emissions regulated by the MassDEP.

In addition to the microscale analysis, a cumulative impact analysis will be conducted for comparison to the NAAQS for carbon monoxide (CO). This analysis will address emissions from the Project's mechanical heating system and emergency generator. Worst case maximum predicted impacts from these sources will be added to monitored background CO values obtained from the MassDEP air monitoring data, for the most recent available, complete, three-year period (2009-2011), that are considered to be representative of the Project area. The cumulative modeling results for the stationary sources plus monitored background values will be compared to the CO one-hour and eight-hour NAAQS.

Construction period air quality impacts and mitigation are discussed below in Section 4.12.

4.6 Water Quality and Stormwater Management

The Project site is a previously developed property with asphalt pavement, gravel surfaces, and minimally vegetated areas typical of a vacant, urban property. While the Project will result in increased impervious area on site compared with the existing condition, the Project will allow for substantive improvement over the existing condition, and will include new buildings, parking and circulation areas, and landscape improvements throughout the Project site. Stormwater runoff will be collected on site in drainage structures with mitigation measures, such as deep sump catch basins and oil/sand separators, to improve water quality. Collected runoff will be detained on site to promote groundwater recharge to the maximum extent practicable given site soil conditions. Excess runoff not infiltrated on site will require a connection to the BWSC system, as further discussed in Section 7.4. A stormwater pollution prevention plan will be implemented for all construction activities and a long term operation and maintenance plan will implemented to maintain the improvements over the life of the Project. Improvements to stormwater management and water quality will be fully discussed in the DPIR.

4.7 Flood Zones/Wetland Resource Areas

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the City of Boston (Community Panel Number 25025C 0019G) was reviewed to determine if the

Project lies within a flood hazard zone. The Project site is located within a designated Zone C, Area of Minimal Flooding, and the Project will not lead to an increased flood hazard risk (Refer to Figure 4-2).

The Project consists of previously developed land and does not contain any jurisdictional wetland areas, Areas of Critical Environmental Concern or State Certified Vernal Pools. Likewise, the Project site is not included on the list of either Priority Habitats for State-Listed Rare Species of the list of Estimated Habitats of Rare Wildlife.

Figure 4-2 FEMA Map

4.8 Groundwater

Based on monitoring well gauging completed on November 4, 2011 in the pre-existing and recently completed monitoring wells (installed in geotechnical borings), depth to groundwater at the Site was measured at between approximately 1.5 to 5.5 feet below the ground surface (bgs). A level survey was conducted to establish the relative elevations of the monitoring wells and ground surface on the Site at each well. From the elevation survey and measured depths to groundwater, the groundwater elevations at each monitoring well were computed as shown in Figure 4-3. The data shows elevations decreasing from the westerly corner of the Site (GZ-10) towards the easterly side of the Site; suggesting a general easterly groundwater flow direction across the Site. It should be noted that localized flow directions in the area of the Site may also vary as a result of underground utilities or heterogeneous subsurface conditions. Subsequent references to upgradient and downgradient properties are based on the measured easterly groundwater flow direction.

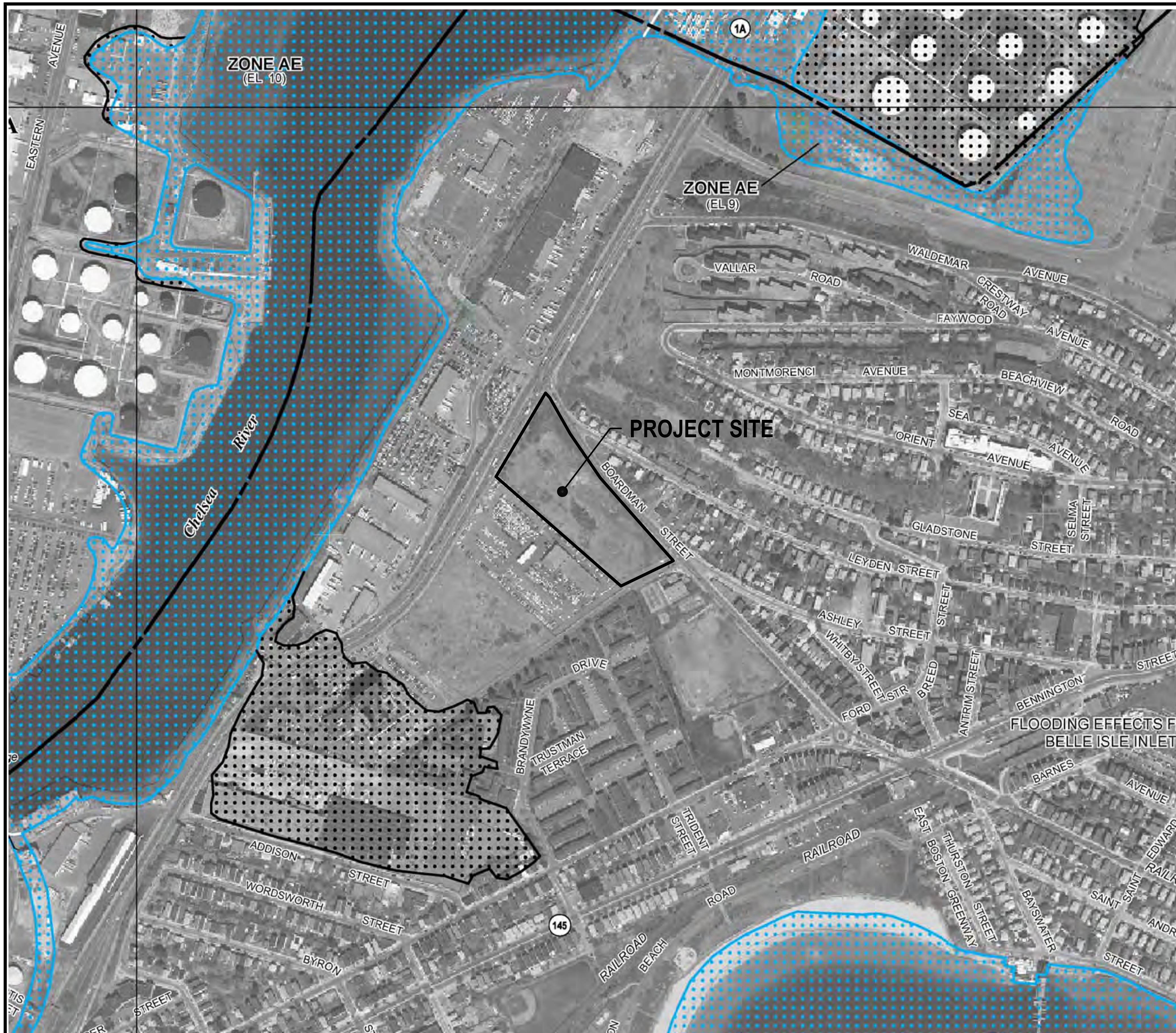
Figure 4-3 Groundwater Elevation Survey

Well ID	Measuring Point	Ground Surface Elevation (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
				Date: November 4, 2011	
GZ-1	PVC	100.77	102.42	5.34	97.08
GZ-3	PVC	104.32	106.73	8.41	98.32
GZ-4	PVC	102.39	104.34	5.60	98.74
GZ-5	PVC	101.45	103.52	8.19	95.33
GZ-7	PVC	100.59	102.75	7.13	95.62
GZ-9	PVC	98.66	99.92	3.85	96.07
GZ-10	PVC	103.97	105.68	6.46	99.22
MW-B2	PVC	104.58	N/S	N/A	N/A

Notes:
1. All monitoring wells were surveyed at the top of PVC and Ground Surface
2. Was not able to locate GZ-8, GZ-2 or GZ-2A. GZA was not able to survey GZ-6 due to thick vegetation.
3. N/A = not applicable; N/S = not surveyed

J:\15,000-16,999\15234\15234-21.CML\groundwater elevation survey- Appendix F\[11-4-11, gw elev survey_JJR.xlsx]Gauging Table

Temporary construction dewatering will be required during excavation for the below grade space. Intermittent pumping will be used as needed to allow for construction activities to take place.



MAP SCALE 1" = 500'

250 0 500 1000 FEET

METE

NATIONAL FLOOD INSURANCE PROGRAM

NFIP

PANEL 0019G

FIRM

FLOOD INSURANCE RATE MAP

SUFFOLK COUNTY, MASSACHUSETTS

(ALL JURISDICTIONS)

PANEL 19 OF 151

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0019	G
CHELSEA, CITY OF	250287	0019	G
REVERE, CITY OF	250288	0019	G
WINTHROP, TOWN OF	250289	0019	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
25025C0019G

EFFECTIVE DATE
SEPTEMBER 25, 2009

Federal Emergency Management Agency

BOHLER ENGINEERING

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

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REVISIONS:

REV:	DATE:	COMMENT:	BY:

PROJECT No.:	W050623
DRAWN BY:	EGD
CHECKED BY:	MJM/MDS
DATE:	08/30/12
SCALE:	AS NOTED
CAD I.D.:	W111073cd4_PNF.dwg

PROJECT:
PROPOSED MIXED USE DEVELOPMENT
415 WILLIAM F. McCLELLAN HWY
EAST BOSTON, MA

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SHEET TITLE:
FEMA MAP

SHEET NUMBER:
4-2
OF 1

REVISION 0 - 8/30/12

Effluent generated during temporary construction dewatering will be chemically tested and discharged in compliance with applicable regulations and discharge permits. This effluent will be infiltrated into the ground where possible, and will be monitored for quality during construction as part of the discharge permit requirements.

4.9 Geotechnical Impact

A. Subsurface Conditions

GZA completed a geotechnical report in November 2011 entitled *Preliminary Geotechnical Engineering Report,* identifying subsurface conditions found on site. Excerpts from that report are provided below.

> Subsurface soil conditions encountered in the explorations generally consisted of intermittent topsoil over fill over intermittent organic and/or sand layers over natural clay overlying glacial till and possible bedrock.
>
> The soil strata encountered in the explorations are described below in further detail. The depths, thicknesses, and elevations referenced herein should be considered approximate.
>
> *Topsoil* – Up to about 1 foot of topsoil was encountered in borings B-1 and B-4. The topsoil generally consisted of brown to dark brown, fine to coarse sand containing up to about 50 percent silt, up to about 20 percent gravel, and trace amounts of roots and organic matter.
>
> *Fill* – Fill was encountered below the topsoil or from the ground surface in all of the explorations. The fill extended 12 to 22 feet bgs where the fill layer was fully penetrated in six explorations (GZ-1, GZ-2/2A, and B-2 through B-5). The fill was encountered to the bottom of the remaining explorations, which extended up to 17.2 feet bgs. The fill generally consisted of very loose to very dense, brown/gray/black, fine to coarse sand containing varying amounts of gravel and silt and up to about 20 percent miscellaneous debris including (but not necessarily limited to) asphalt/brick/concrete fragments, organic matter, glass, shells, ash/cinders, paper, wood, rubber tires, and metal. A buried concrete pipe was encountered in test pit TP-3; refer to the attached test pit exploration log for further detail.
>
> *Organic Silt/Sand with Peat* – Organic soils were encountered below the topsoil/fill in borings GZ-1, GZ-2A, and B-3 through B-5 at depths of 12 to 22 feet bgs. The organic soils were 2 to 10 feet thick and generally consisted of interbedded layers of sand with organic matter, organic silt, and/or peat. Where encountered, interbedded organic silt and peat layers were 2- to 7-feet-thick.
>
> *Sand* – A sand layer was encountered within and just below the organic soils in borings GZ-1 and B-4, respectively. The sand layer was 2- to 4-feet-thick and generally consisted of medium dense, brown, fine to medium sand with trace amounts of silt and gravel.
>
> *Silty Clay* – A silty clay layer was encountered in borings GZ-1, GZ-2A, and B-2 through B-5 at depths ranging from 12 to 27 feet bgs, corresponding to elevations ranging

between 1 to -18 feet. This stratum generally consisted of hard to stiff silty clay and was 22- to 36- feet-thick. The borings indicate an approximately 5 to 10 foot thick "hard" crust with the remainder of the deposit very stiff to stiff. Field torvane and pocket penetrometer data on disturbed SPT samples of the clay indicate undrained shear strength up to about 4,500 pounds per square foot (psf) in the upper clay "crust" with strength values ranging from about 400 to 1,200 psf in the lower portion of the clay. The shear strengths indicated by the field tests are considered to be lower bound (conservative) estimates of the clay deposits' actual shear strength as the field tests were performed on disturbed SPT samples.

Glacial Till – Glacial till was encountered in borings GZ-1, GZ-2A, and B-2 through B-5 at depths ranging from 34 to 61 feet bgs, corresponding to elevations ranging between -23 to -52 feet. This stratum generally consisted of dense to very dense, fine to coarse sand containing up to about 50 percent gravel and up to about 50 percent silt. The glacial till stratum was encountered to the bottom of the borings, except in boring B-3 where weathered bedrock was possibly encountered from 88 feet to the bottom of the borehole, as described further below.

Possible Weathered Bedrock – Weathered bedrock was possibly encountered in boring B-3 at a depth of 88 feet bgs to the bottom of the borehole (100 feet bgs) based on casing refusal at 88 feet bgs, a relatively slow rate of rollerbit advancement, rock fragments observed in the wash water return, and SPT split-spoon refusals with little to no soil recovery. The subsurface stratum at the Site consists generally of 22 feet of urban fill underlain by 2 to 6.5 feet of organic soils underlain by 22 to 26 feet of clay, which is then underlain by glacial till. Borings were completed to a depth of 100 feet bgs.

B. Preliminary Recommendations for Geotechnical Design.

Preliminary recommendations for geotechnical design and construction are summarized below.

Building Foundation

The proposed buildings may be supported by shallow strip and spread footings bearing on existing fill and organic soils improved by aggregate piers, or on compacted Structural Fill placed over existing fill and organic soils improved by aggregate piers. Structural Fill material may consist of imported Granular Fill, imported Crushed Stone, or imported Sand-Gravel Fill. (Recommended fill gradations are presented in the original report, along with subgrade preparation recommendations). The recommended maximum net allowable design bearing pressure for spread footings bearing on soils improved by aggregate piers as described above is 2 tons per square foot (tsf). For foundations that are smaller than 3 feet wide, reduce the bearing value to one third of the above value multiplied by the least lateral footing dimension in feet. Continuous wall footings should be at least 18 inches wide and isolated footings at least 24 inches wide. For frost protection, all exterior footings and interior footings in unheated areas should bear at least 4 feet below final exterior grades. Interior footings in heated areas should bear at least 1.5 feet below top of slab.

Building Slab

Given the geotechnical constraints of the site, slab-on-grade was recommended after improving the fill and organic soils with aggregate piers. At least 12 inches of Sand-Gravel Fill is recommended as a base course below the slab. The top of the aggregate piers should be at least 2 feet below the bottom of slab. (Subgrade preparation recommendations are presented in the original report.)

4.10 Hazardous Materials/Solid Waste

In the late 1990's, GZA conducted numerous borings and subsequent tests of onsite soils and groundwater that identified conditions typical of urban soil with no Reportable Concentrations. This resulted in GZA's issuance in August of 1998 of a Class B-1 Remedial Action Outcome Statement for the site concluding that No Significant Risk or harm to human health, safety, public welfare, and the environment existed at the Site. It is anticipated that the urban fill stratum will be excavated during the construction of the foundations for the new buildings, given the prior history of the site. This will generate soil requiring off-site transport, which will be separated and disposed of in accordance with Massachusetts Department of Environmental Protection regulatory requirements.

The Project will generate solid waste typical of other mixed use projects, and is estimated to be approximately 139 tons per year, based on the expected number of hotel rooms and restaurant space proposed, as shown in figure 4-4 below. A recycling program will be undertaken by the Proponent to minimize the waste entering landfills.

Figure 4-4 Solid Waste Generation

PROGRAM ELEMENT	AMOUNT	[illegible]	SOLID WASTE (Tons per Year)
Hotel	177 Rooms	4 pounds per day per bedroom	129
Restaurant	10,000 sf	5.5 pounds per 1,000 sf per day	10
TOTAL			**139**

4.11 Noise

The primary sources of external mechanical noise will include air ventilations system that are part of the Project mechanical systems. It is not anticipated that the rooftop equipment will exceed maximum allowable sound levels in the City and MassDEP noise regulations. This equipment will be screened or partially screened by parapets, which will provide sound reduction. A diesel-fired generator may be required if a fire pump is deemed necessary by the City. The unit will be located in a sound attenuated acoustical enclosure. As part of the DPIR, it is anticipated that a noise study will be performed to confirm that the Project complies with the City of Boston Noise Ordinance and MassDEP Noise Policy. If necessary, during the final design of the Project, appropriate low-noise mechanical equipment and other noise control measures will be selected to minimize sound level increases at all sensitive locations.

Construction period noise impacts and mitigation are discussed below in Section 4.12.

4.12 Construction Impacts

A. Noise & Vibration

The Project Proponent is committed to minimize the impacts of noise and vibration during construction. The Project vicinity currently has substantial ambient noise levels associated with traffic along McClellan Highway, as well as similar commercial users on adjacent properties. Reasonable efforts will be undertaken to minimize impacts of noise and vibration on residential abutters associated with construction efforts and will include the items detailed below.

- Equipment will not needlessly idle on site during construction.
- Enclosures or barriers will be provided on small equipment that operates continuously.
- Equipment used throughout construction will be maintained properly with particular attention put to proper operation of equipment mufflers.
- Construction activities will be limited to daytime hours.

B. Erosion and Sedimentation/Dust Control

Emphasis will be placed on erosion and sediment control throughout construction with periodic site inspections being conducted by third party professionals to ensure sedimentation and erosion control measures are in place in accordance with accepted construction practices and Project contract documentation. The downgrade perimeter of the site will be protected through the installation of sedimentation barriers and tree protection fencing. Additionally, the site will be prepared at construction commencement to feature temporary sedimentation control basins for stormwater runoff, construction lay down areas, and construction exit pads consisting of anti-tracking materials to limit off-site migration of soils and dust. Upon installation of onsite stormwater inlets during construction, sedimentation traps will be placed within or adjacent to the structures to eliminate siltation of the receiving drainage basins.

All reasonable dust mitigation efforts will be undertaken during earthwork operations that necessitate placement and transport of fill onsite. During this process, dust can be generated that results in minor impacts to the site vicinity. To mitigate these impacts, the construction contract will include specifications for the contractor to reduce potential dust emissions from the site which could impact residential abutters. These specifications will include periodic street and sidewalk cleaning during the active earthwork phases of the Projects, maintaining appropriate moisture content in exposed soils to minimize generation of dust, implementation of temporary stabilization measures, and use of covered transport trucks.

C. Traffic Maintenance

Traffic maintenance plans will be generated by the contractor and submitted to the appropriate authorities prior to their implementation. Construction-period management of traffic flow and safety will include the measures discussed in ***Section 3.4 Transportation – Construction Management.***

D. Construction Waste Management

The site on which the Project is proposed will not require any building demolition, which will limit the amount of construction waste generated. Most construction debris and solid waste will be from packaging materials and scrap pieces of raw materials (corrugated cardboard, glass, aluminum, scrap metal, cable/wire). The contractor will be encouraged by the Proponent to recycle materials when possible. The Project will provide recycling areas that serve the entire building for paper, corrugated cardboard, glass, plastics and metals.

The Project will implement a Construction Waste Management Plan as a means to ensure that a minimal amount of waste debris is disposed of in a landfill. The Project goal is to recycle and/or salvage at least 75% of the construction waste. Materials that cannot be reused or recycled will be transported by a contract hauler to a licensed facility per the DEP regulations for Solid Waste Facilities, 301 CMR 16.00

E. Rodent Control

A rodent extermination certificate will be filed with the building permit application to the City, and inspection monitoring and treatment will be carried out before, during and at the completion of construction work in compliance with the City's requirements. Prior to work start up, areas throughout the site will be treated and periodic services visits will be made during construction.

F. Wildlife Habitat

The proposed Project will not impact wildlife habitats as shown on the National Heritage and Endangered Species Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife.

G. Sustainable Design

Utilizing the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Rating System as a model for incorporating sustainable design features into the Project, the Proponent will comply with the requirements of Article 37 of the Boston Zoning Code for a 'LEED Certifiable' status. The *LEED NC 2009* checklist, included in **Appendix 2** identifies the green design goals for this Project, and is followed by a brief description of the implementation measures for each credit identified.

1. Sustainable Sites

   a. Sustainable Sites, Prerequisite 1, Construction Activity Pollution Prevention:
   The Project will implement a full erosion and sedimentation control program, which will conform to all erosion and sedimentation requirements at the federal, state and local levels. This program will include a Stormwater Pollution Prevention Plan that describes how to protect the existing storm water collection system during construction. All existing catch basins will be protected with hay bales and silt sacks to prevent sediment from entering the systems. Sediment ponds and truck mud traps will be used as necessary during construction to prevent sedimentation from being tracked onto adjacent roadways.

   b. Sustainable Sites, Credit 1, Site Selection:
   The site is currently a vacant lot with existing underground structure and less than 50% existing bituminous concrete paved parking. This site meets all the criteria for site

selection. The site is not prime farmland; it is not undeveloped land with an elevation lower than 5 feet above the flood plain; it does not have any endangered species habitat; it is not within 100 feet of a wetland; was not undeveloped land within 50 feet of a water body, and it was not a public park.

c. Sustainable Sites, Credit 2, Development Density & Community Connectivity:
The Project is located adjacent to the Orient Heights neighborhood of East Boston, which is a dense urban area with a mix of residential and commercial uses. For LEED certification, the Project will pursue the compliance path for Option 2, Community Connectivity. The Project is located on a previously developed site and has several residential areas with a density of 10 units per acre or more within a ½ mile radius of the building's entrance, including Brandywine Village apartments. Also within a ½ mile radius there are many basic services with pedestrian access including a park, community center, schools, restaurants, beauty salons, health and wellness centers, law offices, auto service centers, churches and a pharmacy. Through the addition of new sidewalks and lighting along Boardman Street, the Project seeks to increase pedestrian connectivity that is currently lacking.

d. Sustainable Sites, Credit 4.1, Alternative Transportation-Public Transportation Access:
The Project is located within ¼ mile walking distance of public transportation. There are three bus stops directly adjacent to the Project site with service on seven bus lines - the 120, 426, 448, 449, 450, 455 and the 459. The Project is also within ½ mile walking distance from two Blue Line subway stops: the Bowdoin stop and the Wonderland stop. The proximity of the Project to several forms of public transportation fulfills the LEED credit requirements and helps prevent pollution from automobile usage.

e. Sustainable Sites, Credit 6.1, Stormwater Design-Quantity Control:
The Project's existing site condition qualifies as a site with existing imperviousness of 50% or less. The Project will implement an underground infiltration system as part of a storm water management plan to protect receiving stream channels from excessive erosion, as well as a quantity control strategy. Additional site runoff will be discharged into the city's master system.

f. Sustainable Sites, Credit 7.2, Heat Island Effect-Roof:
The roofing material will be selected to comply with the LEED credit guidelines for a solar reflectance index (SRI) equal to or greater than 78 for a low-sloped roof. A white EPDM membrane roofing system will be specified on building's low-slope roof.

2. Water Efficiency

a. Water Efficiency, Prerequisite 1, Water Use Reduction-20%:
The Project will specify plumbing fixtures that meet the minimum of 20% reduction in water used compared to the baseline for the building. To achieve a 20% reduction, the hotel will include low-flow toilets, lavatories and shower heads.

b. Water Efficiency, Credit 1, Water Efficient Landscaping:

The Project will achieve a 50% reduction in water use for landscaping. The area of landscaping on the site is minimal and will be populated by plant species that require little to no irrigation. A high efficiency irrigation system will be used and a rainwater collection system will help to reduce the amount of potable water used on site for irrigation.

c. Water Efficiency, Credit 3, Water Use Reduction:
The Project will achieve a 35% reduction in water use when compared to the baseline for the building, not including irrigation. To achieve a 35% reduction, the hotel will include low-flow toilets, lavatories and shower heads.

3. Energy & Atmosphere

a. Energy & Atmosphere, Prerequisite 1, Fundamental Commissioning of the Building Energy Systems:
Building systems will be commissioned in accordance with the USGBC LEED requirements. The commissioning services provided will include the Owner's Project Requirements (OPR) and Basis of Design (BOD) documents, development of a commissioning plan, incorporation of a commissioning specification section into the construction documents and verification through startup observation and functional testing that the installed systems are operating in accordance with the OPR, BOD and the construction documents. The previous services apply to the following commissioned systems: HVAC, lighting controls and domestic hot water systems.

b. Energy & Atmosphere, Prerequisite 2, Minimum Energy Performance:
The Project will be designed to demonstrate a 10% improvement in the proposed building performance rating compared with the baseline rating which is determine by complying with the ASHRAE 90.1-2007 Energy Standard as per the newest version of LEED 2009.

c. Energy & Atmosphere, Prerequisite 3, Fundamental Refrigerant Management:
The Project will specify equipment and systems with no chlorofluorocarbon (CFC)-based refrigerants.

d. Energy & Atmosphere, Credit 1, Optimize Energy Performance:
The Project will be designed with the goal of exceeding the baseline building standard by 26% over ASHRAE 90.1-2007. This will be demonstrated with a whole building energy model. The Project will have high-efficiency boilers, roof-top units and motors. In addition, the Projects will include an efficient building envelope, energy-efficient lighting, elevators, Energy Star appliances and SenerComm energy controls at guestrooms.

4. Materials & Resources

a. Materials & Resources, Prerequisite 1, Storage and Collection of Recyclables:
The Project will provide recycling areas that serve the entire building for paper, corrugated cardboard, glass, plastics and metals.

b. Materials & Resources, Credit 2, Construction Waste Management:

The Project will implement a Construction Waste Management Plan as a means to ensure that a minimal amount of waste debris is disposed of in a landfill. The Project goal is to recycle and/or salvage at least 75% of the construction waste.

c. Materials & Resources, Credit 4, Recycled Content:
The Project will specify materials and products with recycled content. For credit compliance, the goal will be to specific materials with recycled content such that the sum of the postconsumer recycled content plus ½ of the preconsumer content constitutes at least 10%, based on cost, of the total value of materials in the Project. Some of the likely materials and products that contain recycled content for this Project will include structural steel, drywall, carpet, flooring and acoustical ceiling tiles.

d. Materials & Resources, Credit 5, Regional Content:
The Project will specify materials and products that have been extracted, harvested or recovered, as well as manufactured within 500 miles of the Project site. The goal will be to achieve at least 20%, based on cost, of the total materials value. Some of the likely materials and products that will qualify for regional materials include structural steel and cast-in-place concrete.

5. Indoor Environmental Quality

a. Indoor Environmental Quality, Prerequisite 1, Minimum Indoor Air Quality Performance:
The Project will be designed to comply with the requirements of Sections 4-7 of the ASHRAE 62.1-2007 Ventilation Standard as per the newest version of LEED 2009.

b. Indoor Environmental Quality, Prerequisite 2, Environmental Tobacco Smoke (ETS) Control:
In order to comply with this prerequisite for a residential or hospitality Project, the Project will implement all the following:
- Prohibit smoking in all common areas of the building.
- Locate any exterior designated smoking areas, at least 25 feet from entries, outdoor air intakes and operable window openings to common areas.
- Prohibit on-property smoking within 25 feet of entries, outdoor air intakes and operable windows. Provide signage to allow smoking in designated areas, prohibit smoking in designated areas or prohibit smoking on entire property.
- Weather-strip all exterior doors and operable windows in the hotel room to minimize leakage from outdoors.
- Minimize uncontrolled pathways for ETS transfer between individual hotel rooms by sealing penetrations in walls, ceilings and floors in the units and by sealing vertical chases adjacent to the units.
- Demonstrate acceptable sealing of units by a blower door test conducted in accordance with ANSI/ ASTM-E779-03, Standard Test Method for Determining Air Leakage Rate By Fan Pressurization.
- Use the progressive sampling methodology defined in Chapter 4 (Compliance Through Quality Construction) of the Residential Manual for Compliance with California's 2001 Energy Efficiency Standards (http://www.energy.ca.gov/title24/residential_manual). Hotel rooms must

demonstrate less than 1.25 square inches of leakage area per 100 square feet of enclosure area (i.e., sum of all wall, ceiling and floor area).

c. Indoor Environmental Quality, Credit 3.1, Construction IAQ Management Plan – During Construction:
The Project will implement a Construction Indoor Air Quality Management Plan (CIAQMP) per the USGBC requirements in order to improve the indoor air quality during construction.

d. Indoor Environmental Quality, Credit 4.1, Low-Emitting Materials – Adhesives & Sealants:
The Project will specify adhesives and sealants that comply with the South Coast Air Quality Management District (SCAQMD) Rule #1168 and Green Seal Standard. The VOC limits stated in these standards will not be exceeded for all the adhesives and sealants used on the interior of the building envelope.

e. Indoor Environmental Quality, Credit 4.2, Low-Emitting Materials – Paints & Coatings:
The Project will specify that all paints and coatings applied inside the building envelope will comply with the Green Seal Standard GS-11 for paints and primers; Green Seal Standard GS-03 for anti-corrosive paints; and the South Coast Air Quality Management District (SCAQMD) Rule #1113 for wood finishes, stains and sealers.

f. Indoor Environmental Quality, Credit 4.3, Low-Emitting Materials – Flooring Systems:
The Project will specify that all flooring systems must comply with the appropriate standard per LEED 2009 for carpet, carpet cushion, carpet adhesive, hard surface flooring, floor sealers, stains and finishes, tile setting adhesives and grout.

g. Indoor Environmental Quality, Credit 4.4, Low-Emitting Materials – Composite Wood & Agrifiber Products:
The Project will not include composite wood and agrifiber products inside the building envelope that contain urea-formaldehyde resins.

h. Indoor Environmental Quality, Credit 6.1, Controllability of Systems - Lighting:
The Project will provide individual light controls for 90 percent of the building occupants as well as lighting controls for all shared multi-occupants spaces.

i. Indoor Environmental Quality, Credit 6.2, Controllability of Systems – Thermal Comfort:
The Project will provide individual thermal comfort controls for at least 50 percent of the building occupants as well as thermal comfort controls for all shared multi-occupant spaces.

j. Indoor Environmental Quality, Credit 7.1, Thermal Comfort - Design:
The Project's heating, ventilation and air conditioning (HVAC) systems and building envelope will be designed to meet the requirements of ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy (with errata but without addenda).

k. Indoor Environmental Quality, Credit 7.2, Thermal Comfort - Verification:
The Project will conduct a thermal comfort survey of building occupants within 6 to 18 months after occupancy. An assessment of overall satisfaction with thermal performance will be generated, along with an identification of thermal comfort problems and a plan for corrective action of these items. This plan will include measurements of relevant environmental variables in problem areas in accordance with ASHRAE Standards 55-2004 (with errata but without addenda).

l. Indoor Environmental Quality, Credit 8.1, Daylight & Views – Daylight for 75 percent of Spaces: The Project will be designed to maximize interior daylighting in regularly occupied spaces. The goal will be to achieve daylight illuminance levels between 25 and 500 foot-candles in 75% of the regularly occupied spaces.

m. Indoor Environmental Quality, Credit 8.2, Daylight & Views – Views for 90 percent of Spaces: The Project will be designed such that building occupants in 90% of the regularly occupied areas will have a direct line of sight to the outdoors. Innovation and Design Process

6. Innovation in Design

a. Innovation In Design, Credit 1.1-1.5
Specific Innovation Credits have not yet been identified at this stage of the Project, but the goal will be to achieve at least two credits. Some potential innovations that may be pursued include a green housekeeping program and a community, ozone laundry system and client educational program.

b. Innovation In Design, Credit 2.0, LEED Accredited Professional:
Per the requirement of Section 6.b the Project team includes at least one LEED AP.

5.0 Urban Design

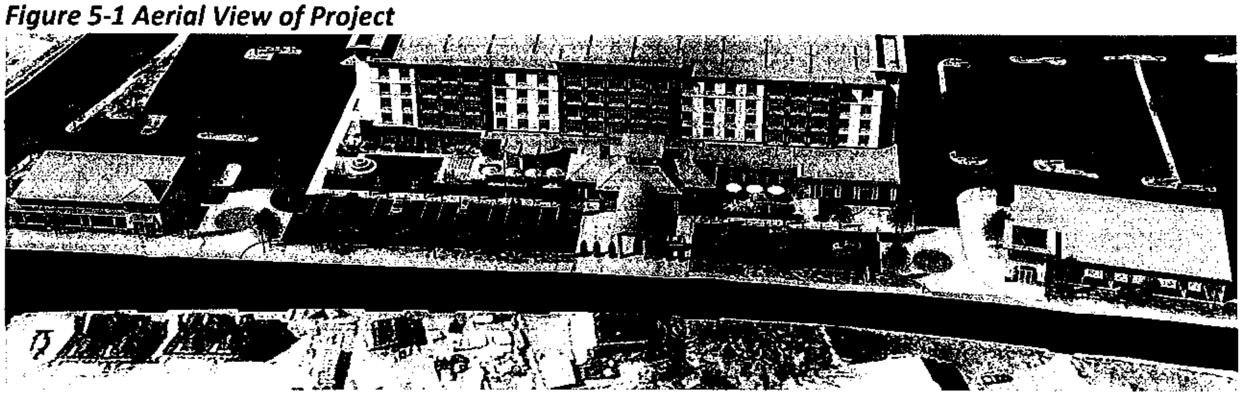
5.0 URBAN DESIGN

5.1 Project Location and Context

The 6.2-acre Project site is located along McClellan Highway at the intersection of Boardman Street. This vacant property, once home to a fueling depot for the US Navy, has remained underdeveloped for years, surrounded by the Orient Heights Community Center to the east, a residential neighborhood and park space to the north, the McClellan Highway and commercial/industrial properties along the Chelsea River to the west and an Avis Car Rental facility to the south.

The proposed mixed-use Project, which will include hotel, restaurant and retail components, will provide a critical transition from the neighborhood and residential uses to the east of the property and the industrial and commercial uses along the highway to the west. The proposed 5-story hotel structure will step down to a more residential-scale single story at the front elevation on Boardman. The porte-cochere at the main entry will directly engage the newly created pedestrian environment on the south side of Boardman Street, and 1-story restaurant/retail structures will front on Boardman Street as well, marking the entries to an urban plaza at the hotel drop-off. The plaza space will include several amenities including decorative bollard lights, street trees, decorative fencing, planter urns and special paving to emphasize a pedestrian priority.

Figure 5-1 Aerial View of Project



5.2 Compatibility with Surrounding Structures

The proposed Project incorporates several design features which will enhance compatibility with the traditional architecture of many of the surrounding structures. Scaling elements, materials and building massing have been carefully considered in order to ensure that the Project fits sensitively into the context of the neighborhood. (Refer to figures 5-2 through 5-6)

A. Scale
   The proposed hotel structure incorporates larger scale building panels at the upper levels (2nd through 5th floors) in order to reduce the overall scale of the body of building. Smaller scale materials (bricks) are utilized at the base of the hotel building and on the restaurant / retail buildings to create a more human scale at the streetscape.

B. Materials

A mixture of modern and traditional materials, i.e. metal cladding, cementitious panels and brick, are proposed to highlight the identity of the hotel and adjacent buildings while recalling the brick facing seen on the Orient Heights Community Center and the architectural fabric of Boston in general. Brick corbelling and metal cornices are also incorporated to add scale elements and keep the structures urban in their character.

C. Massing

The massing of the proposed hotel building establishes a base, body and cornice in proportions consistent with traditional mid-rise architecture. The front façade is also articulated into sections (left, right and center) recalling a collection of smaller buildings. The massing is designed to work visually when seen from a distance and also when experienced from a close up street level perspective. Parapets are utilized at the roof level to hide roof-top mechanical equipment and the elevator penthouse.

Figure 5-2 Eye Level Rendering of Project

EXTERIOR PERSPECTIVE 1

EXTERIOR PERSPECTIVE 2

EXTERIOR PERSPECTIVE 3

EXTERIOR PERSPECTIVE 4

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PROJECT No.:	W050623
DRAWN BY:	EGD
CHECKED BY:	MJM/MDS
DATE:	08/30/12
SCALE:	AS NOTED
CAD I.D.:	W111073cd4_PNF.dwg

PROJECT:
PROPOSED MIXED USE DEVELOPMENT
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PROPOSED VIEW FROM BOARDMAN AND ASHLEY

PROPOSED VIEW FROM BOARDMAN AND MCCLELLAN

PROPOSED VIEW FROM BOARDMAN NEAR MCCLELLAN

PROPOSED VIEW FROM MCCLELLAN AT AVIS

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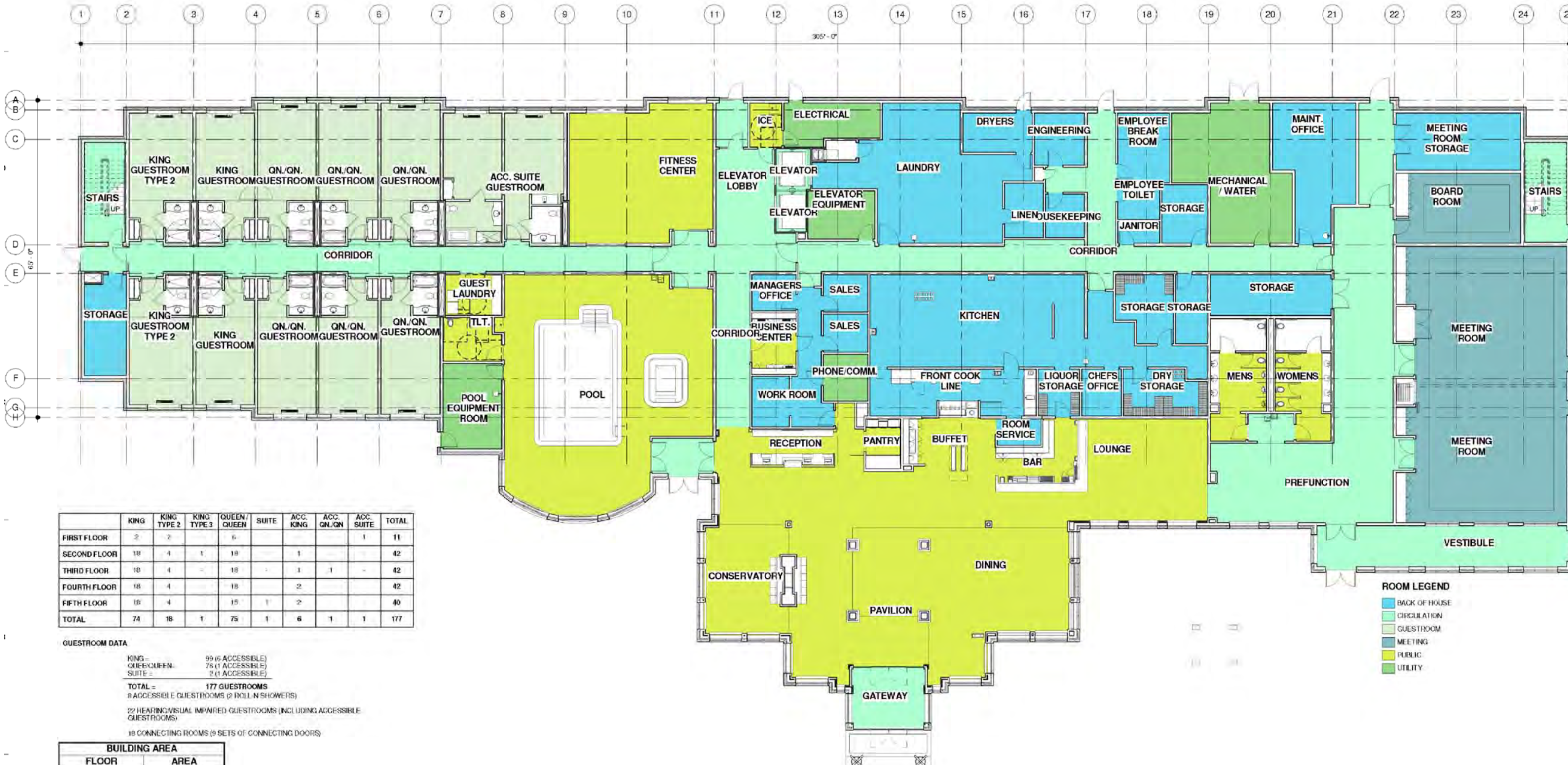

	KING	KING TYPE 2	KING TYPE 3	QUEEN / QUEEN	SUITE	ACC. KING	ACC. QN./QN	ACC. SUITE	TOTAL
FIRST FLOOR	2	2		6				1	11
SECOND FLOOR	18	4	1	18		1			42
THIRD FLOOR	18	4	-	18	-	1	1	-	42
FOURTH FLOOR	18	4		18		2			42
FIFTH FLOOR	18	4		15	1	2			40
TOTAL	74	18	1	75	1	6	1	1	177

GUESTROOM DATA

KING = 99 (6 ACCESSIBLE)
QUEE/QUEEN= 76 (1 ACCESSIBLE)
SUITE = 2 (1 ACCESSIBLE)

TOTAL = 177 GUESTROOMS
8 ACCESSIBLE GUESTROOMS (2 ROLL-IN SHOWERS)

22 HEARING/VISUAL IMPAIRED GUESTROOMS (INCLUDING ACCESSIBLE GUESTROOMS)

18 CONNECTING ROOMS (9 SETS OF CONNECTING DOORS)

BUILDING AREA	
FLOOR	AREA
FIRST FLOOR	26,750 SF
SECOND FLOOR	18,944 SF
THIRD FLOOR	18,944 SF
FOURTH FLOOR	18,944 SF
FIFTH FLOOR	18,944 SF
Grand total	102,525 SF

A1 CONCEPTUAL FIRST FLOOR PLAN
3/32" = 1'-0"

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CONCEPTUAL FIRST FLOOR PLAN

SHEET NUMBER:
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C1 CONCEPTUAL THIRD FLOOR PLAN
3/32" = 1'-0"

A1 CONCEPTUAL SECOND FLOOR PLAN
3/32" = 1'-0"

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CONCEPTUAL SECOND AND THIRD FLOOR PLAN

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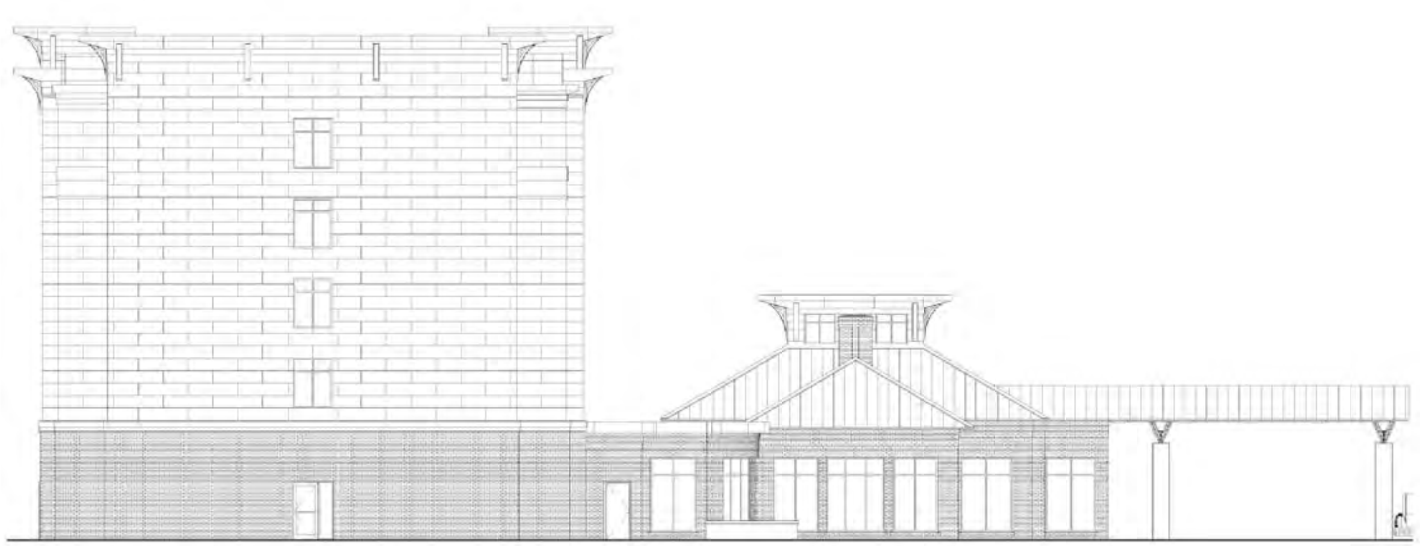
D1 FRONT ELEVATION
3/32" = 1'-0"



B1 EXTERIOR ELEVATION - EAST
3/32" = 1'-0"

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EXTERIOR ELEVATIONS

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6.0 Historic & Archaeological Resources

6.0 HISTORIC and ARCHAEOLOGICAL RESOURCES

6.1 Historic Resources

Massachusetts Historical Commission is currently reviewing a Project Notification Form for the project site. It is anticipated that upon completion of their review the site will be found not to impact any historic structure, district or place. The proponent has utilized the MACRIS mapping tool which has yielded no historical or archaeological resources.

6.2 Archaeological Resources

The proposed Project is located on filled land which has been previously disturbed by the construction of previously used by the United States Navy as a fuel storage depot. No previously identified archaeological resources are located within the Project Site or immediate vicinity. No impacts to archaeological resources are anticipated at this time.

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7.0 Infrastructure Systems

7.0 INFRASTRUCTURE SYSTEMS

7.1 Introduction

The Project site will utilize the existing infrastructure located in public streets adjacent to the site, principally limited to Boardman Street (see Figure 7-1). Research and coordination to date indicates that the sanitary sewer and stormwater collection system, water supply, energy systems, and telecommunications infrastructure has adequate capacity to serve the Project. This will be further defined through Project development and as appropriate permits and approvals are acquired prior to the start of construction.

This chapter explains the existing and proposed condition of each infrastructure system. Given that the site is currently vacant, the Project will result in an increase in all utility demands, but there is adequate current capacity to meet the increased infrastructure demands. The systems described below include those owned by Boston Water and Sewer Commission (BWSC), private utility companies, and on site infrastructure systems owned by the Proponent.

7.2 Wastewater

Local sanitary sewer service is provided by BWSC via a dedicated 10- to 12-inch sanitary sewer main located in Boardman Street, which flows easterly to a 36-inch sewer interceptor through the Orient Heights Community Center property. The Project site ultimately contributes flow to the Massachusetts Water Resources Authority (MWRA) collection system and discharge to the Deer Island Treatment Plant. There is currently no sewerage generation at the site.

The Proponent will coordinate with BWSC on the design and capacity of the proposed connections to their system. In addition, the Proponent will submit a General Services Application and site plan to the BWSC for review and approval as the Project development progresses. The Project will generate an estimated 31,545 gallons per day (GPD) of new wastewater flow based on the Massachusetts State Environmental Code, 310 CMR 15.203, as detailed in Table 7-2.

Figure 7-2 Estimated Wastewater Generation

[illegible]	[illegible]	[illegible]	[illegible]
Existing			
Vacant Property	-	-	0 GPD
Proposed			
Hotel	177 ROOMS	110 GPD/ROOM	19,470 GPD
Retail / Restaurant 1[1]	6,270 SF / 210 SEATS	35 GPD/SEAT	7,350 GPD
Retail / Restaurant 2	4,034 SF / 135 SEATS	35 GPD/SEAT	4,725 GPD
Est. Wastewater Generation			**31,545 GPD**

Footnote:

1) The Unit Flow Rate was conservatively estimated from a Restaurant Use, which generates a higher estimate for wastewater generation.

7.3 Domestic Water and Fire Protection

Water supply for the Project site is provided by BWSC by means of a 12-inch water main located in Boardman Street. Domestic and fire protection connections are anticipated to be provided from new connections at the water main to serve all three uses. The Proponent will coordinate with BWSC on the design and capacity of the proposed connections to their system. In addition, the Proponent will submit a General Services Application and site plan to the BWSC for review and approval as the Project development progresses. A water system flow test will be required to determine existing capacity of the distribution system and the design of the buildings fire protection system. The water system will be upgraded as necessary to ensure fire safety without impacting residents or other businesses.

Domestic water demand is based on the estimated wastewater generation with an added factor of 10 percent for consumption, system losses and other uses. Based on the estimated sewer generation from Section 7.2, the estimated domestic water demand is approximately 34,700 GPD. The water system will be designed and constructed to meet all applicable codes and standards to support the Project.

7.4 Storm Sewer System

As noted above, the Project site is a previously developed property formerly operated as a fuel storage depot by the United States Navy. The Project site contains a mixture of asphalt pavement, gravel and bare soils, with area of overgrowth and wooded areas. A closed drainage system was present at the time of operation but is currently in disrepair and impacted by abutting site developments. Today, the Project site is primarily internally draining with some overland flow to adjacent properties and Boardman Street.

Adjacent to the Project site, BWSC maintains a separate storm sewer system within Boardman Street. Directly to the east of the Project site, a privately-owned storm sewer collects runoff east of the Avis development and connects to the BWSC system near the Orient Heights Community Center. The Boardman Street storm sewer system consists of a series of catch basins and pipes ranging in size from 15-inch, 21-inch, and 36-inch adjacent to the Project. Runoff collected in the Project area is conveyed in an easterly and southeasterly direction, through successively larger pipes in Saratoga Street and Bennington Avenue, before ultimately discharging through a 66-inch outfall pipe under Constitution Beach.

The Project includes the design and construction of a storm sewer system capable of controlling stormwater runoff from the mixed-use commercial development. The design of the on-site system is currently under development and will include multiple water quality and quantity control practices. The closed drainage system will include catch basins and water quality mitigation measures to treat stormwater runoff, such as oil/water separators. After collection, multiple subsurface detention systems will be installed to promote the recharge of groundwater to the maximum extent practical.

The Project will require a new storm sewer connection to the BWSC system for overflow of peak storm events. A preliminary investigation into the BWSC system and the contributing drainage area indicates that there is available storm sewer capacity in the existing system. The storm sewer system will be designed in accordance with applicable codes and standards and approved by BWSC during their Site Plan Approval review process.

7.5 Natural Gas Service

Gas service at the Project site is provided by National Grid Energy Delivery via a 12-inch gas main within Boardman Street. The Project's anticipated gas demand for heating and restaurant use has not been determined. As the Project development progresses, National Grid Energy Delivery will be supplied the final gas demand for confirmation that adequate capacity is available to serve the Project.

7.6 Electrical Service

Electric service at the Project site is provided by NSTAR Electric via overhead network of utility lines located along Boardman Street. NSTAR will be contacted to coordinate providing electric service to the Project. As the Project development progresses, the Proponent and NSTAR will coordinate final design and installation of the electrical service.

7.7 Telecommunications Service

The Proponent will select private telecommunications companies to provide telephone, cable, and data services. Upon selection of the provider(s), the Proponent will coordinate service connection locations, final design details, and obtain appropriate approvals prior to construction.

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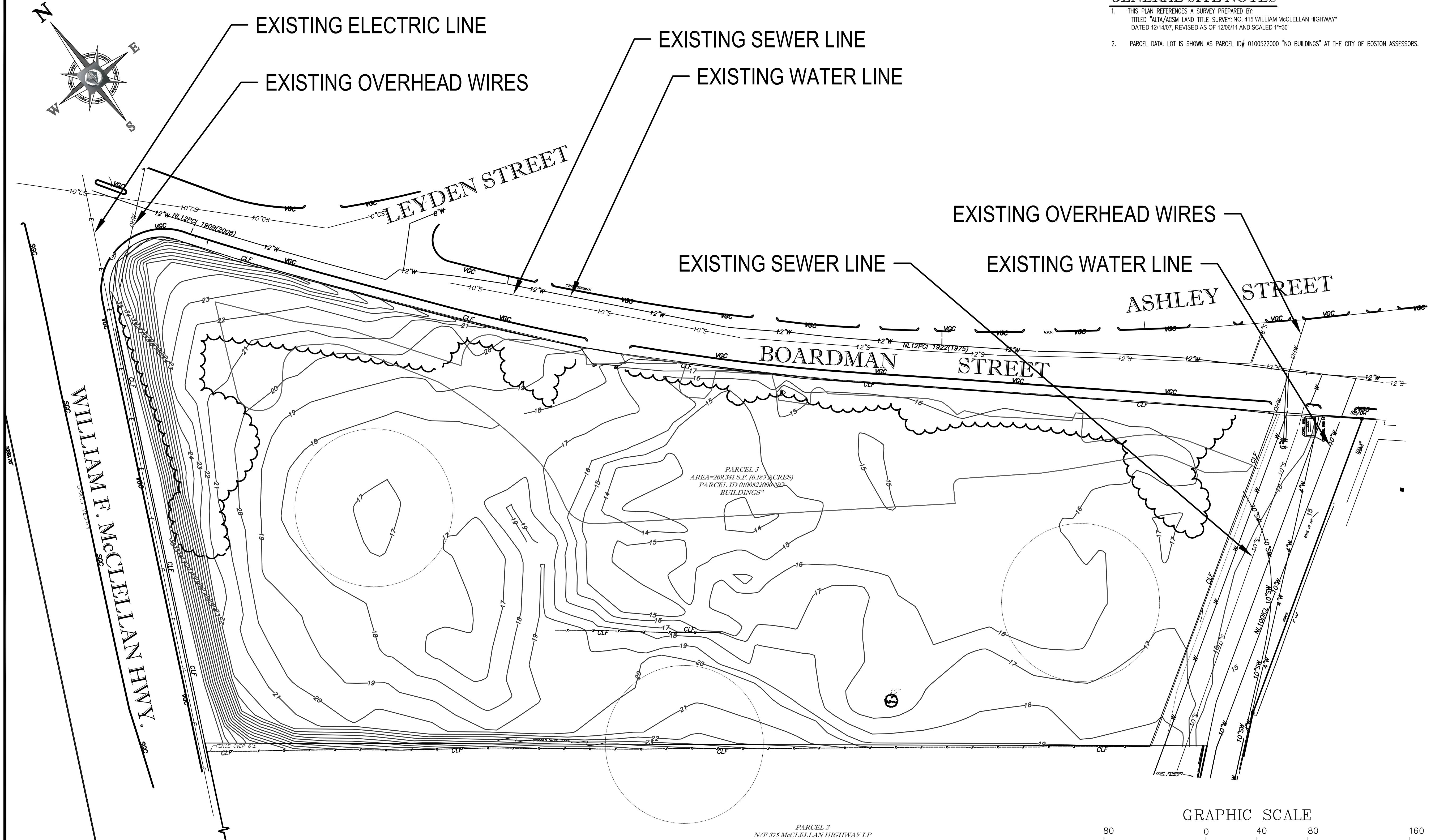
GENERAL SITE NOTES

1. THIS PLAN REFERENCES A SURVEY PREPARED BY: TITLED "ALTA/ACSM LAND TITLE SURVEY; NO. 415 WILLIAM McCLELLAN HIGHWAY" DATED 12/14/07, REVISED AS OF 12/06/11 AND SCALED 1"=30'
2. PARCEL DATA: LOT IS SHOWN AS PARCEL ID# 0100522000 "NO BUILDINGS" AT THE CITY OF BOSTON ASSESSORS.



GRAPHIC SCALE

80 0 40 80 160

(IN FEET)
1 inch = 80 ft.

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CHECKED BY:	MJM/MDS
DATE:	08/30/12
SCALE:	AS NOTED
CAD I.D.:	W111073cd4_PNF.dwg

PROJECT:
PROPOSED MIXED USE DEVELOPMENT
415 WILLIAM F. McCLELLAN HWY
EAST BOSTON, MA

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SHEET TITLE:
EXISTING UTILITY PLAN

SHEET NUMBER:
7-1
OF 1

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8.0 SITE PLAN

Site plans depicting the proposed Project are included herein as follows:

Figure 8-1 Existing Conditions
Figure 8-2 Proposed Conditions Plan
Figure 8-3 Environmental Constraints Plan
Figure 8-4 Streetscape Enlargement Plan

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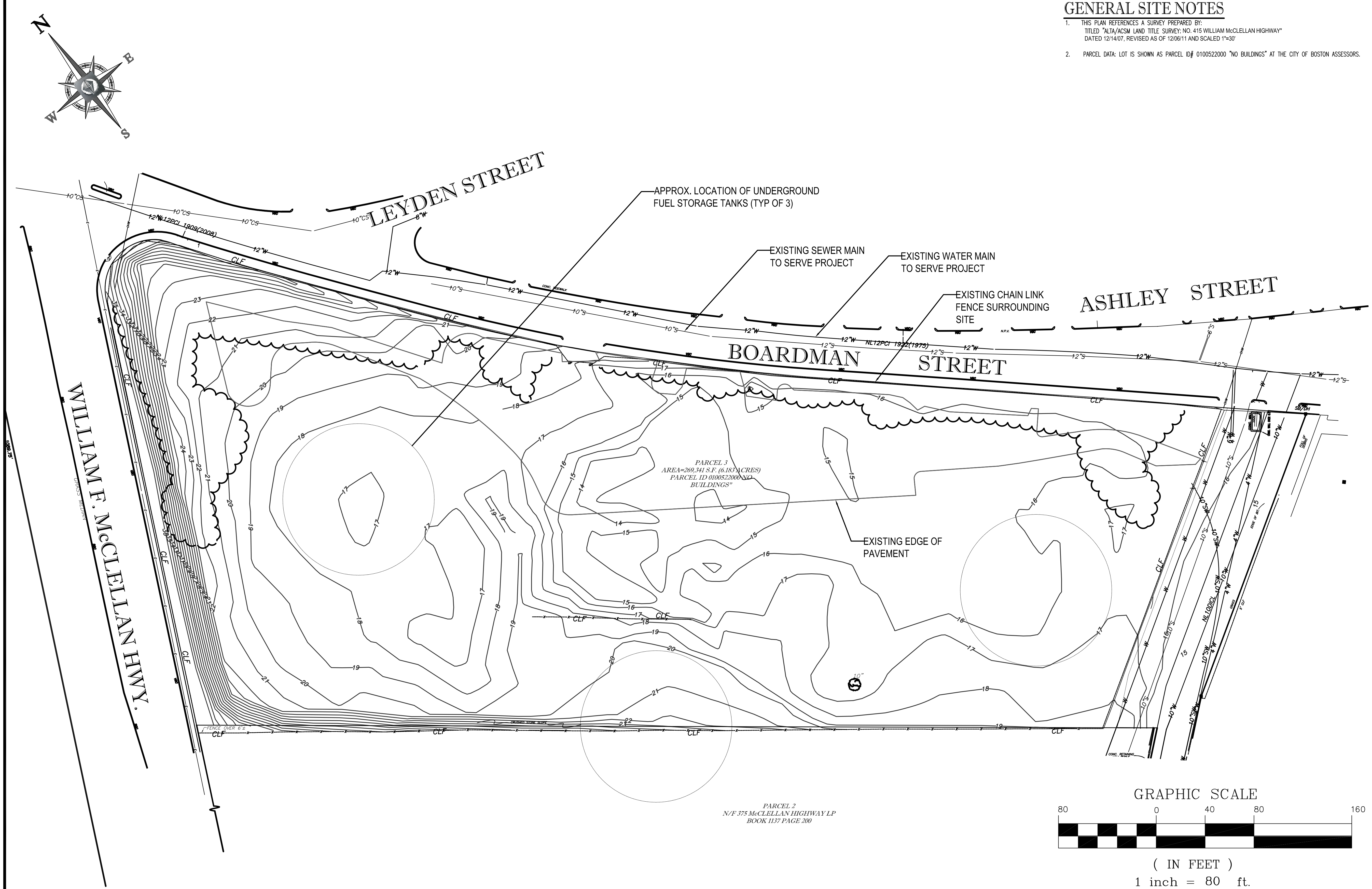

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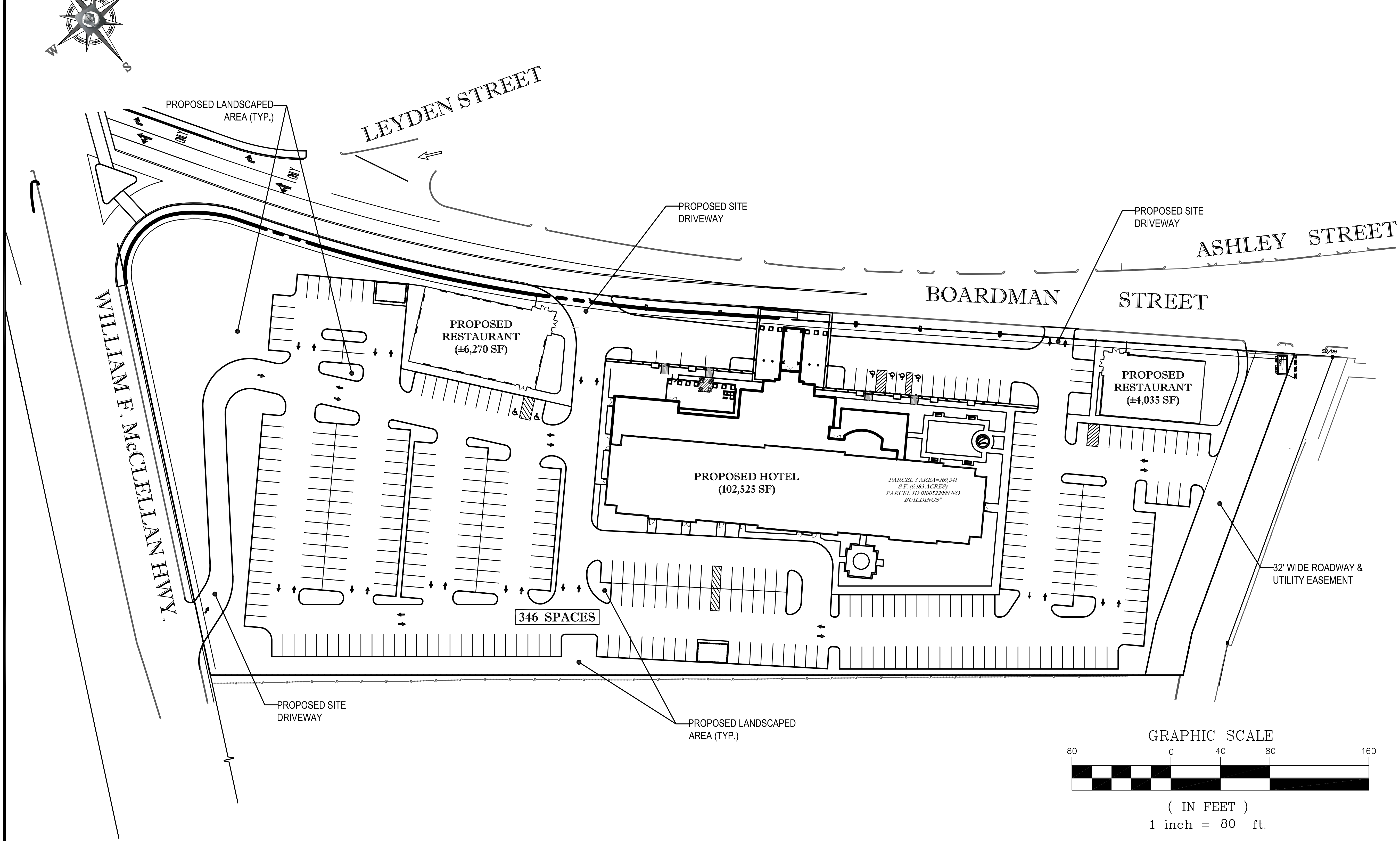

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SHEET TITLE:
PROPOSED CONDITIONS PLAN

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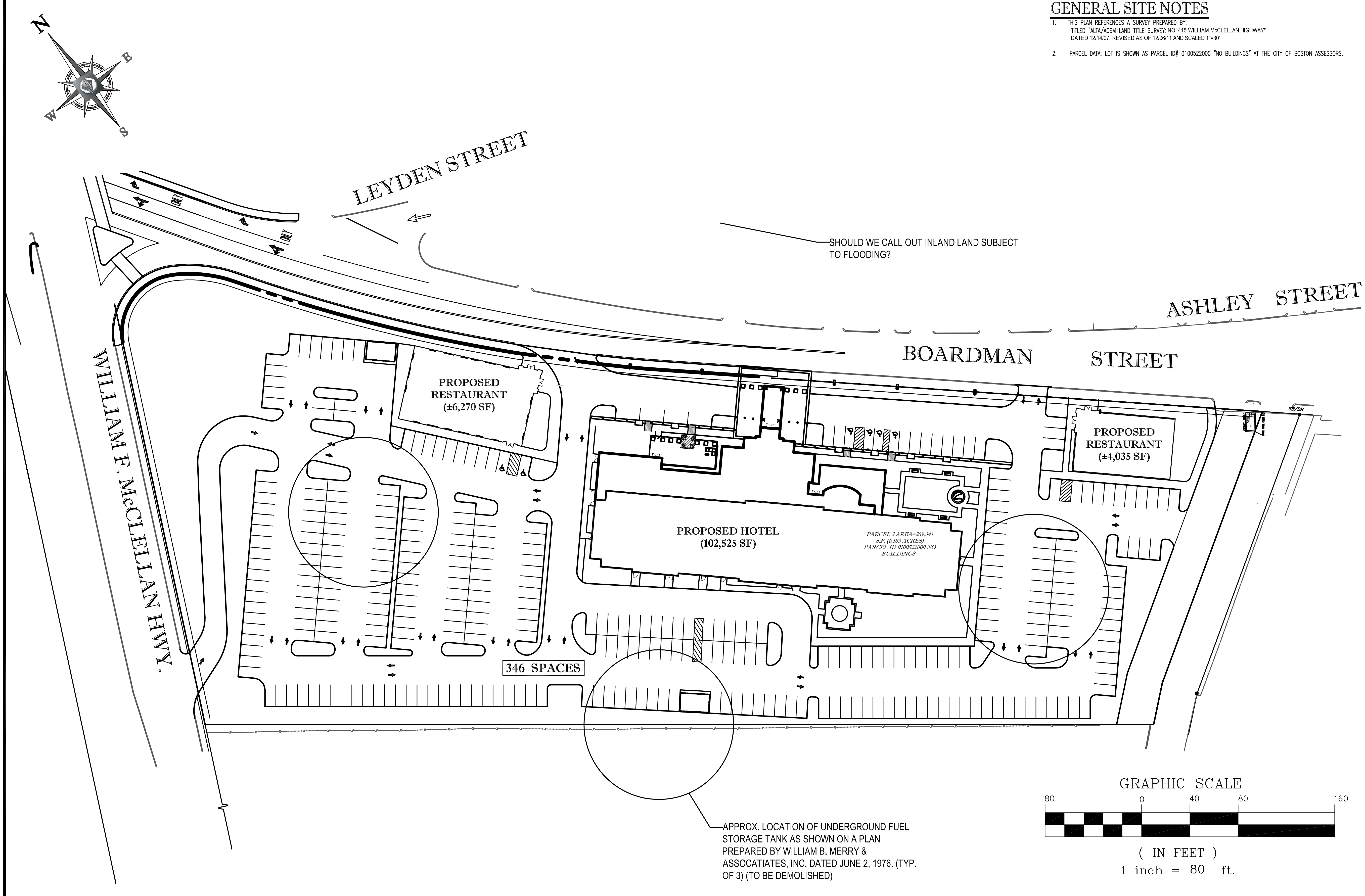

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SHEET TITLE:
ENVIRONMENTAL CONSTRAINTS PLAN

SHEET NUMBER:
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OF 1

REVISION 0 - 8/30/12

CONCEPT LAYOUT PLAN NOTES

1. THIS PLAN HAS BEEN PREPARED BASED ON REFERENCES INCLUDING: ALTA/ACSM LAND TITLE SURVEY, NO. 415 WILLIAM F. McCLELLAN HIGHWAY BOSTON, MASS. (EAST BOSTON DISTRICT), PREPARED BY: FELDMAN PROFESSIONAL LAND SURVEYORS, SCALE:1"=30', DATED: 12/14/07.
2. THIS PLAN IS INTENDED FOR CONCEPTUAL REVIEW PURPOSES ONLY. THE EXISTING CONDITIONS SHOWN HEREON IS BASED UPON INFORMATION THAT WAS SUPPLIED TO OUR OFFICE AT THE TIME OF PLAN PREPARATION AND MAY BE SUBJECT TO CHANGE.

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SHEET TITLE:
STREETSCAPE ENLARGEMENT PLAN

SHEET NUMBER:
8-4
OF 1

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9.0 TIDELANDS

Although the Project is located on landlocked, filled former tidelands, the construction of the Project will maintain existing connections to tidelands. No impact is anticipated. The Project site does not contain waterways or tidelands that are subject to the Waterways Act, M.G.L.c.91.

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10.0 Development Impact Project Component

10.0 DEVELOPMENT IMPACT PROJECT COMPONENT

Under section 80B-7 of the Code, projects that require zoning relief and that will devote more than 100, 0000 square feet of space to "development impact uses," must make contributions to the City of Boston's Neighborhood Housing Trust and Neighborhood Jobs Trust. The Proponent will make both a housing contribution grant and a jobs construction grant to the Neighborhood Housing Trust and the Neighborhood Jobs Trust.

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APPENDIX A

Letter of Intent with Respect to Development of
415 McClellan Highway, East Boston, MA

FIRST BRISTOL CORPORATION

March 30, 2012

Mr. Peter Meade
Director
Boston Redevelopment Authority
Boston City Hall, 9th Floor
Once City Hall Square
Boston, MA 02201

RE: Letter of Intent with Respect to Development of
<u>415 McClennan Highway, East Boston, MA</u>

Dear Director Meade:

This letter is intended to serve as a Letter of Intent submitted by MC-EB Realty LLC in connection with the development of 415 McClennan Highway, a 6.183 acre parcel of land at the corner of McClennan Highway and Boardman Street, East Boston, Massachusetts (the "Property"), all as defined and described in greater detail herein.

MC-EB Realty LLC represents the integrated and proven development experience of J. Karam Management, Inc. and its affiliate First Bristol Corporation, teamed with Marshall Development LLC and its affiliate Marshall Properties, Inc. MC-EB Realty LLC and its principals have collectively been responsible for the development of more than 4 million square feet of hotels, shopping centers and office buildings throughout New England. MC-EB Realty LLC acquired the fee interest in the Property on January 18, 2012. The Property is currently vacant and underutilized. It is uniquely positioned for redevelopment given its location and the operative zoning controls which are in place to guide future development.

MC-EB Realty LLC will undertake the development of: (i) a 177 room select service hotel of approximately 105,000 square feet to be located in the center of the Property; (ii) a free-standing 6,030 square feet full service restaurant which will be located to the northwesterly corner of the Property; (iii) a second 6,030 square feet full service restaurant which will be on a separate pad from, but will be connected to, the hotel; and (iv) between 375-400 parking spaces which will service the needs of the hotel and the restaurants. The development of the Property as described above for said hotel, restaurant and accessory parking uses will be referred to as the "Project". MC-EB Realty LLC has selected First Bristol for this Project, given First Bristol's more than thirty years of experience in developing and owning hotel properties throughout New England. First Bristol will assist MC-EB Realty LLC in the development and management of the Project. MC-EB Realty LLC's proposed redevelopment of the Property will result in a vibrant mixed-use development, and is intended to meet the needs of travelers to and from Logan Airport who might otherwise choose hotel options outside of the City of Boston. We look forward to presenting our plans in further detail in the near term.

According to Map 3C East Boston Neighborhood Zoning District, the Property is located in its entirety within the McClennan Highway Economic Development Area ("EDA") of the East Boston Neighborhood Zoning District, the relevant provisions of which are set forth in Article 53 of the Boston Zoning Code and Enabling Act (the "Code"). According to Section 53-44 of the Code, the Property is within an area which is eligible for development pursuant to the terms of a Planned Development Area ("PDA") Plan prepared in accordance with the terms of Article 80C of the Code. MC-EB Realty LLC intends to file a Project Notification Form to initiate Large Project Review in accordance with Article 80B in April 2012, and a subsequent DPIR filing thereafter. MC-EB Realty LLC also may seek PDA approval for the Property, or other zoning approval as determined appropriate in consultation with the BRA and other City agencies, to enable the development of the Project. We intend to coordinate the City's Article 80 review of the Project with review required in accordance with the Massachusetts Environmental Policy Act and implementing regulations ("MEPA").

We look forward to working with you and other representatives of the BRA, members of the East Boston community – including our neighbors and the Impact Advisory Group when appointed, Mayor Menino, Councilor LaMattina, Senator Petruccelli, Representative Basile and other elected and appointed officials, and other City agencies to undertake the review of this Project. We think that this Project represents a positive contribution to the economic health of the East Boston neighborhood, and we are excited and enthusiastic about the possibilities the redevelopment of the Property will bring.

Please do not hesitate to contact me (508) 679-1180 or Lianne Marshall (401) 725-9370 should you have any questions.

Sincerely,

James J Karam

James J. Karam

CC: Hon. Thomas M. Menino, Mayor
Senator Anthony Petruccelli
Representative Carlo Basile
Councilor Salvatore LaMattina
Kairos Shen, AIA, BRA
James Tierney, Esq., BRA
Brian Golden, Esq., BRA
Jay Walsh, MONS
Ernani DeAraujo, MONS
Lianne Marshall, Marshall Properties
Robert Travaglini, Esq.
Mary T. Marshall, Esq.

APPENDIX B

Traffic Impact Access Study

TRAFFIC IMPACT AND ACCESS STUDY

PROPOSED COMMERCIAL DEVELOPMENT
EAST BOSTON, MASSACHUSETTS

Prepared for:

First Bristol Corporation
Fall River, MA

May 2012

Prepared by:

VANASSE & ASSOCIATES, INC.
10 New England Business Center Drive
Suite 314
Andover, MA 01810
(978) 474-8800

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CONTENTS

CONTENTS (Continued)

FIGURES

TABLES

EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact and Access Study (TIAS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a mixed-use commercial development to be located at 415 William F. McClellan Highway (Route 1A) in East Boston, Massachusetts (hereafter referred to as the "Project"). Access to the Project site will be provided by way of three (3) driveways as follows: a right-turn, entrance only driveway that will intersect the east side of Route 1A approximately 350 feet south of Boardman Street; a right-turn entrance only driveway that will intersect the south side of Boardman Street approximately 400 feet east of Route 1A; and a full-access driveway that will intersect the south side of Boardman Street approximately 750 feet east of Route 1A. Secondary access to the Project site will be provided by way of a shared (with Avis Rental Car) access easement that is situated parallel to the east property line of the Project site; however, the Project has been designed with specific features to limit use of the easement by Project-related traffic.

The Project will require the issuance of a State Highway Access Permit from the Massachusetts Department of Transportation (MassDOT) for access to Route 1A, a State Highway under the jurisdiction of MassDOT.

This study was prepared in consultation with the Boston Redevelopment Authority (BRA), the Boston Transportation Department (BTD) and MassDOT; was performed in accordance with the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA)/MassDOT Guidelines for Environmental Impact Report/Environmental Impact Statement Traffic Impact Assessments (TIAs); and was conducted pursuant to the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in February and April 2012. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area for the Project was developed in consultation with BTD and was selected to contain the major roadways providing access to the Project site, Route 1A and Boardman Street, as well as at the following major intersections located along these roadways through which Project-related traffic will travel: Route 1A at Boardman Street; Boardman Street at

Leyden Street; Boardman Street at Ashley Street; Route 1A at Waldemar Avenue; and Route 1A at Addison Street.

Existing Traffic Volumes

In order to determine existing traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) and vehicle classification counts were completed at the study area intersections in February and April 2012 during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods while public schools were in regular session, and during the Saturday midday (11:00 AM to 2:00 PM) peak period. These time periods were selected for analysis purposes as they are representative of the peak traffic volume hours for both the Project and the adjacent roadway network. The February and April traffic volumes were found to be representative of an above average-month condition and were not adjusted downward in order to provide a conservative (above-average) analysis condition.

A review of the peak period traffic counts indicates that the weekday morning peak-hour generally occurs between 7:00 and 8:00 AM, with the weekday evening peak-hour generally occurring between 4:15 and 5:15 PM and the Saturday midday peak-hour generally occurring between 12:00 and 1:00 PM.

Pedestrian and Bicycle Facilities

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in February and April 2012. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities. Sidewalks are provided along both sides of the study roadways, with marked crosswalks and pedestrian traffic signal equipment provided at the Route 1A/Boardman Street and Boardman Street/ Ashley Street (pedestrian signal) intersections.

At present, there are no formal existing bicycle facilities that were identified within the immediate study area; however, the study area roadways provide sufficient width (combined travel lane and shoulder) to support bicycle travel in a shared traveled-way configuration. The traffic signal system at the Route 1A/Boardman Street intersection does not include bicycle detection at the present time.

Public Transportation

The study area and the Project site are served by a number of public transportation services provided by the Massachusetts Bay Transportation Authority (MBTA), including fixed-route bus service and subway service on the Blue Line. MBTA Bus Route 120, *Orient Heights – Maverick Station via Bennington Street*, provides service along Boardman Street on weekdays and weekends between 5:25 AM and 1:20 AM. The closest bus stops to the Project site are located at the Route 1A/Boardman Street and Boardman Street/Leyden Street intersections, directly adjacent to the Project site. The Blue Line subway service operates between Wonderland Station in Revere and Bowdoin Station in downtown Boston, and provides service to Logan International Airport. The closest Blue Line station to the Project site is Orient Heights Station which is located off Bennington Street and approximately ½-mile from the Project site. At Orient Heights Station, passengers can connect to Bus Route 120 and access the Project site. Service on the Blue Line is provided on weekdays and Saturday between 5:15 AM and 12:30 AM, and on Sunday between 6:00 AM and 12:30 AM.

Spot Speed Measurements

Vehicle travel speed measurements were performed on Route 1A and Boardman Street in the vicinity of the Project site using a radar gun. Based on these measurements, the mean (average) vehicle travel speed along Route 1A in the vicinity of the Project site was found to be approximately 42 mph. The average measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 46 mph, or 6 mph above the posted speed limit (40 mph). The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits.

The mean vehicle travel speed along Boardman Street in the vicinity of the Project site was found to be approximately 33 mph, with the average measured 85th percentile vehicle travel speed found to be approximately 37 mph, or 7 mph above the "prima facie" speed (30 mph).[1]

Motor Vehicle Crash Data

Motor vehicle crash information for the study intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent three-year period available (2007 through 2009, inclusive) in order to examine motor vehicle crash trends occurring within the study area.

Based on a review of this information, the signalized intersection of Route 1A at Boardman Street experienced a total of ten (10) reported crashes over the three-year review period, the majority of which resulted in property damage only; occurred on a weekday; and were reported as rear-end-type collisions. One crash each was reported at the intersections of Boardman Street with Leyden Street and Ashley Street, and at the Route 1A/Addison Street intersection over the three-year review period, with no crashes reported at the Route 1A/Waldemar Avenue intersection. All of the study intersections were found to have a motor vehicle crash rate below the MassDOT average for a signalized or unsignalized intersection, as appropriate, for the MassDOT Highway Division District in which the intersections are located (District 6), indicating no inherent safety deficiencies. No fatal motor vehicle crashes were reported at the study intersections over the three-year review period.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2017, which reflects a five-year planning horizon consistent with State traffic study guidelines. Independent of the Project, traffic volumes on the roadway network in the year 2017 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2017 No-Build traffic volumes reflect 2017 Build traffic volume conditions with the Project.

Specific Development by Others

The BRA and BTD were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study

[1] The "prima facie" speed limit is defined in Chapter 90 § 17 of the Massachusetts General Laws as that rate of speed greater than which is considered reasonable or proper to operate motor vehicle under a defined roadway type and abutting land use.

intersections. Based on these discussions, no projects were identified to be planned within the study area at this time. It should be noted that there are plans to redevelop the Suffolk Downs racetrack; however, definitive plans for the redevelopment have not been identified at this time.

General Background Traffic Growth

Based on discussions with BTD, a 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area. For reference, traffic volumes within the study area have experienced a general decline based on a review of historic traffic count data available from MassDOT.

Roadway Improvement Projects

MassDOT and the City of Boston were contacted in order to determine if there were any planned roadway improvement projects expected to be completed within the study area. Based on these discussions, no roadway improvements outside of routine maintenance activities were identified to be planned within the study area at this time. Improvements have been identified at a conceptual level for the Route 1A/Boardman Street intersection which would entail either a partial or full grade separation of the intersection. These plans will likely advance as a part of the redevelopment of the Suffolk Downs racetrack and are not reflected in this assessment.

No-Build Traffic Volumes

The 2017 No-Build condition peak-hour traffic-volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2012 Existing peak-hour traffic volumes.

Project-Generated Traffic

As proposed, the Project will entail the construction of a 177-room all-suites business hotel and 10,030± square feet (sf) of restaurant space in two buildings. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)[2] were used. ITE Land Use Codes (LUCs) 311, *All Suites Hotel*, and 932, *High-Turnover (Sit-Down) Restaurant*, were used to develop the traffic characteristics of the Project.

Given the availability of public transportation to the Project site (bus and subway) and the interconnected pedestrian facilities that link the Project site to the proximate neighborhood area, it is expected that a portion of the trips generated by the Project will be made by public transportation or will include pedestrian/bicycle trips. However, in order to present a conservative (high) estimate of Project-related impacts on the transportation infrastructure, all of the trips associated with the Project were considered to be vehicle trips.

Internal Trips

Given the mix of uses to be integrated into the Project (hotel and restaurant), it is expected that a portion of the customers that patronize the Project will visit more than one of the uses within the Project site, particularly given that the hotel will not include a full service restaurant. This

[2] *Trip Generation*, Eighth Edition; Institute of Transportation Engineers; Washington, DC; 2008.

interaction between uses within a mixed-use development is not accounted for when the trip-generation calculations are performed on an individual land use basis. In order to account for this interaction, an overall internal trip rate of 10 percent was used for the Project.

Pass-By Trips

Not all of the trips expected to be generated by the restaurant component of the Project will be new trips on the roadway network. A significant portion of these trips will consist of pass-by trips or vehicles already traveling along Route 1A or Boardman Street for other purposes that will patronize the Project in conjunction with their trip and then continue on to their original destination. These trips are not new trips on the roadway network as a result of the Project. Statistics published by the ITE[3] indicate that on average, approximately 43 percent of the trips generated by high-turnover (sit-down) restaurants may consist of pass-by trips. However, in order to provide a conservative (high) assessment of Project-related impacts on the transportation infrastructure and in accordance with MassDOT standards, a 25 percent pass-by trip rate was applied to the restaurant component of the Project to reflect the volume of traffic that is expected to access the Project site from the existing traffic stream along Route 1A and Boardman Street.

Project-Generated Traffic Summary

Using the aforementioned methodology and applying the 10 percent internal capture rate and the 25 percent pass-by trip rate to the Project, the Project is expected to generate approximately 1,854 new vehicle trips (two-way) on an average weekday (927 vehicles entering and 927 exiting), with approximately 153 new vehicle trips (93 vehicles entering and 60 exiting) expected during the weekday morning peak-hour and 161 new vehicle trips (83 vehicles entering and 78 exiting) expected during the weekday evening peak-hour. On a Saturday, the Project is expected to generate approximately 2,240 new vehicle trips (1,120 vehicles entering and 1,120 exiting), with approximately 191 new vehicle trips (106 vehicles entering and 85 exiting) expected during the Saturday midday peak-hour.

Trip Distribution and Assignment

Given the mix of uses that are to be located within the Project site (hotel and restaurants), separate trip distribution patterns were developed for each use in order to reflect the differing nature of the traffic associated with each component. The directional distribution of generated trips to and from the hotel component of the Project is expected to have a primary orientation to and from Logan International Airport. Accordingly, 75 percent of Project-related traffic for the hotel component was assigned to/from the south along Route 1A, with 20 percent oriented to/from the north along Route 1A and 5 percent to/from the east on Boardman Street.

The directional distribution of generated trips to and from the restaurant component of the Project was determined based on a review of existing traffic patterns within the study area. In general, 48 percent of Project-related traffic for the restaurant component was assigned to/from the north along Route 1A, with 40 percent oriented to/from the south along Route 1A; 10 percent from and 12 percent to the east on Boardman Street; 1 percent from the north on Leyden Street; and 1 percent from the north on Ashley Street. The variation in the assignment of traffic along Boardman Street is due to the one-way travel restriction on both Leyden Street and Ashley Street.

[3] *Trip Generation Handbook, An ITE Recommended Practice;* Institute of Transportation Engineers; Washington DC; June 2004.

Build Condition Traffic-Volume Networks

The 2017 Build condition traffic volumes consist of the 2017 No-Build traffic volumes with the anticipated Project-generated traffic added to them. The Project was shown to result in traffic-volume increases outside of the immediate study area that is the subject of this assessment ranging from 0.0 to 3.6 percent, with vehicle increases ranging from 0 to 12 vehicles during the peak periods along Boardman Street and intersecting roadways, and from 52 to 110 vehicles along Route 1A when compared to 2017 No-Build conditions.

TRAFFIC OPERATIONS ANALYSIS

In order to assess the impact of the Project on the roadway network, traffic operations and vehicle queue analyses were performed at the study intersections under 2012 Existing, 2017 No-Build and 2017 Build conditions. This analysis has indicated that the Project will not have a significant impact on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build). The signalized intersection of Route 1A at Boardman Street was shown to be operating at or over capacity (defined as a level-of-service (LOS) E or F, respectively) during the weekday commuter peak hours independent of the Project. In an effort to improve operating conditions at the intersection and off-set the impact of the Project, specific improvements have been defined that will be implemented in conjunction with the Project (discussed in the *Recommendations* section). In addition, the Project has been designed to facilitate the future widening of Route 1A to accommodate the grade separation of the Route 1A/Boardman Street intersection.

All movements at the Project site driveways and at the other unsignalized intersections within the study area were shown to operate at a LOS “D” or better during the peak periods with minimal vehicle queuing (0 to 3 vehicles).

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersections with Boardman Street and Route 1A in accordance with American Association of State Highway and Transportation Officials (AASHTO)[4] and MassDOT standards. Based on these measurements, it was determined that the available sight lines exceed the recommended minimum sight distance requirements for the appropriate approach speed along Boardman Street and Route 1A.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and to address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and will be completed in conjunction with the Project subject to receipt of all necessary rights, permits and approvals.

[4] *A Policy on Geometric Design of Highway and Streets,* 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2011.

Project Access

Access to the Project site will be provided by way of three (3) driveways as follows: a right-turn, entrance only driveway that will intersect the east side of Route 1A approximately 350 feet south of Boardman Street; a right-turn entrance only driveway that will intersect the south side of Boardman Street approximately 400 feet east of Route 1A; and a full-access driveway that will intersect the south side of Boardman Street approximately 750 feet east of Route 1A. Secondary access to the Project site will be provided by way of a shared (with Avis Rental Car) access easement that is situated parallel to the east property line of the Project site; however, the Project has been designed with specific features to limit use of the easement by Project-related traffic. The following recommendations are offered with respect to the design and operation of the Project site driveways:

- The Project site driveways should be a minimum of 24-feet in width where two-way traffic is proposed and a minimum of 16-feet in width where one-way traffic is to be accommodated.

- Vehicles exiting the Project site should be placed under STOP-sign control with illumination (street lighting) provided.

- Appropriate signs and pavement markings should be provided at the entrance only driveways in order to regulate the flow of vehicles to right-turn entering traffic only.

- Signs and landscaping adjacent to the Project site driveway intersections should be designed and maintained so as not to restrict lines of sight.

- The shared access easement should be designed in such a manner so as to limit motorist use to access the Project site.

- Centerline pavement markings, where provided, shall consist of a double-yellow line in accordance with the centerline pavement marking standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).[5]

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the MUTCD.

Off-Site

Route 1A at Boardman Street

Under 2012 Existing conditions, this signalized intersection was shown to operate at an overall LOS “F” during the weekday morning peak-hour, at LOS “D” during the weekday evening peak-hour and at LOS “C” during the Saturday midday peak-hour. Under 2017 No-Build and Build conditions, overall operating conditions were shown to continue at LOS “F” during the weekday morning peak-hour and to degrade to LOS “E” during the weekday evening peak-hour and to LOS “D” during the Saturday midday peak-hour as a result of traffic volume increases independent of the Project. In an effort to improve operating conditions at the intersection and off-set the projected impact of the Project, the Project proponent will widen the Boardman Street westbound approach to accommodate a second left-turn lane (three lane approach consisting of a two (2) left-turn lanes and a shared through/right-turn lane) and will develop an optimal traffic

[5] *Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, DC; 2003.

signal timing and phasing plan. The improvements will include the reconstruction of the traffic system as may be necessary and will incorporate new or upgraded pedestrian and bicycle accommodations.

The Project proponent will complete the stated improvements prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights permits and approvals. With the planned improvements, overall operating conditions at the intersection were shown to be maintained at LOS “F”, “E” and “D” during the weekday morning, weekday evening and Saturday midday peak hours, respectively (no change over No-Build conditions); however, vehicle queuing on the Boardman Street westbound approach was shown to be reduced by as much as 60 percent.

In addition, in order to facilitate the long-term improvement measure at the intersection (full or partial grade separation of the intersection), the Project proponent will reserve land along the Project frontage on Route 1A for future acquisition (at fair market value) by the appropriate party(ies) to complete the improvement.

Transportation Demand Management (TDM) Program

Overall, the Project’s impact on the transportation infrastructure is expected to be adequately mitigated through the planned transportation infrastructure improvements that will be completed in conjunction with the Project; however, the following pedestrian and bicycle improvements/accommodations, Transportation Demand Management (TDM) measures, and trip reduction strategies are proposed with the goal of further minimizing the Project’s overall impact.

Pedestrian Improvements

As part of the Project, the Project proponent will define and enhance pedestrian facilities as follows:

- Sidewalks and pedestrian promenade areas will be provided within the Project site that will connect to the existing sidewalk infrastructure along Route 1A and Boardman Street.
- Lighting will be provided within the Project site and around building perimeters.
- Full handicapped access will be provided within the Project site and along proposed internal circulating roadways, including ramps for barrier-free access where appropriate; pedestrian crosswalks, pushbuttons and phasing will be provided at all signalized intersections constructed or modified in conjunction with the Project where sidewalks and crosswalks are provided; and crosswalks and associated pedestrian crossing warning signs will be installed at and in advance of pedestrian crossing locations as appropriate, and will be designed and installed in accordance with the MUTCD.
- The pedestrian traffic signal equipment (pushbuttons and indications) will be upgraded/replaced at the intersection of Route 1A at Boardman Street in order to meet current design standards for accessibility.

- Pedestrian phase timing will be reviewed and adjusted as may be necessary to meet current MUTCD design standards at all signalized intersections within the study area where such accommodations are present.

Bicycle Accommodations

The Project will include the installation of bicycle racks that will be appropriately located proximate to building entrances. A minimum of 12 exterior bicycle parking spaces will be provided for each building to be located within the Project site. The Project site driveways and circulating roadways within the Project site will provide sufficient width to accommodate bicycle travel in a shared travelled-way configuration. All traffic signals to be constructed or physically modified in conjunction with the Project will include bicycle detection and associated signs and pavement markings, if and to the extent feasible and appropriate.

Traffic Reduction Strategies

In order to reduce single occupant vehicle (SOV) travel to the Project and encourage the use of alternative modes of transportation, the Project proponent will make available to employees and hotel guests information on several traffic reduction strategies. The core of successful traffic reduction strategies are ridesharing, public transportation, bicycling, and pedestrian travel, and are discussed below.

Ridesharing Programs - Ridesharing refers to encouraging commuters to ride in vehicles with other commuters rather than drive alone to work. The most common forms of ridesharing are carpools and vanpools, and the use of public transportation services. The benefits of such programs include less congestion, reduced fuel consumption, and better air quality. Keys to the success of such programs could include:

- Carpool/vanpool matching programs;

- Dissemination of promotional materials;

- Newsletters about the program; and

- Coordination with MassRIDES which provides administrative and organizational assistance.

Rideshare programs will be encouraged to be implemented as a part of the Project through the following measures:

- A full-time Transportation Coordinator will be assigned for the Project;

- Coordinate with MassRIDES to provide commuter services to employees of the Project and to develop an informational packet of commuting alternatives to be made available to employees and to guests of the hotel;

- Provide on-site sale of Charlie cards for employees and for guests of the hotel;

- Make available to employees and to hotel guests information regarding public transportation services, maps, schedules and fare information;

- Promote the use of public transportation to hotel guests in website based materials including links to the appropriate homepages of the MBTA and MassRIDES;

- Participate in the MBTA Corporate Pass Program to the extent practical and as allowable pursuant to commercial tenant lease requirements;

- Encourage employees to participate in MassRIDES' NuRide program which rewards employees that choose to walk, bicycle, carpool, vanpool or use public transportation;

- Offer a "Guaranteed Ride Home" to all employees that commute to the Project by means other than private automobile; and

- Provide a periodic newsletter or bulletin concerning commuting options.

Annual Monitoring and Reporting Program

The Project proponent will conduct a post-development traffic monitoring and employee survey program in order to evaluate the success and to refine the elements of the TDM program. The monitoring program will include obtaining traffic volume information at the driveways serving the Project and an employee and hotel guest survey of commuting modes. The results of the annual monitoring program will be provided to the BRA, the BTD and MassDOT. The monitoring program will commence upon full completion and occupancy of the Project and will continue for a period of 2-years thereafter.

Loading and Deliveries

The Project has been designed to accommodate all loading and delivery functions on-site in a safe and efficient manner. Designated loading areas have been provided within the Project site to accommodate deliveries in a safe and efficient manner and separate from customer and pedestrian traffic. Truck routes and hours of deliveries will be scheduled to the extent possible to minimize truck activity during the commuter peak hours. Reasonable efforts will be made to use service vendors currently serving the Project vicinity in an effort to reduce the overall number of new trucks in the area.

Construction Management Plan (CMP)

An important component of the transportation plan for the Project is an effective series of measures that are designed to minimize traffic flow and safety impacts during the Project's construction phase. Summarized below are several measures which will be undertaken during the construction phase of the Project.

- The Project proponent and the general contractor will coordinate with MassDOT and BTD regarding all transportation-related construction impacts of the Project.

- Designated truck routes will be established to govern how trucks access the Project site. The goal of this commitment is to have construction trucks use only the regional highway system (i.e., Route 1A) and to avoid traveling through residential areas to the extent practical.

- Secure fencing and sidewalk staging protection (if necessary) will be provided in areas affected by construction to protect nearby pedestrian and vehicular traffic. Gate entrances into the construction area will be determined jointly with MassDOT and BTD.

- During construction activities, as required by MassDOT and/or BTD, a police detail will be employed to manage pedestrian and vehicle traffic at the construction access to the Project site.

- Secure on-site storage will be provided for tools and equipment in an effort to minimize construction-related vehicle trips to the site.

- Full or partial street closures will be avoided to the extent possible. Should a partial street closure be necessary in order to off-load construction materials and/or complete construction-related activities, the closure will be limited to off-peak periods as defined by MassDOT and BTD. Prior to the implementation of any planned construction activities within the public right-of-way, the contractor will submit to MassDOT and BTD for review and approval a traffic and pedestrian management plan.

- Construction worker parking will be provided within the Project site and expressly prohibited along Route 1A, Boardman Street or neighborhood streets.

- The general contractor will implement appropriate measures to encourage ridesharing and the use of public transportation services by employees and subcontractors working on the Project.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be constructed with minimal impact on the roadway system.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact and Access Study (TIAS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a mixed-use commercial development to be located at 415 William F. McClellan Highway (Route 1A) in East Boston, Massachusetts (hereafter referred to as the "Project"). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Route 1A and Boardman Street, as well as at the following major intersections through which Project-related traffic will travel: Route 1A at Boardman Street; Boardman Street at Leyden Street; Boardman Street at Ashley Street; Route 1A at Waldemar Avenue; and Route 1A at Addison Street.

PROJECT DESCRIPTION

As proposed, the Project will entail the construction of a 177-room all-suites business hotel and 10,030± square feet (sf) of restaurant space in two buildings to be located at 415 William F. McClellan Highway (Route 1A) in East Boston, Massachusetts. The Project site is bounded by Boardman Street to the north; commercial properties to the south; an access easement for Avis Rental Car to the east; and Route 1A to the west. Figure 1 depicts the Project site location in relation to the existing roadway network.

Access to the Project site will be provided by way of three (3) driveways as follows: a right-turn, entrance only driveway that will intersect the east side of Route 1A approximately 350 feet south of Boardman Street; a right-turn entrance only driveway that will intersect the south side of Boardman Street approximately 400 feet east of Route 1A; and a full-access driveway that will intersect the south side of Boardman Street approximately 750 feet east of Route 1A. Secondary access to the Project site will be provided by way of a shared (with Avis Rental Car) access easement that is situated parallel to the east property line of the Project site; however, the Project has been designed with specific features to limit use of the easement by Project-related traffic.

The Project will require the issuance of a State Highway Access Permit from the Massachusetts Department of Transportation (MassDOT) for access to Route 1A, a State Highway under the jurisdiction of MassDOT.

Figure 1

Site Location Map

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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STUDY METHODOLOGY

This study was prepared in consultation with the Boston Redevelopment Authority (BRA), the Boston Transportation Department (BTD) and MassDOT; was performed in accordance with the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA)/MassDOT Guidelines for Environmental Impact Report/Environmental Impact Statement Traffic Impact Assessments (TIAs), and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian and bicycle facilities; public transportation services; observations of traffic flow; and collection of peak period traffic counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A five-year time horizon was selected for analyses consistent with state guidelines for the preparation of TIAs. The traffic analysis conducted in stage two identifies existing or projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in February and April 2012. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area for the Project was developed in consultation with BTD and was selected to contain the major roadways providing access to the Project site, Route 1A and Boardman Street, as well as at the following major intersections located along these roadways through which Project-related traffic will travel: Route 1A at Boardman Street; Boardman Street at Leyden Street; Boardman Street at Ashley Street; Route 1A at Waldemar Avenue; and Route 1A at Addison Street.

The following describes the study area roadways and intersections.

Roadways

Route 1A (William F. McClellan Highway)

Route 1A (William F. McClellan Highway) is a primary arterial highway under state jurisdiction that traverses the study area in a general north-south direction and provides access to Logan International Airport and Interstate 93 (I-93) to the south of the project site. In the vicinity of the Project site, Route 1A provides four 11 to 12-foot wide travel lanes separated by a raised median, with 7-foot wide marked shoulders provided along both sides of the roadway. Sidewalks are provided along both sides of Route 1A within the study area with illumination provided by way of street lights mounted on wood poles. The posted speed limit along Route 1A varies between 40 and 45 miles per hour (mph) within the study area. Land use along Route 1A within the study area consists of residential and commercial properties, and areas of open and wooded space.

Boardman Street

Boardman Street is an urban minor arterial roadway under City jurisdiction that traverses the study area in a general east-west direction. Within the study area, Boardman Street provides two 16 to 18-foot wide travel lanes separated by a double-yellow centerline with no marked shoulders provided. A sidewalk is provided along both sides of Boardman Street within the study area, with illumination provided by way of street lights mounted on wood poles. A posted speed limit is not provided along Boardman Street; however, given the nature of the abutting land use (thickly settled residential neighborhood), the "prima facie" speed limit is 30 mph.[6] Land use along Boardman Street within the study area consists of the Project site, a community center and playground, and residential and commercial properties.

__**Intersections**__

Route 1A at Boardman Street

Boardman Street and a private driveway intersect Route 1A from the east and west, respectively, to form this four-legged intersection under traffic signal control. The Route 1A northbound approach consists of an 11.5-foot wide left-turn lane, two 11.5-foot wide through travel lanes, and a 10-foot wide right-turn lane with a 1-foot wide marked shoulder provided. The Route 1A southbound approach consists of a 12-foot wide left-turn lane, an 11.5-foot wide through travel lane, and an 11-foot wide shared through/right-turn lane with a 7-foot wide marked shoulder provided. The directions of travel along Route 1A are separated by a raised median. The Boardman Street westbound approach consists of a 10-foot wide shared left-turn/through travel lane and a 10-foot wide right-turn lane with no marked shoulder provided. The directions of travel along Boardman Street are separated by a raised island at the intersection and by way of a double-yellow centerline to the east. The private driveway eastbound approach consists of a 12-foot wide left-turn lane and a 13-foot wide shared through/right-turn lane with a 1-foot wide marked shoulder provided. The directions of travel along the private driveway are separated by a double-yellow centerline. Sidewalks are provided along all sides of the intersection with crosswalks provided across the north, east and west legs of the intersection. Illumination is provided by way of street lights mounted on wood poles. Land use in the vicinity consists of the Project site and commercial properties. The traffic signal operates in a four-phase, fully-actuated mode, with a protected left-turn phase for Route 1A and a westbound advance phase provided for Boardman Street. Pedestrian traffic signal equipment is provided with concurrent pedestrian phasing.

[6] The "prima facie" speed limit is defined in Chapter 90 § 17 of the Massachusetts General Laws as that rate of speed greater than which is considered reasonable or proper to operate motor vehicle under a defined roadway type and abutting land use.

Boardman Street at Leyden Street

Leyden Street intersects Boardman Street from the northeast to form this three-legged, Y-type, unsignalized intersection under stop control. The Boardman Street east and westbound approaches consist of a single 16 to 17-foot wide general-purpose travel lane with no marked shoulders provided. The directions of travel along Boardman Street are separated by a double-yellow centerline. Leyden Street is a 26-foot wide roadway that accommodates one-way southwestbound travel (toward Boardman Street). The Leyden Street southwestbound approach is under assumed stop control (a STOP-sign is not provided). Sidewalks are provided along all both sides of the intersecting roadways. Land use in the vicinity of the intersection consists of the Project site and residential properties.

Boardman Street at Ashley Street

Ashley Street intersects Boardman Street from the northeast to form this three-legged, Y-type, unsignalized intersection under stop control. The Boardman Street east and westbound approaches consist of a single 16 to 18-foot wide general-purpose travel with no marked shoulders provided. The directions of travel along Boardman Street are separated by a double-yellow centerline. Ashley Street is a 34.5-foot wide roadway that accommodates one-way southwestbound travel (toward Boardman Street) with parking permitted along both sides of the roadway. The Ashley Street southwestbound approach is under YIELD-sign control. Sidewalks are provided along both sides of the intersecting roadways, with a crosswalk provided across the Boardman Street east leg of the intersection. A pedestrian traffic signal is provided at the intersection which stops vehicles traveling along Boardman Street upon pushbutton activation to allow pedestrians to cross the intersection. Land use in the vicinity of the intersection consists of the Project site, a community center and residential and commercial properties.

Route 1A at Waldemar Avenue

Waldemar Avenue intersects Route 1A from the east to form this three-legged, T-type, unsignalized intersection under stop control. The Route 1A northbound approach consists of one 11-foot wide through travel lane and one 11-foot wide through/right-turn lane with an 8-foot wide marked shoulder provided. The Route 1A southbound approach consists of two 11-foot wide through travel lanes with an 8-foot wide marked shoulder provided. The directions of travel along Route 1A are separated by a raised median that prohibits left-turn movements from entering or exiting Waldemar Avenue. The Waldemar Avenue westbound approach consists of a 17-foot wide right-turn lane with no marked shoulder provided. The Waldemar Avenue westbound approach is under assumed stop control (a STOP-sign is not provided). The directions of travel along Waldemar Avenue are separated by a double-yellow centerline. Sidewalks are provided along both sides of the intersecting roadways with a crosswalk provided across Waldemar Avenue. Land use in the vicinity of the intersection consists of residential and commercial properties.

Route 1A at Addison Street

Addison Street intersects Route 1A from the east to form this three-legged, T-type, unsignalized intersection under stop control. The Route 1A northbound approach consists of one 11-foot wide through travel lane and one 11-foot wide through/right-turn lane with a 7-foot wide marked shoulder provided. The Route 1A southbound approach consists of two 11-foot wide through travel lanes with a 7-foot wide marked shoulder provided. The directions of travel along Route 1A are separated by a raised median that prohibits left-turn movements from entering or exiting Addison Street. Addison Street is a 33-foot wide roadway that accommodates two-way travel with no marked centerline or shoulders provided and parking prohibited along the south side of the roadway. The Addison Street westbound approach is under assumed stop control (a STOP-sign is not provided). Sidewalks are provided along both sides of the intersecting roadways. Land use in the vicinity of the intersection consists of residential and commercial properties.

EXISTING TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) and vehicle classification counts were completed at the study intersections in February and April 2012 during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods while public schools were in regular session, and during the Saturday midday (11:00 AM to 2:00 PM) peak period. These time periods were selected for analysis purposes as they are representative of the peak traffic volume hours for both the Project and the adjacent roadway network.

Traffic Volume Adjustments

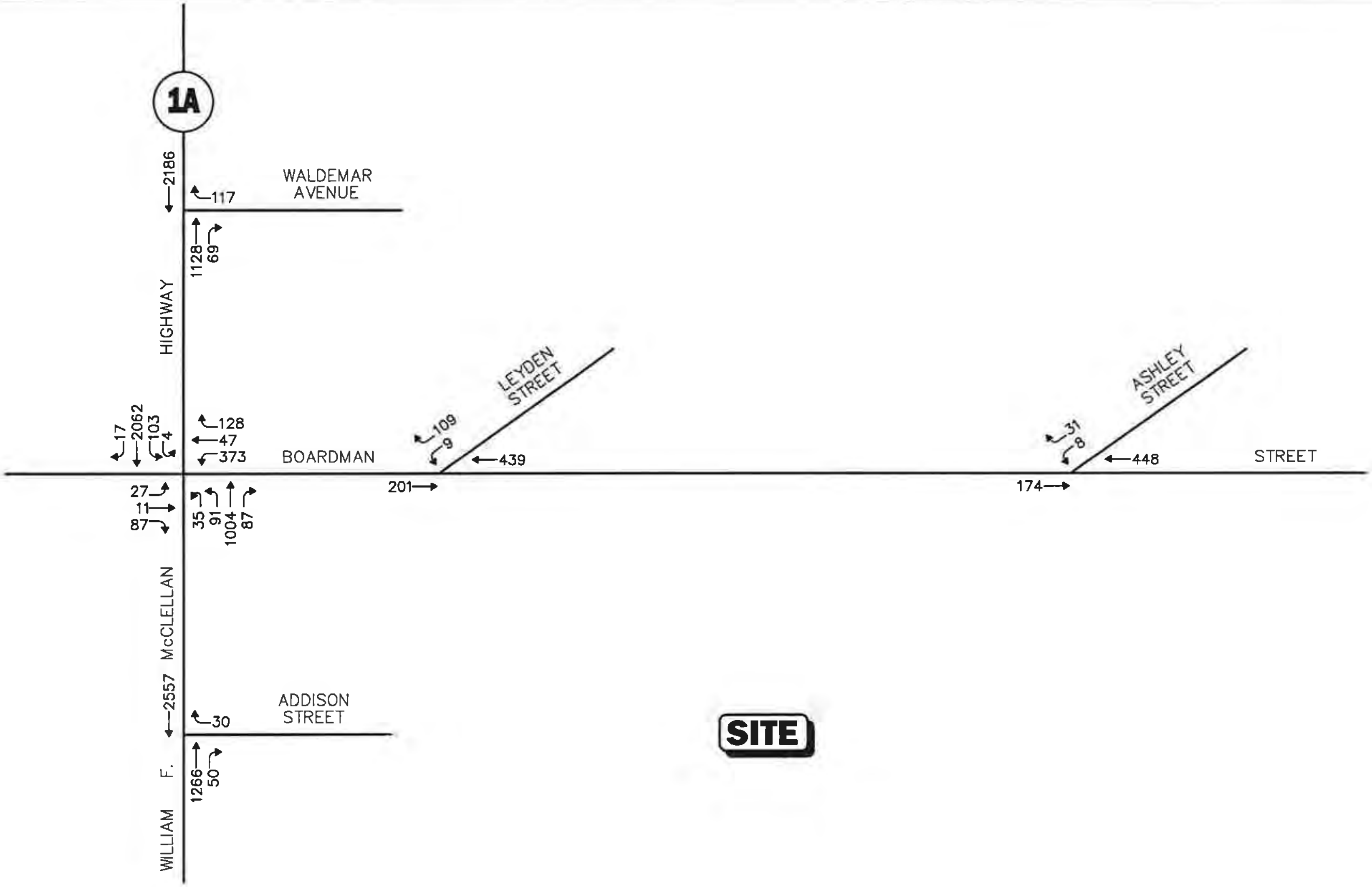
In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, MassDOT weekday seasonal factors for Group 6 roadways (urban arterials, collectors and rural arterials, the MassDOT functional classification for Route 1A and Boardman Street) were reviewed.[7] Based on a review of this data, it was determined that traffic volumes for the months of February and April are approximately one (1) percent and nine (9) percent above average-month conditions, respectively, and, therefore, were not adjusted downward in order to provide a conservative (above-average) analysis condition. The 2012 Existing traffic volumes are graphically depicted on Figures 2, 3 and 4 for the weekday morning, weekday evening and Saturday midday peak hours, respectively.

A review of the peak period traffic counts indicates that the weekday morning peak-hour generally occurs between 7:00 and 8:00 AM, with the weekday evening peak-hour generally occurring between 4:15 and 5:15 PM and the Saturday midday peak-hour generally occurring between 12:00 and 1:00 PM.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in February and April 2012. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities. Sidewalks are provided along both sides of the study roadways, with marked crosswalks and pedestrian traffic signal equipment provided at the Route 1A/Boardman Street and Boardman Street/Ashley Street (pedestrian signal) intersections. The location of the existing pedestrian facilities is depicted on Figure 5.

[7] MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2007 Weekday Seasonal Factors, Group 6 – Urban Arterials, Collectors and Rural Arterials.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 2

2012 Existing
Weekday Morning
Peak Hour Traffic Volumes

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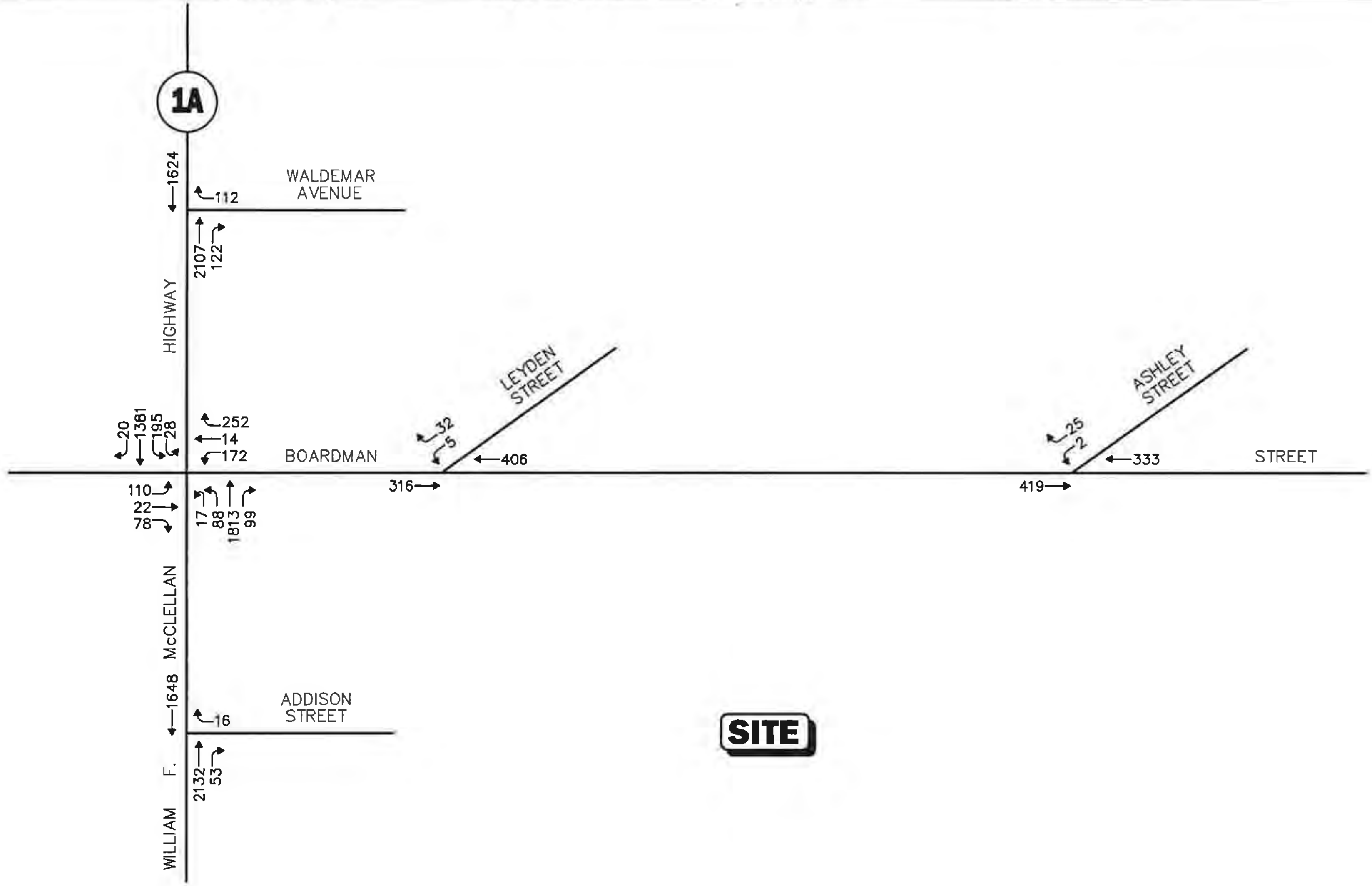

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 3

2012 Existing Weekday Evening Peak Hour Traffic Volumes

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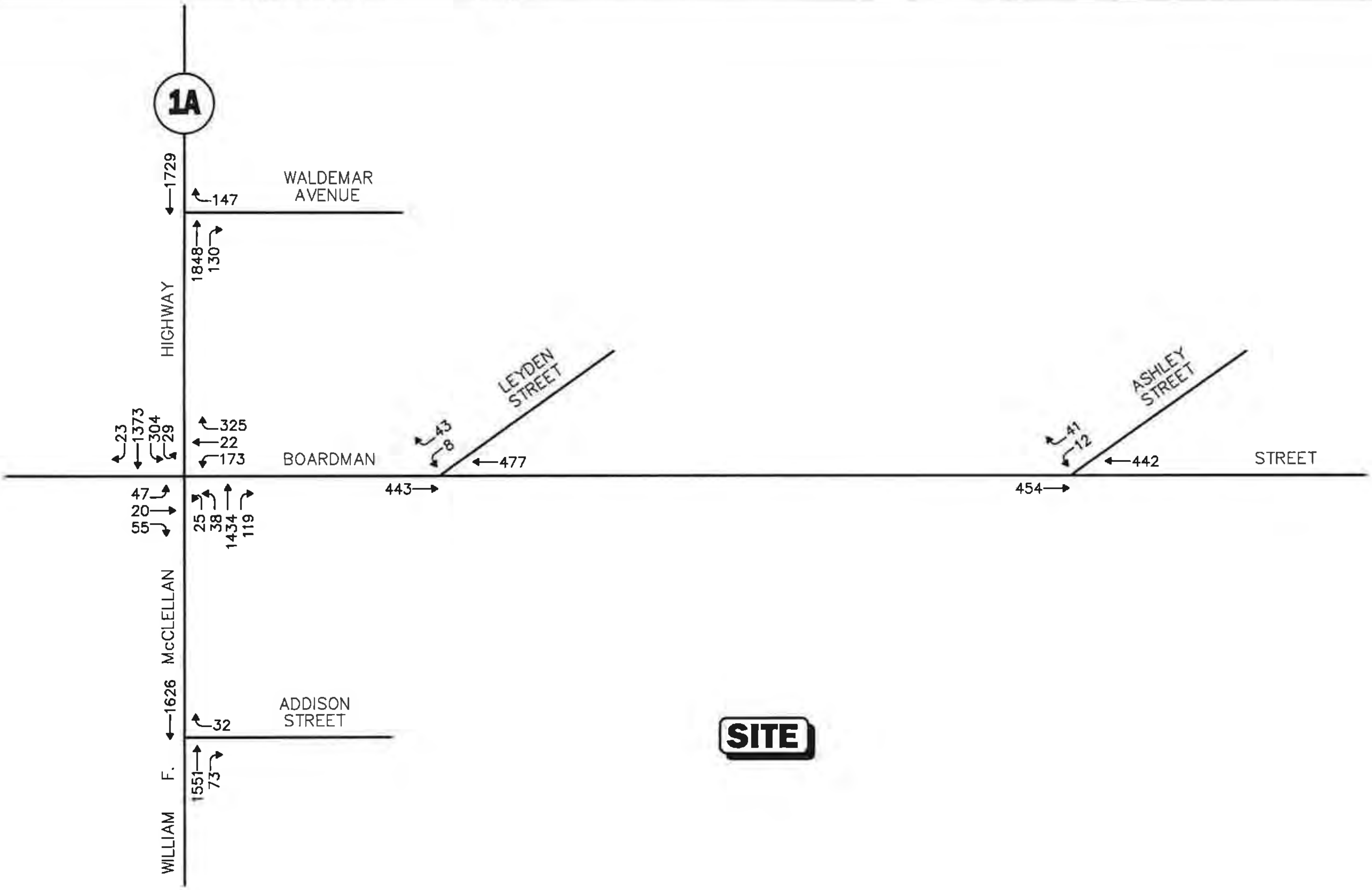

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 4

2012 Existing
Saturday Midday
Peak Hour Traffic Volumes

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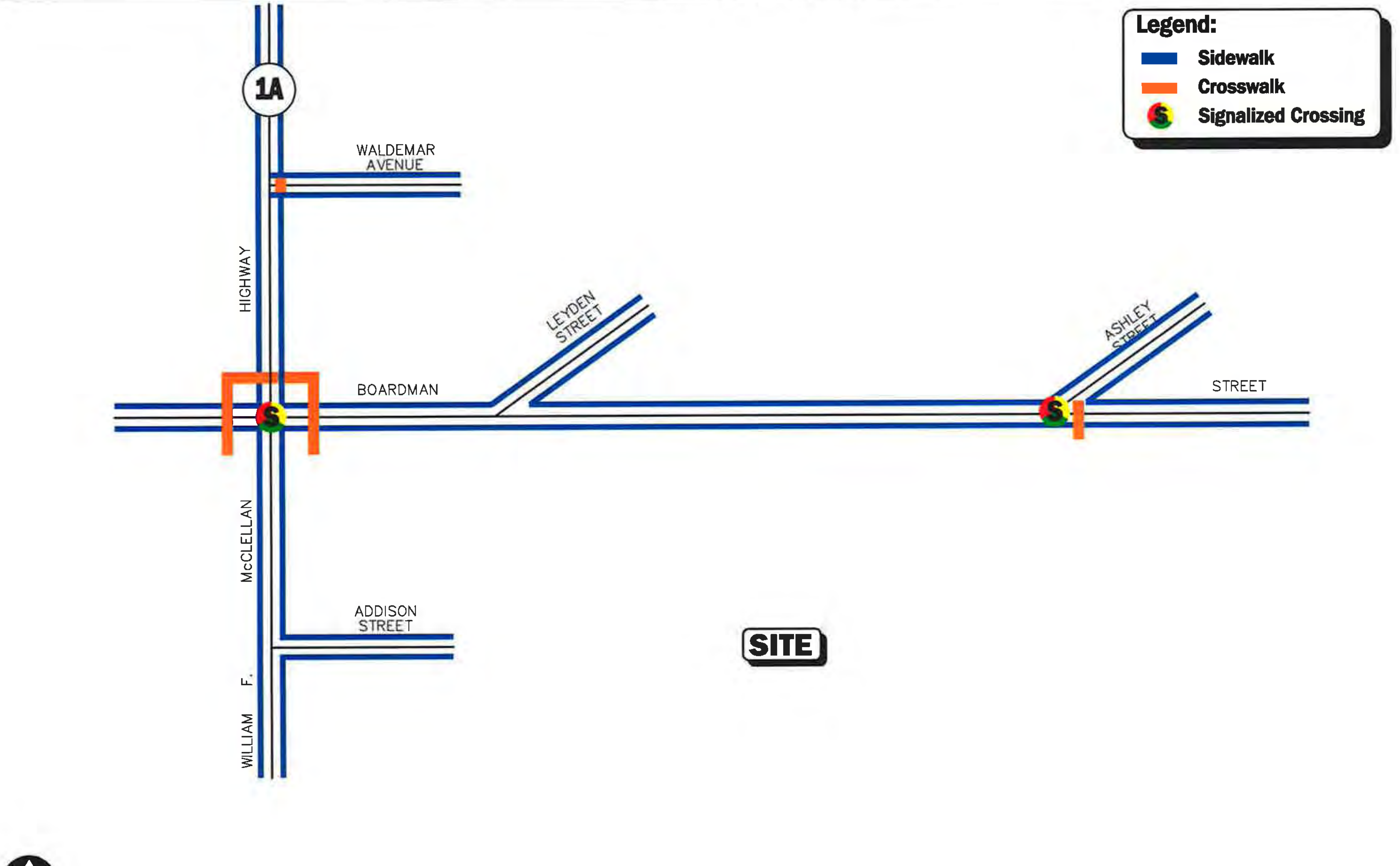

Figure 5

Pedestrian and Bicycle Facilities

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In conjunction with the manual TMCs, pedestrian and bicycle counts were also performed during the weekday morning (7:00 to 9:00 AM), weekday evening (4:00 to 6:00 PM) and Saturday midday (11:00 AM to 2:00 PM) peak periods. The 2012 Existing pedestrian volumes are graphically depicted on Figures 6, 7 and 8 for the weekday morning, weekday evening and Saturday midday peak hours, respectively. Bicycle activity within the study area was found to range from 0 to 4 bicycles over the course of an hour, with the majority of bicycle activity observed along Route 1A during the weekday peak periods.

At present, there are no formal existing bicycle facilities that were identified within the immediate study area; however, the study area roadways provide sufficient width (combined travel lane and shoulder) to support bicycle travel in a shared traveled-way configuration. The traffic signal system at the Route 1A/Boardman Street intersection does not include bicycle detection at the present time.

PUBLIC TRANSPORTATION

The study area and the Project site are served by a number of public transportation services provided by the Massachusetts Bay Transportation Authority (MBTA), including fixed-route bus service and subway service on the Blue Line. MBTA Bus Route 120, *Orient Heights – Maverick Station via Bennington Street*, provides service along Boardman Street on weekdays and weekends between 5:25 AM and 1:20 AM. The closest bus stops to the Project site are located at the Route 1A/Boardman Street and Boardman Street/Leyden Street intersections, directly adjacent to the Project site. The Blue Line subway service operates between Wonderland Station in Revere and Bowdoin Station in downtown Boston, and provides service to Logan International Airport. The closest Blue Line station to the Project site is Orient Heights Station which is located off Bennington Street and approximately ½-mile from the Project site. At Orient Heights Station, passengers can connect to Bus Route 120 and access the Project site. Service on the Blue Line is provided on weekdays and Saturday between 5:15 AM and 12:30 AM, and on Sunday between 6:00 AM and 12:30 AM. The MBTA service map, schedules and fare information are provided in the Appendix.

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on Route 1A and Boardman Street in the vicinity of the Project site using a radar gun. Table 1 summarizes the vehicle travel speed measurements.

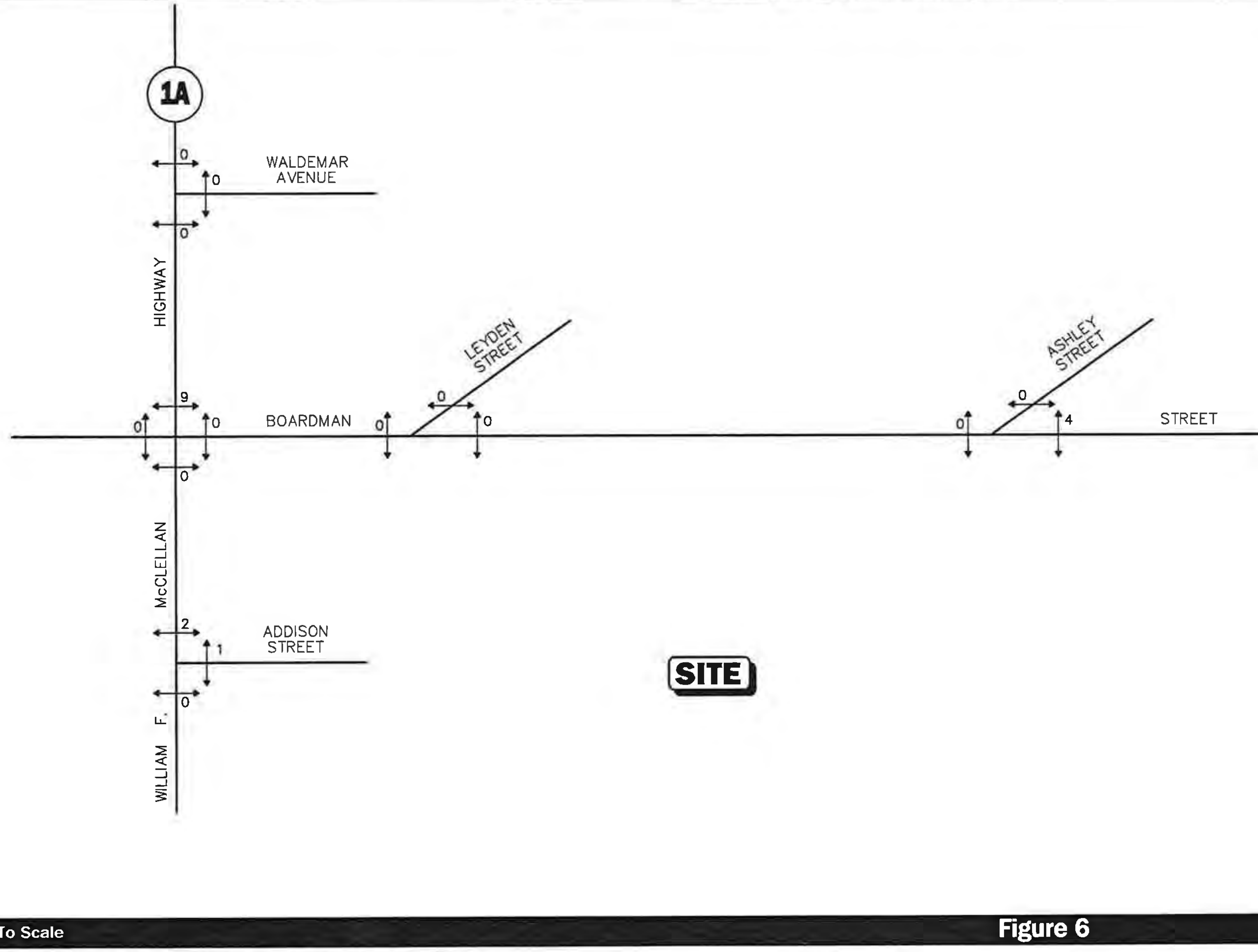

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Figure 6

2012 Existing Weekday Morning Peak Hour Pedestrian Volumes

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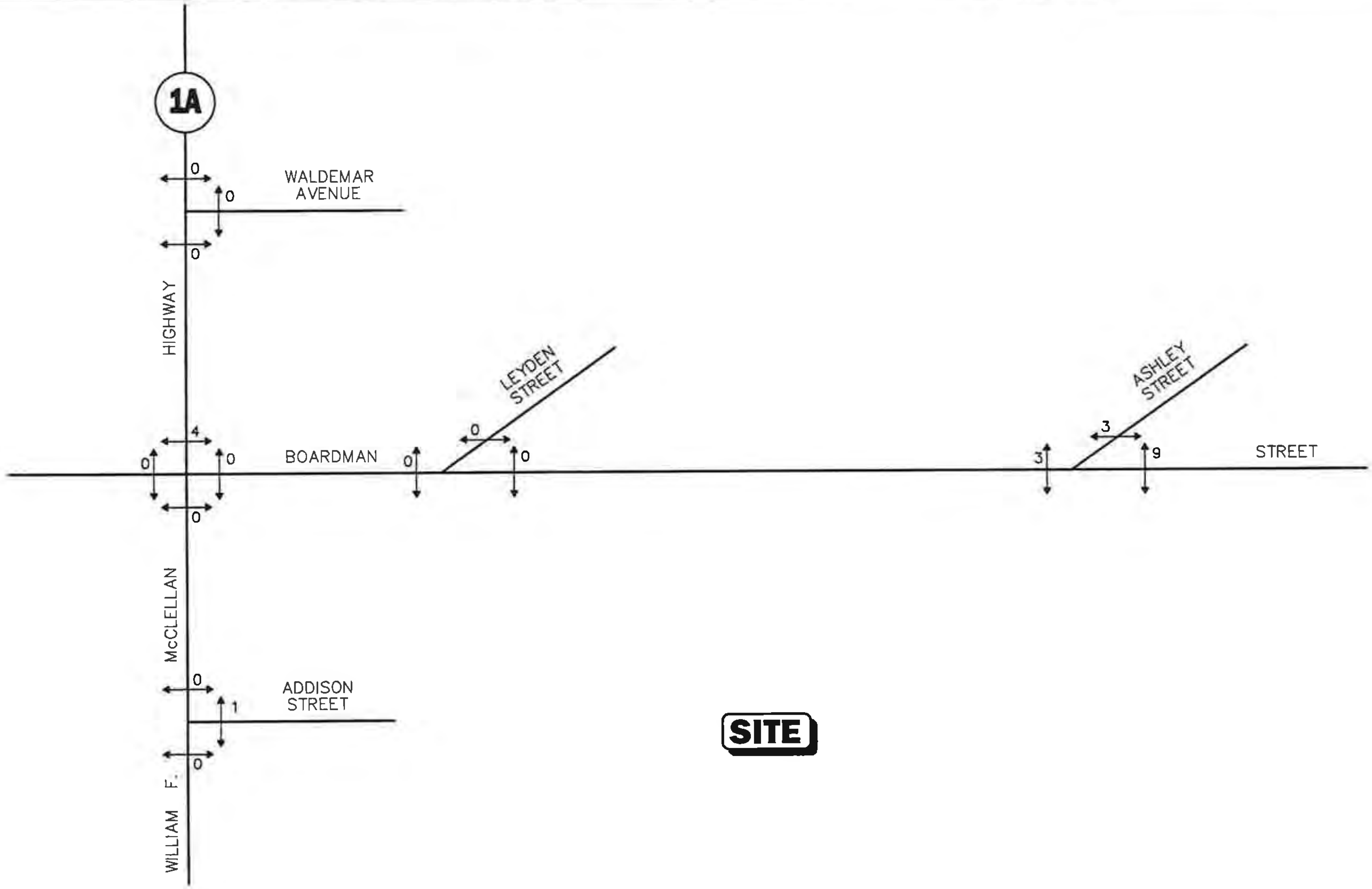

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

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Figure 7

2012 Existing Weekday Evening Peak Hour Pedestrian Volumes

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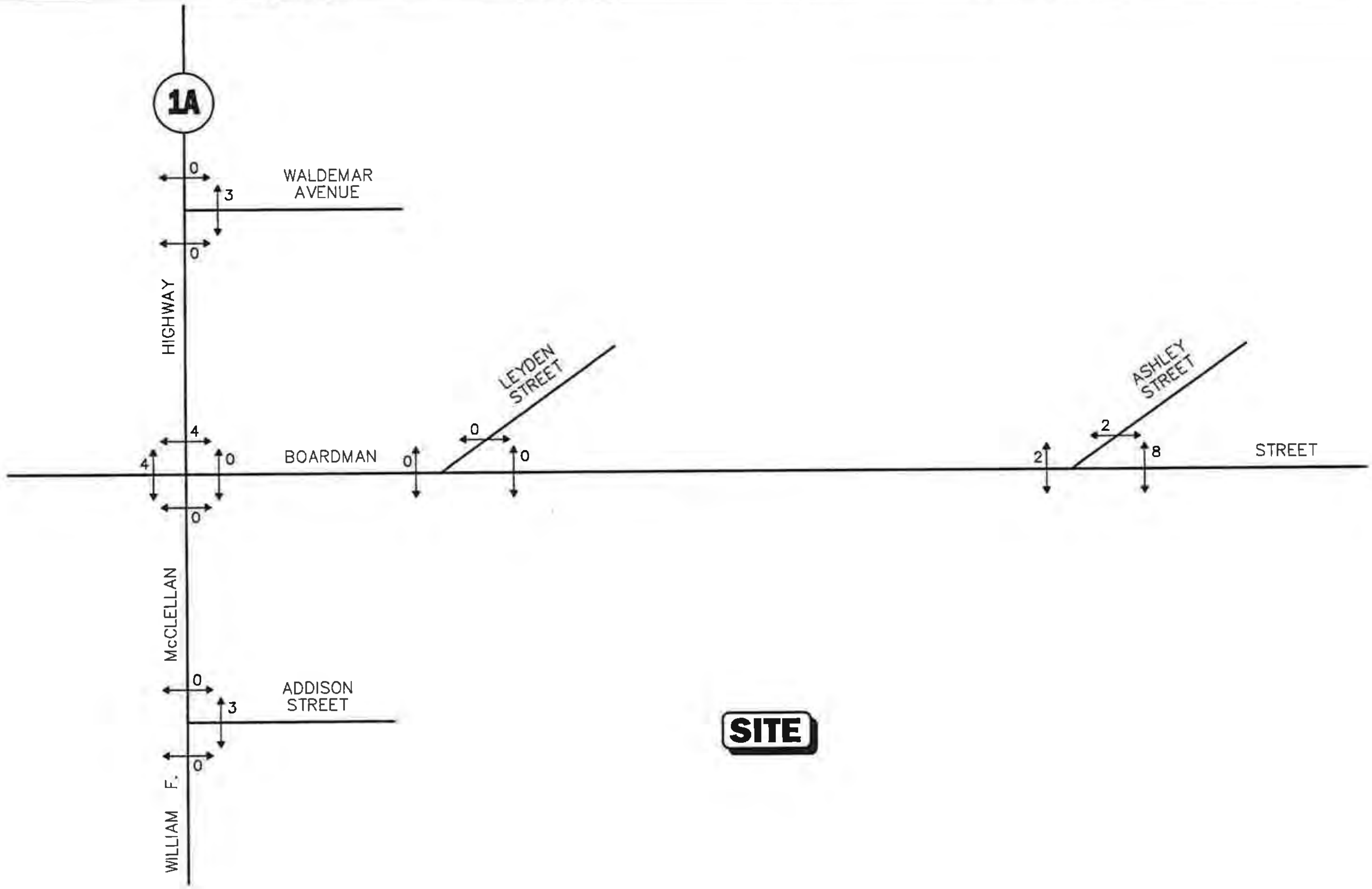

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 8

2012 Existing Saturday Midday Peak Hour Pedestrian Volumes

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Table 1
VEHICLE TRAVEL SPEED MEASUREMENTS

	Route 1A		Boardman Street	
	Northbound	Southbound	Eastbound	Westbound
Mean Travel Speed (mph)	43	40	33	33
85^{th} Percentile Speed (mph)	46	45	37	36
Posted Speed Limit (mph)	40	40	NP	NP

mph = miles per hour.
NP = not posted.

As can be seen in Table 1, the mean (average) vehicle travel speed along Route 1A in the vicinity of the Project site was found to be approximately 42 mph. The average measured 85^{th} percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 46 mph, or 6 mph above the posted speed limit (40 mph). The 85^{th} percentile speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits.

The mean vehicle travel speed along Boardman Street in the vicinity of the Project site was found to be approximately 33 mph, with the average measured 85^{th} percentile vehicle travel speed found to be approximately 37 mph, or 7 mph above the "prima facie" speed (30 mph). [8]

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent three-year period available (2007 through 2009, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, and day of occurrence, and presented in Table 2.

As can be seen in Table 2, the signalized intersection of Route 1A at Boardman Street experienced a total of ten (10) reported crashes over the three-year review period, the majority of which resulted in property damage only; occurred on a weekday; and were reported as rear-end-type collisions. One crash each was reported at the intersections of Boardman Street with Leyden Street and Ashley Street, and at the Route 1A/Addison Street intersection over the three-year review period, with no crashes reported at the Route 1A/Waldemar Avenue intersection. All of the study intersections were found to have a motor vehicle crash rate below the MassDOT average for a signalized or unsignalized intersection, as appropriate, for the MassDOT Highway Division District in which the intersections are located (District 6), indicating no inherent safety deficiencies. No fatal motor vehicle crashes were reported at the study intersections over the three-year review period. The detailed MassDOT Crash Rate Worksheets are provided in the Appendix.

[8] Ibid 1.

Table 2
MOTOR VEHICLE CRASH DATA SUMMARY[a]

	Route 1A/ Boardman Street	Boardman Street/ Leyden Street	Boardman Street/ Ashley Street	Route 1A/ Waldemar Avenue	Route 1A/ Addison Street
Year:					
2007	4	1	0	0	0
2008	4	0	0	0	0
2009	2	0	1	0	1
Total	10	1	1	0	1
Average	3.33	0.33	0.33	0.00	0.33
Rate[b]	0.19	0.11	0.11	0.00	0.04
Significant?[c]	No	No	No	No	No
Type:					
Angle	0	0	0	0	0
Rear-End	6	0	0	0	1
Head-On	1	0	0	0	0
Sideswipe	1	0	1	0	0
Unknown	2	1	0	0	0
Total	10	1	1	0	1
Severity:					
Property Damage Only	8	1	1	0	0
Personal Injury	2	0	0	0	1
Fatal	0	0	0	0	0
Total	10	1	1	0	1
Conditions:					
Clear	7	1	0	0	1
Cloudy	0	0	0	0	0
Rain	2	0	0	0	0
Snow/Ice	1	0	1	0	0
Total	10	1	1	0	1
Lighting:					
Daylight	8	1	0	0	0
Dawn/Dusk	0	0	0	0	1
Dark (Road Lit)	1	0	1	0	0
Dark (Road Unlit)	1	0	0	0	0
Total	10	1	1	0	1
Day of Week:					
Monday through Friday	8	1	1	0	1
Saturday	0	0	0	0	0
Sunday	2	0	0	0	0
Total	10	1	1	0	1

[a]Source: MassDOT Safety Management/Traffic Operations Unit records, 2007 through 2009.
[b]Crash rate per million vehicles entering the intersection.
[c]The intersection crash rate is significant if it is found to exceed 0.57 crashes per million vehicles entering the intersection for unsignalized intersections and 0.77 crashes per million vehicles entering the intersection for signalized intersections as defined by MassDOT for the MassDOT Highway Division District in which the project is located (District 6).

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2017, which reflects a five-year planning horizon consistent with State traffic study guidelines. Independent of the Project, traffic volumes on the roadway network in the year 2017 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2017 No-Build traffic volumes reflect 2017 Build traffic volume conditions with the Project.

FUTURE TRAFFIC GROWTH

Future traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic; however, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

Specific Development by Others

The BRA and BTD were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on these discussions, no projects were identified to be planned within the study area at this time. It should be noted that there are plans to redevelop the Suffolk Downs racetrack; however, definitive plans for the redevelopment have not been identified at this time.

General Background Traffic Growth

Based on discussions with BTD, a 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area. For reference, traffic volumes within the study area have experienced a general decline based on a review of historic traffic count data available from MassDOT.

Roadway Improvement Projects

MassDOT and the City of Boston were contacted in order to determine if there were any planned roadway improvement projects expected to be completed within the study area. Based on these discussions, no roadway improvements outside of routine maintenance activities were identified to be planned within the study area at this time. Improvements have been identified at a conceptual level for the Route 1A/Boardman Street intersection which would entail either a partial or full grade separation of the intersection. These plans will likely advance as a part of the redevelopment of the Suffolk Downs racetrack and are not reflected in this assessment.

No-Build Traffic Volumes

The 2017 No-Build condition peak-hour traffic-volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2012 Existing peak-hour traffic volumes. The resulting 2017 No-Build weekday morning, weekday evening and Saturday midday peak-hour traffic volumes are shown on Figures 9, 10 and 11, respectively.

PROJECT-GENERATED TRAFFIC

Design year (2017 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadway. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the construction of a 177-room all-suites business hotel and 10,030± square feet (sf) of restaurant space in two buildings. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)[9] were reviewed. ITE Land Use Codes (LUCs) 311, *All Suites Hotel*, and 932, *High-Turnover (Sit-Down) Restaurant*, were used to develop the traffic characteristics of the Project.

Given the availability of public transportation to the Project site (bus and subway) and the interconnected pedestrian facilities that link the Project site to the proximate neighborhood area, it is expected that a portion of the trips generated by the Project will be made by public transportation or will include pedestrian/bicycle trips. However, in order to present a conservative (high) estimate of Project-related impacts on the transportation infrastructure, all of the trips associated with the Project were considered to be vehicle trips.

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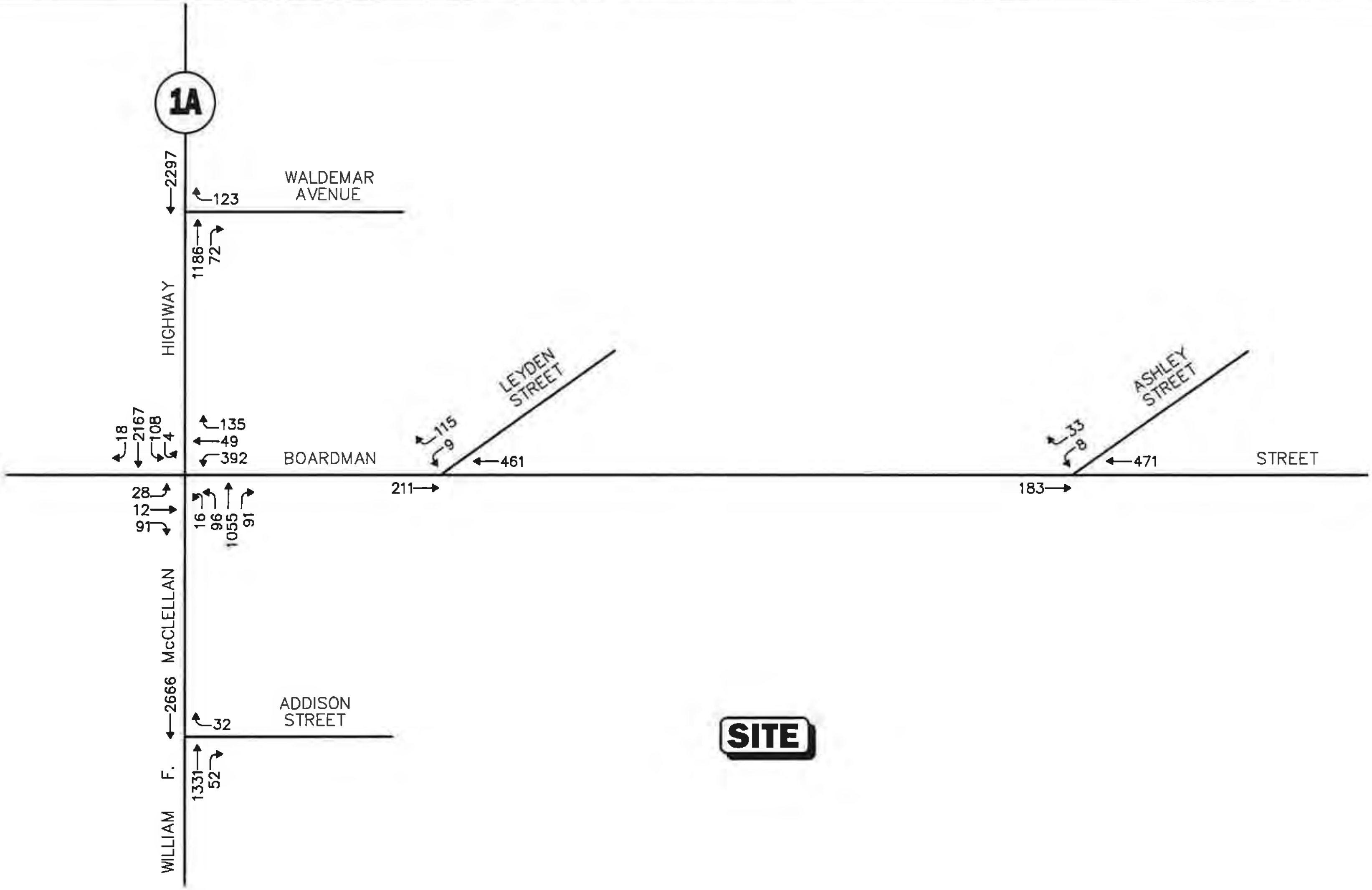
[9]Ibid 2.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 9

2017 No-Build Weekday Morning Peak Hour Traffic Volumes

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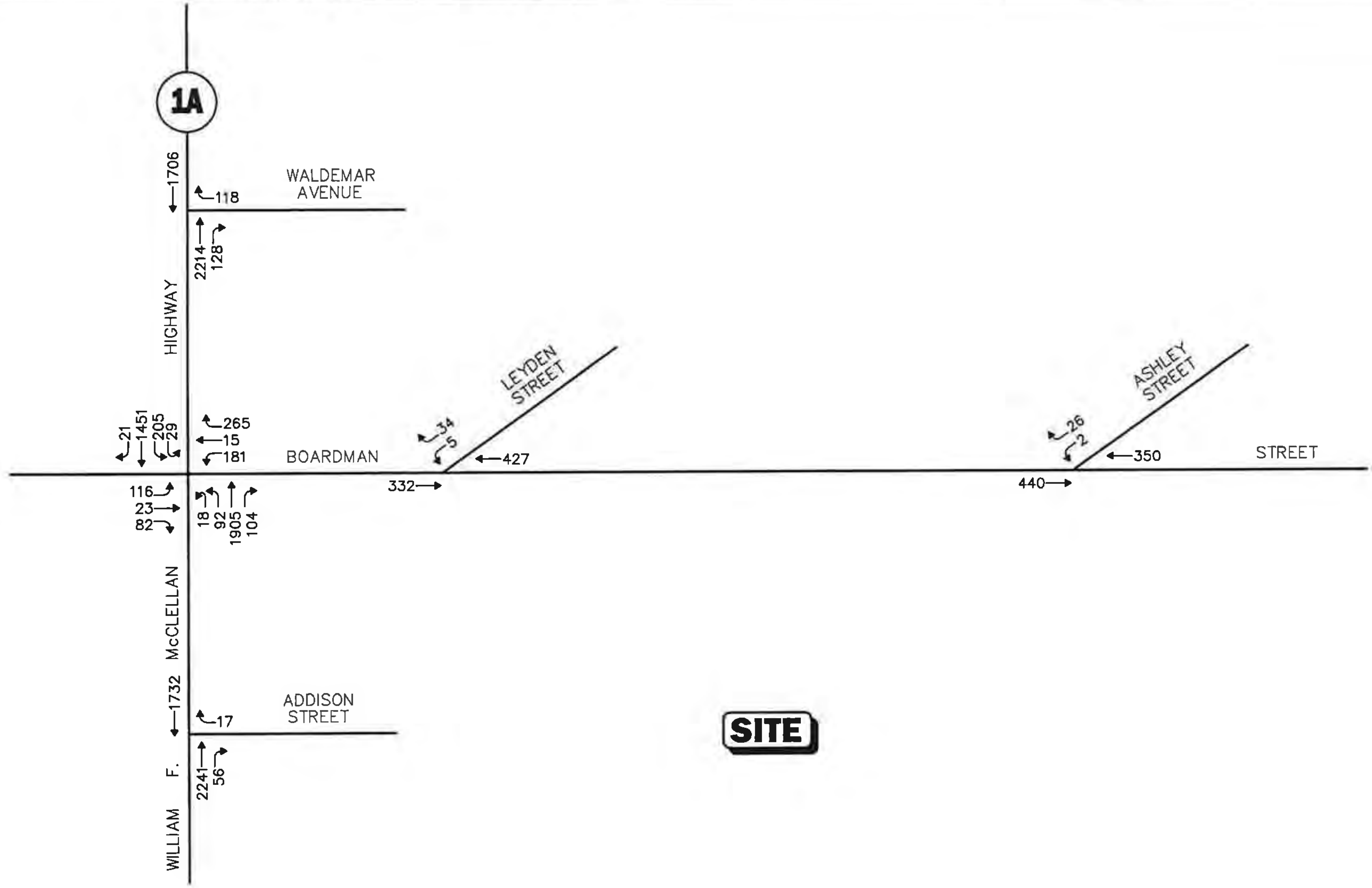

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 10

2017 No-Build Weekday Evening Peak Hour Traffic Volumes

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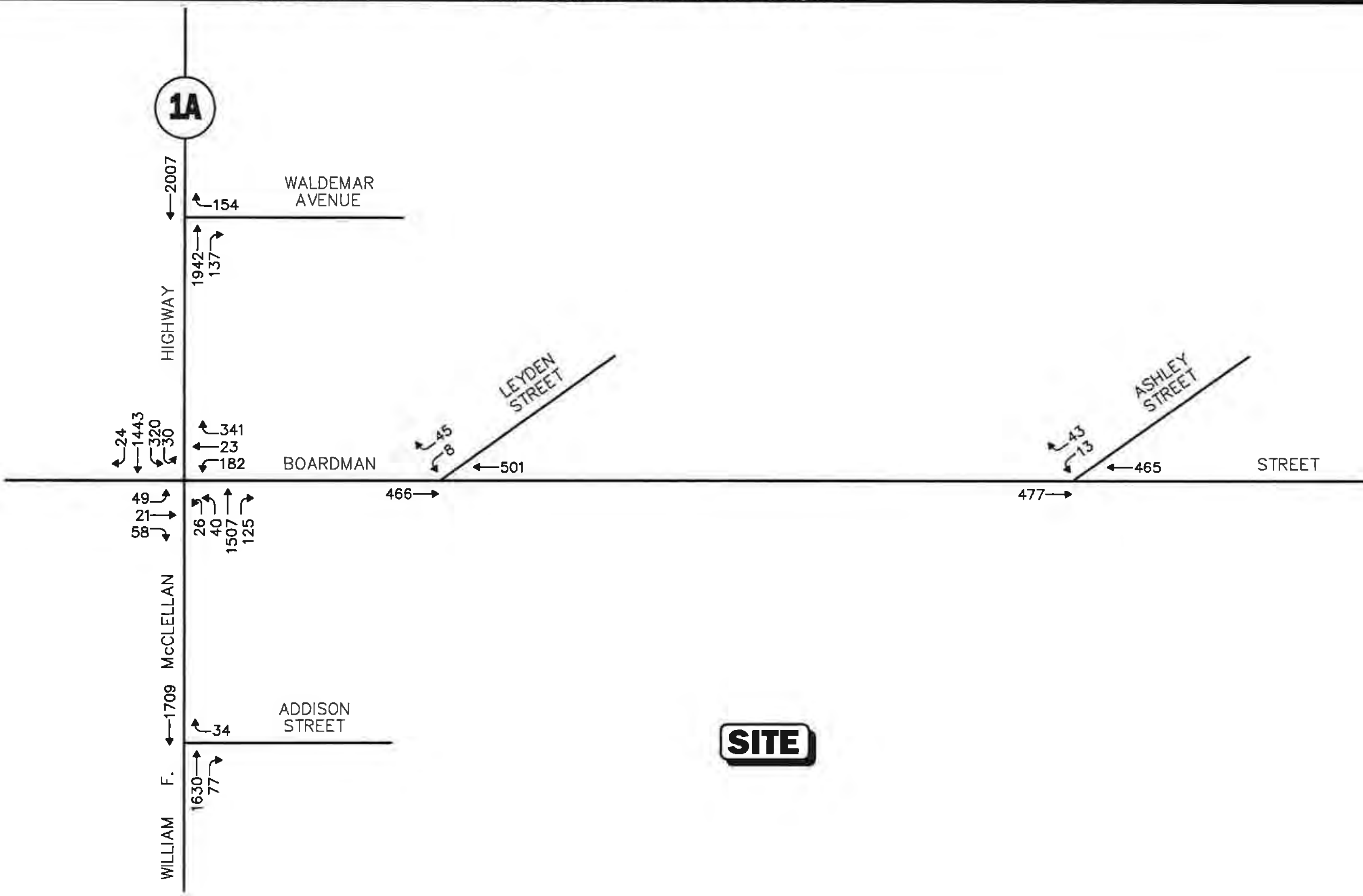

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 11

2017 No-Build
Saturday Midday
Peak Hour Traffic Volumes

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Internal Trips

Given the mix of uses to be integrated into the Project (hotel and restaurant), it is expected that a portion of the customers that patronize the Project will visit more than one of the uses within the Project site, particularly given that the hotel will not include a full service restaurant. This interaction between uses within a mixed-use development is not accounted for when the trip-generation calculations are performed on an individual land use basis. In order to account for this interaction, an overall internal trip rate of 10 percent was used for the Project.

Pass-By Trips

Not all of the trips expected to be generated by the restaurant component of the Project will be new trips on the roadway network. A significant portion of these trips will consist of pass-by trips or vehicles already traveling along Route 1A or Boardman Street for other purposes that will patronize the Project in conjunction with their trip and then continue on to their original destination. These trips are not new trips on the roadway network as a result of the Project. Statistics published by the ITE[10] indicate that on average, approximately 43 percent of the trips generated by high-turnover (sit-down) restaurants may consist of pass-by trips. However, in order to provide a conservative (high) assessment of Project-related impacts on the transportation infrastructure and in accordance with MassDOT standards, a 25 percent pass-by trip rate was applied to the restaurant component of the Project to reflect the volume of traffic that is expected to access the Project site from the existing traffic stream along Route 1A and Boardman Street.

Table 3 summarizes the anticipated traffic characteristics of the Project using the above methodology.

[10] Ibid 3.

Table 3
TRIP GENERATION SUMMARY

Time Period/Direction	Hotel Component			Restaurant Component					
	(A) Hotel (177 Rooms)[a]	(B = A x 0.10) Internal Trips 10%	(C = A - B) New Trips	(D) Restaurant (10,030 sf)[b]	(E = D x 0.10) Internal Trips 10%	(F = D - E) External Trips	(G = F x 0.25) Pass-By Trips 25%	(H = F - G) New Trips	(I = C + H) Total New Project Trips
Average Weekday Daily:									
Entering	552	55	497	638	64	574	144	430	927
Exiting	552	55	497	638	64	574	144	430	927
Total	1,104	110	994	1,276	128	1,148	288	860	1,854
Weekday Morning Peak-Hour:									
Entering	57	5	52	60	6	54	13	41	93
Exiting	28	5	23	56	6	50	13	37	60
Total	85	10	75	116	12	104	26	78	153
Weekday Evening Peak-Hour:									
Entering	41	5	36	66	6	60	13	47	83
Exiting	56	5	51	46	6	40	13	27	78
Total	97	10	87	112	12	100	26	74	161
Saturday Daily:									
Entering	650	65	585	794	80	714	179	535	1,120
Exiting	650	65	585	794	80	714	179	535	1,120
Total	1,300	130	1,170	1,588	160	1,428	358	1,070	2,240
Saturday Midday Peak-Hour:									
Entering	60	6	54	75	7	68	16	52	106
Exiting	48	6	42	66	7	59	16	43	85
Total	108	12	96	141	14	127	32	95	191

[a]ITE LUC 311 – *All Suites Hotel*.
[b]ITE LUC 932 – *High-Turnover (Sit-Down) Restaurant.*

Project-Generated Traffic Volume Summary

As can be seen in Table 3, the Project is expected to generate approximately 1,854 new vehicle trips (two-way) on an average weekday (927 vehicles entering and 927 exiting), with approximately 153 new vehicle trips (93 vehicles entering and 60 exiting) expected during the weekday morning peak-hour and 161 new vehicle trips (83 vehicles entering and 78 exiting) expected during the weekday evening peak-hour. On a Saturday, the Project is expected to generate approximately 2,240 new vehicle trips (1,120 vehicles entering and 1,120 exiting), with approximately 191 new vehicle trips (106 vehicles entering and 85 exiting) expected during the Saturday midday peak-hour.

Trip Distribution and Assignment

Given the mix of uses that are to be located within the Project site (hotel and restaurants), separate trip distribution patterns were developed for each use in order to reflect the differing nature of the traffic associated with each component. The directional distribution of generated trips to and from the hotel component of the Project is expected to have a primary orientation to and from Logan International Airport. The directional distribution of generated trips to and from the restaurant component of the Project was determined based on a review of existing traffic patterns within the study area. The general trip distribution pattern for the Project is summarized in Table 4 and is graphically depicted on Figures 12 and 13 for the hotel and restaurant components, respectively. The peak-hour traffic volumes expected to be generated by the Project were assigned onto the study area roadway network as shown on Figures 14, 15 and 16 for the weekday morning, weekday evening and Saturday midday peak hours, respectively. The variation in the assignment of traffic along Boardman Street is due to the one-way travel restriction on both Leyden Street and Ashley Street.

Table 4
TRIP-DISTRIBUTION SUMMARY

		Percent (To/From)	
Roadway	Direction (To/From)	Hotel	Restaurant
Route 1A	North	20/20	48/48
Route 1A	South	75/75	40/40
Boardman Street	East	5/5	10/12
Leyden Street	North	0/0	1/0
Ashley Street	North	0/0	1/0
TOTAL		100/100	100/100

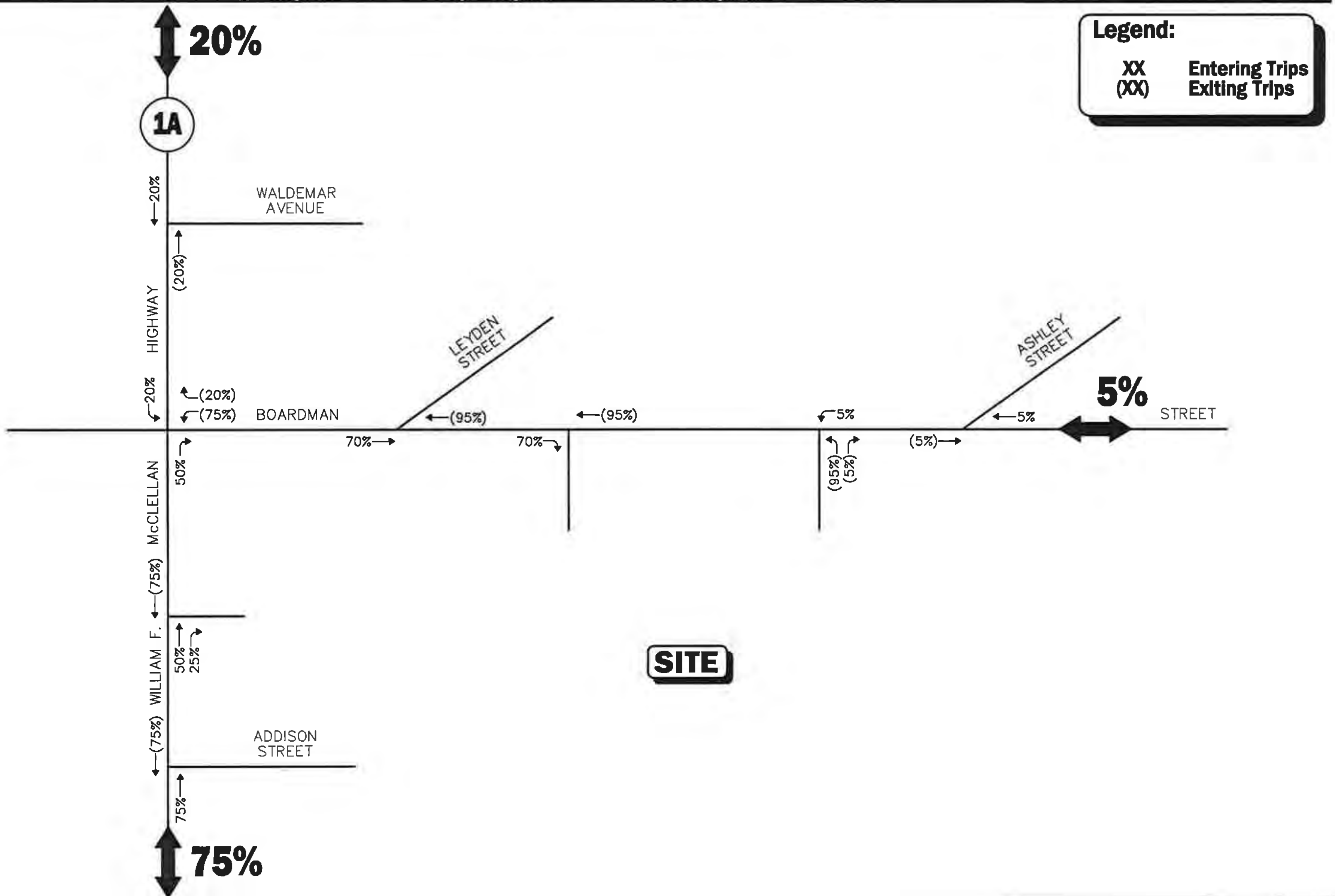

Figure 12

Trip Distribution Map
Hotel Component

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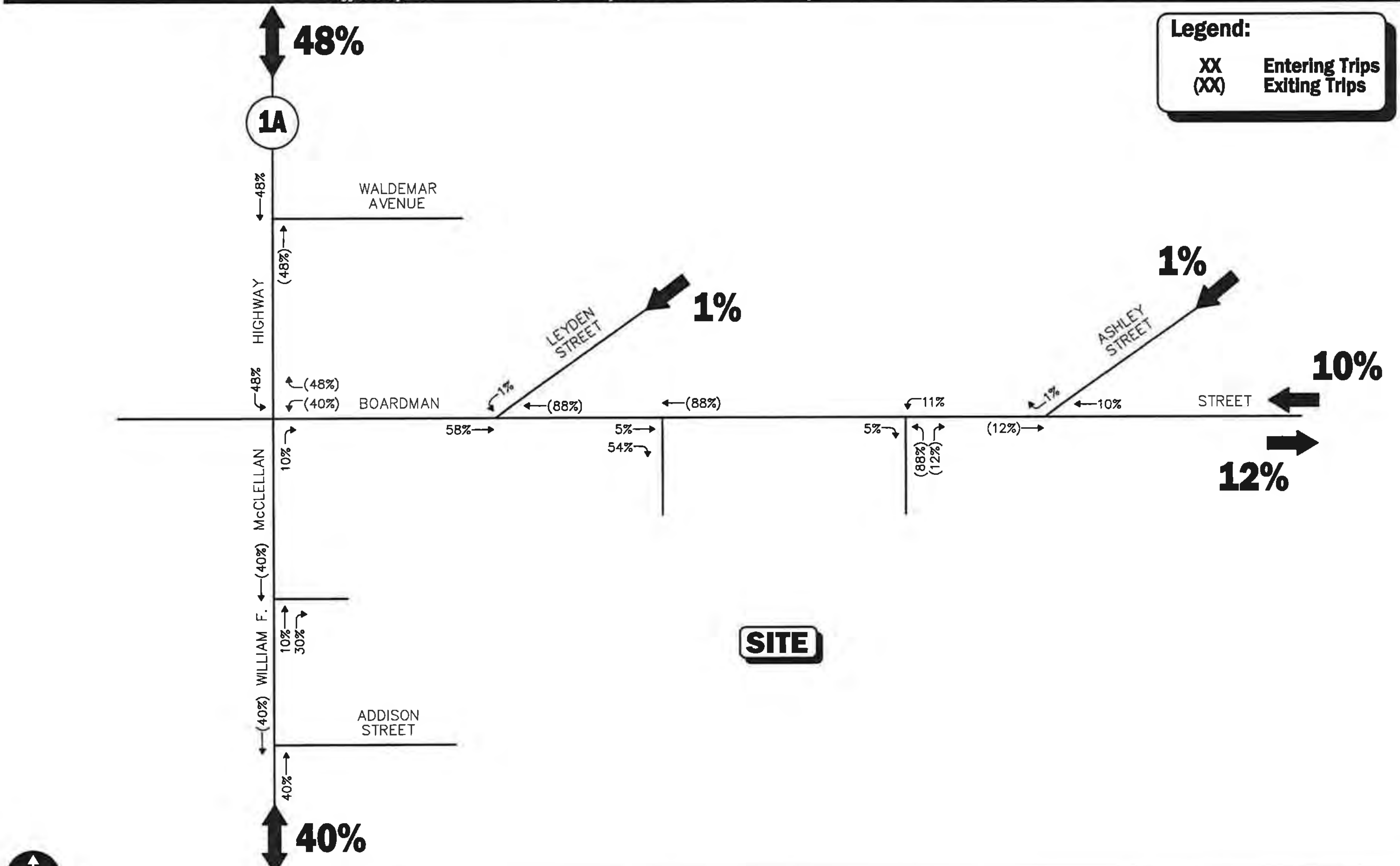

Figure 13

Trip Distribution Map
Restaurant Component

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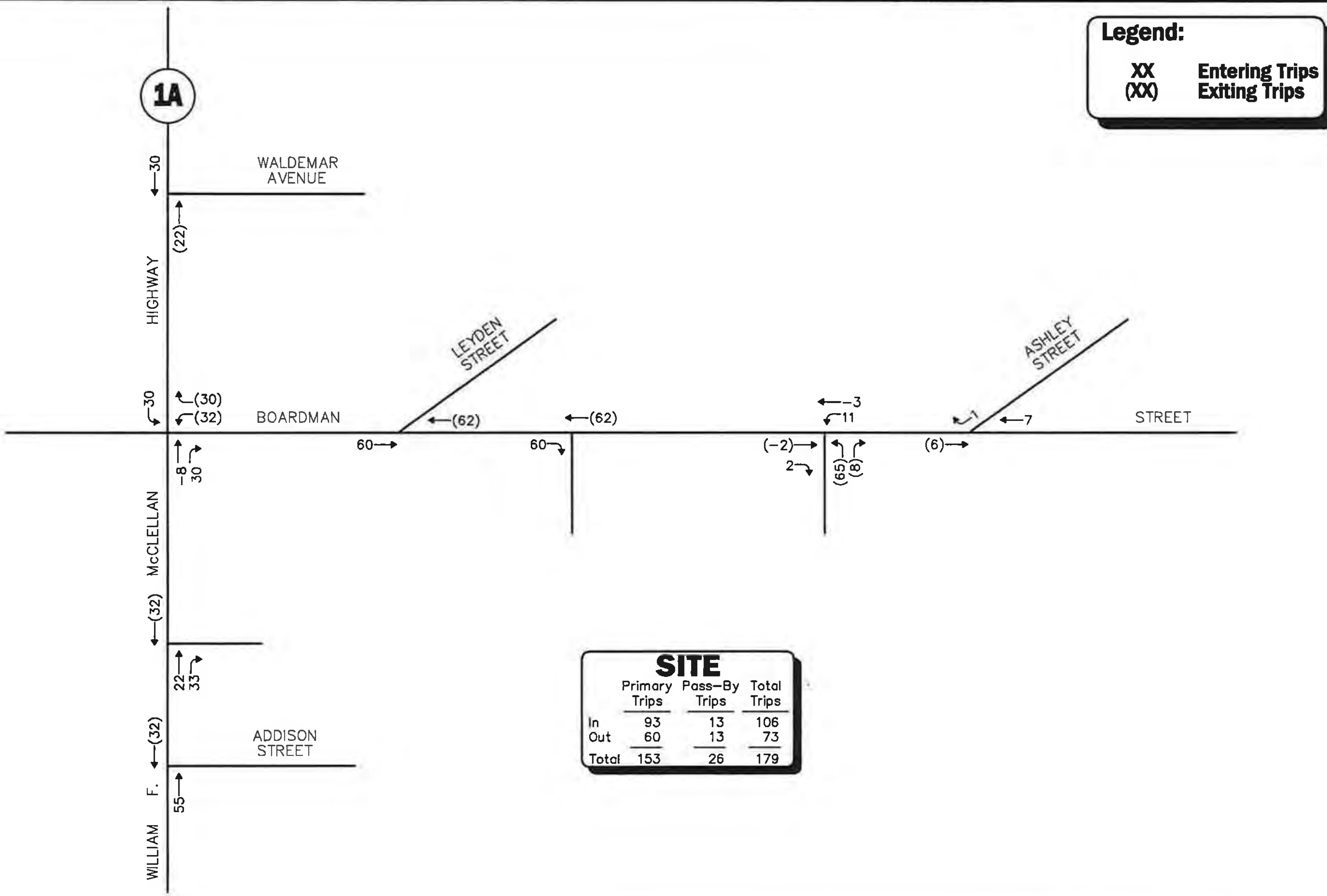

	Primary Trips	Pass-By Trips	Total Trips
In	93	13	106
Out	60	13	73
Total	153	26	179

Not To Scale

Figure 14

Project-Generated Weekday Morning Peak Hour Traffic Volumes

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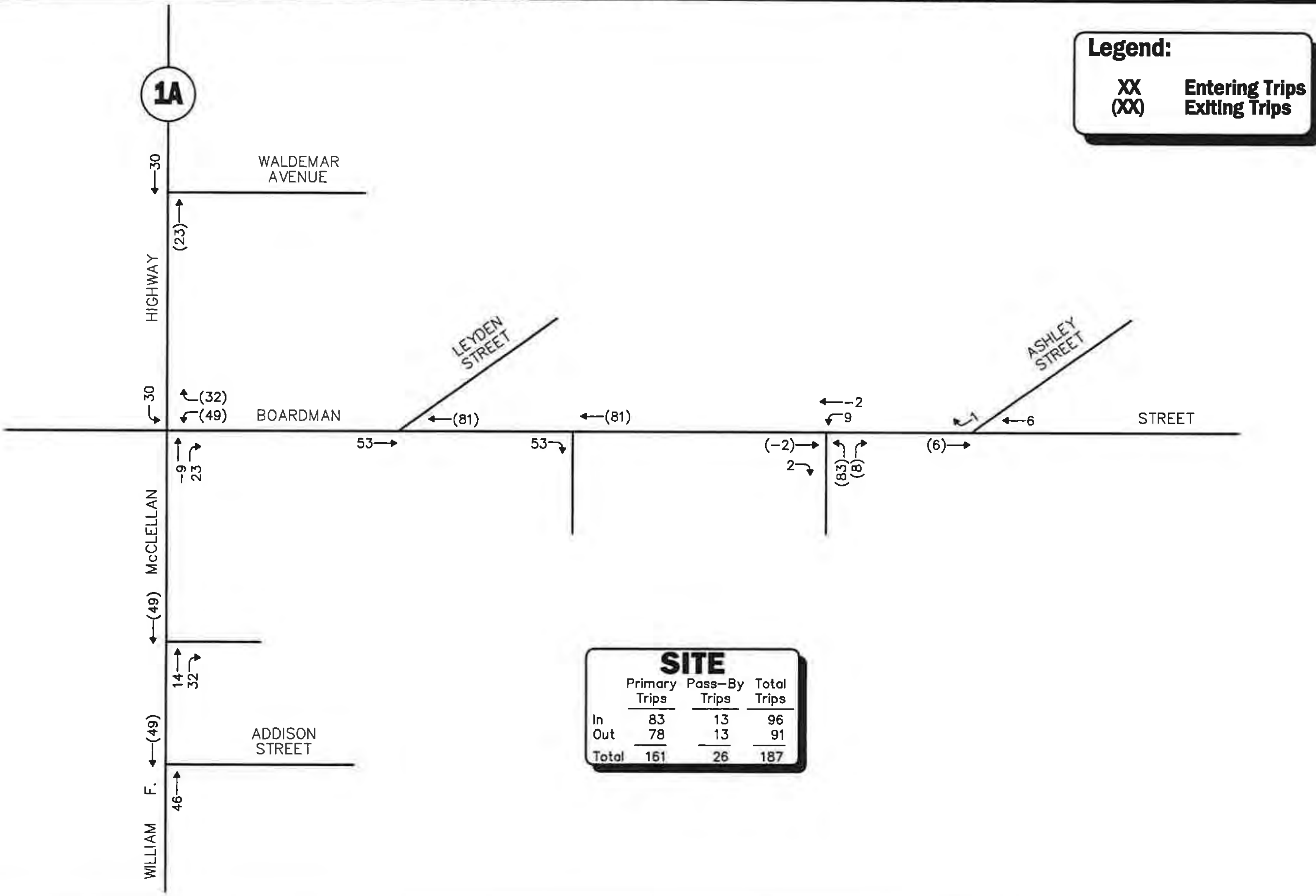

	Primary Trips	Pass-By Trips	Total Trips
In	83	13	96
Out	78	13	91
Total	161	26	187

Not To Scale

Figure 15

Project-Generated Weekday Evening Peak Hour Traffic Volumes

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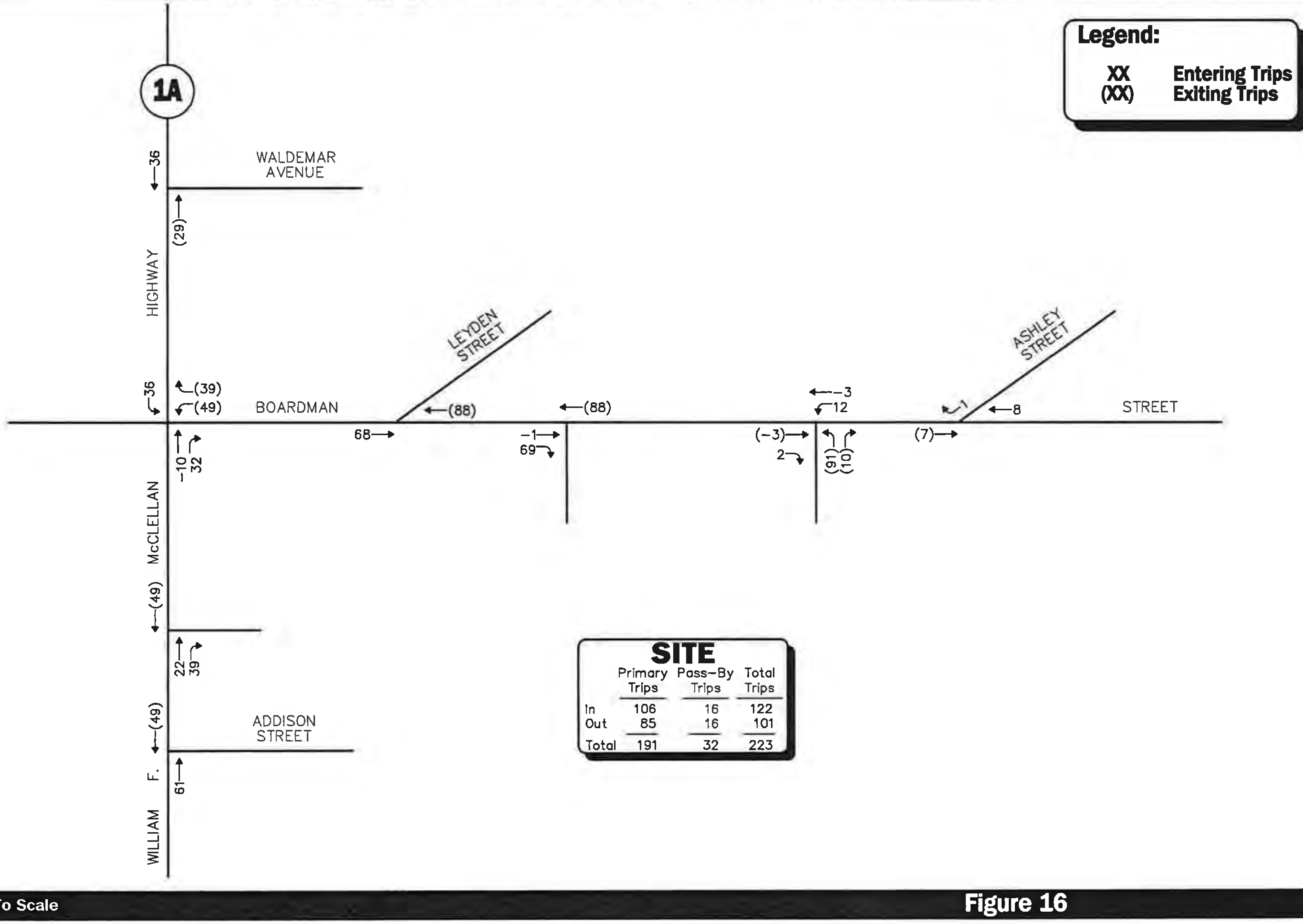

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Figure 16

Project-Generated Saturday Midday Peak Hour Traffic Volumes

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FUTURE TRAFFIC VOLUMES - BUILD CONDITION

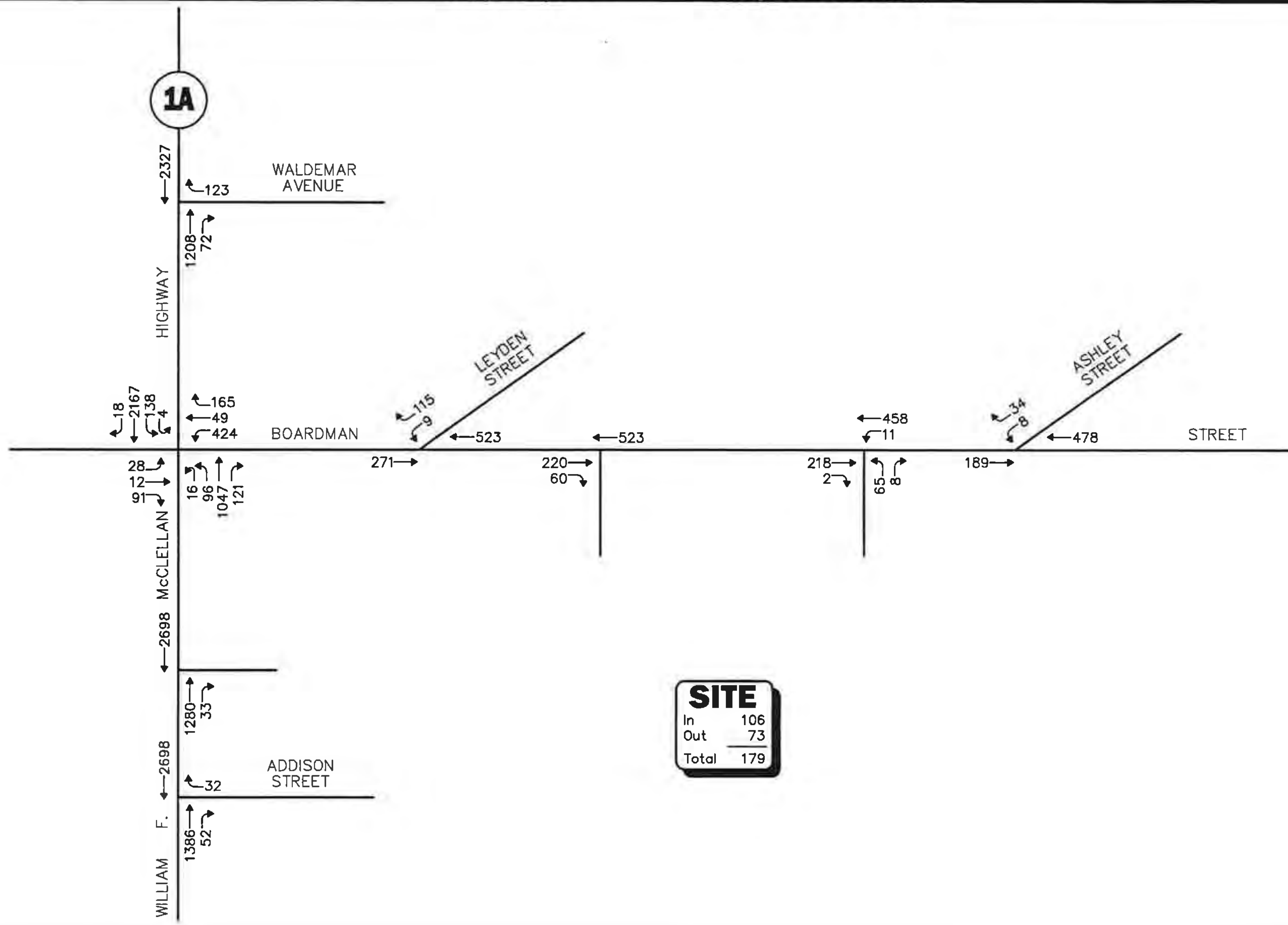
The 2017 Build condition traffic volumes consist of the 2017 No-Build traffic volumes with the additional traffic expected to be generated by the Project added to them. The 2017 Build weekday morning, weekday evening and Saturday midday peak-hour traffic-volumes are graphically depicted on Figures 17, 18 and 19, respectively.

A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 5. These volumes are based on the expected increases from the Project.

Table 5
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak-Hour	2012 Existing	2017 No-Build	2017 Build	Traffic Volume Increase Over No-Build	Percent Increase Over No-Build
Route 1A, north of Waldemar Avenue:					
Weekday Morning	3,431	3,606	3,658	52	1.4
Weekday Evening	3,843	4,038	4,091	53	1.3
Saturday Midday	3,724	4,103	4,168	65	1.6
Route 1A, south of Addison Street:					
Weekday Morning	3,873	4,049	4,136	87	2.1
Weekday Evening	3,833	4,029	4,124	95	2.4
Saturday Midday	3,250	3,416	3,526	110	3.2
Boardman Street, east of Ashley Street:					
Weekday Morning	630	662	675	13	2.0
Weekday Evening	754	792	804	12	1.5
Saturday Midday	908	955	970	15	1.6
Leyden Street, north of Boardman Street:					
Weekday Morning	118	124	124	0	0.0
Weekday Evening	37	39	39	0	0.0
Saturday Midday	51	53	53	0	0.0
Ashley Street, north of Boardman Street:					
Weekday Morning	39	41	42	1	2.4
Weekday Evening	27	28	29	1	3.6
Saturday Midday	53	56	57	1	1.8

As shown in Table 5, Project-related traffic-volume increases external to the study area relative to 2017 No-Build conditions are anticipated to range from 0.0 to 3.6 percent, with vehicle increases ranging from 0 to 12 vehicles during the peak periods along Boardman Street and intersecting roadways, and from 52 to 110 vehicles along Route 1A when compared to 2017 No-Build conditions.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 17

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2017 Build
Weekday Morning
Peak Hour Traffic Volumes

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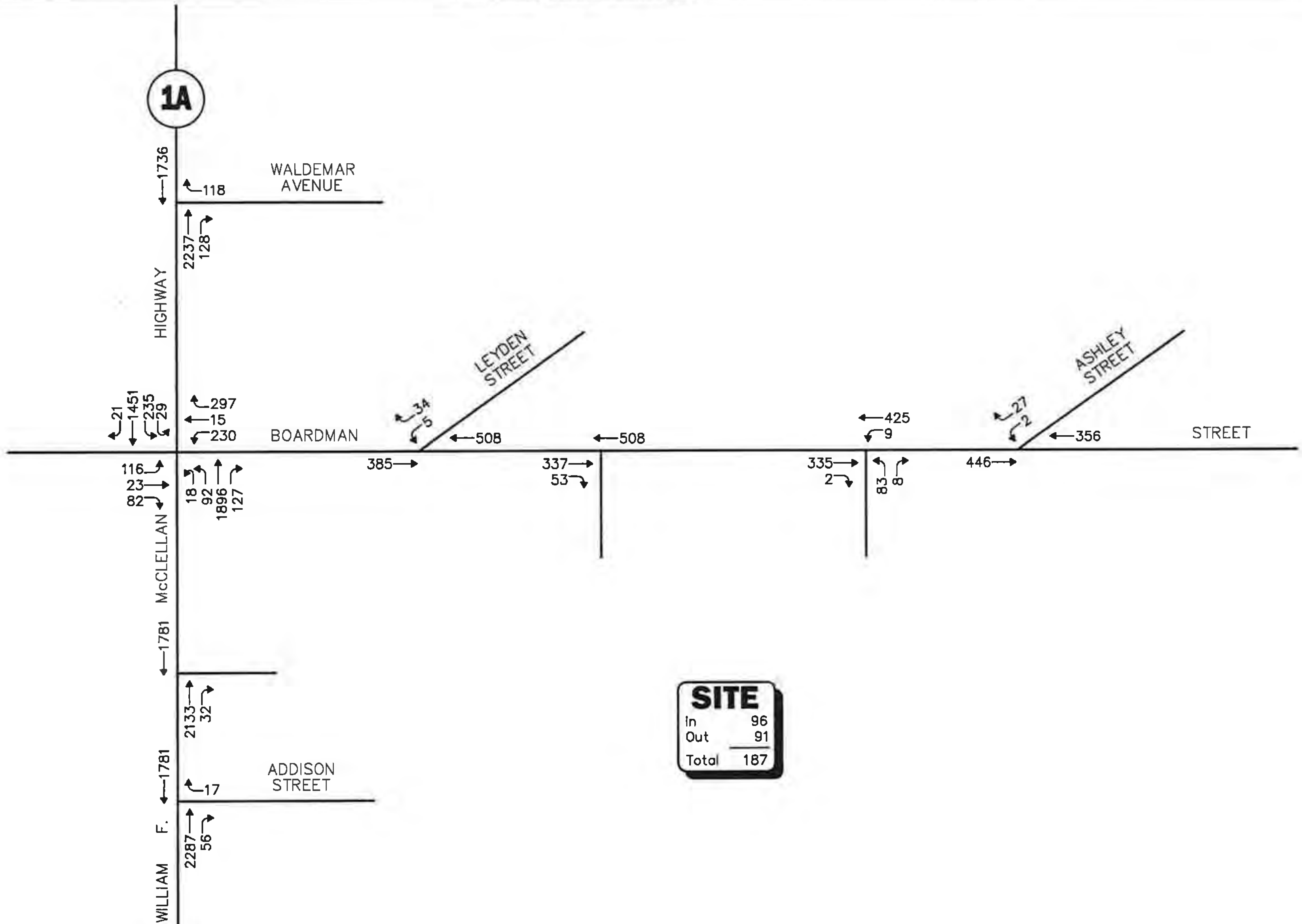

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 18

2017 Build
Weekday Evening
Peak Hour Traffic Volumes

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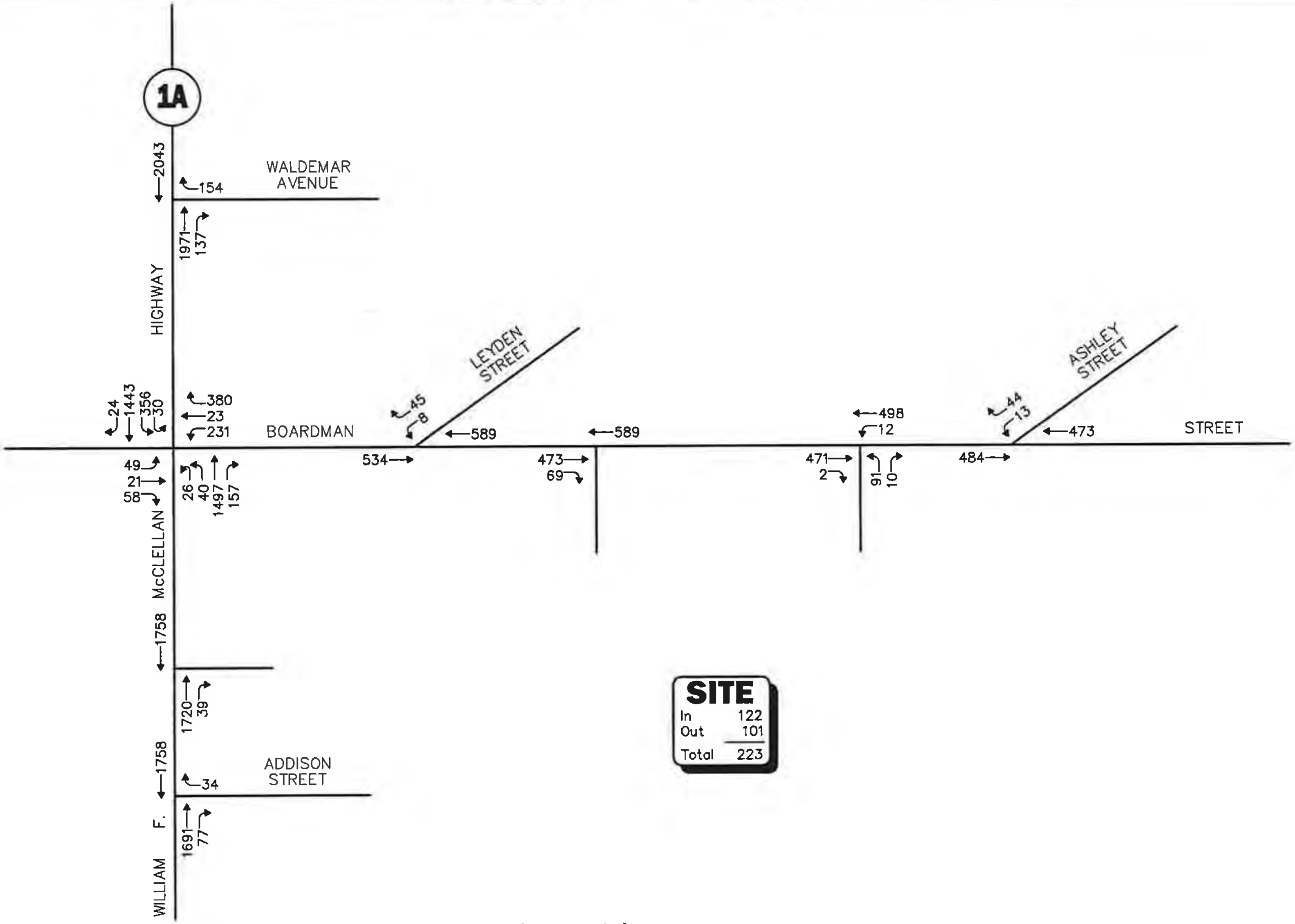

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

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Figure 19

2017 Build
Saturday Midday
Peak Hour Traffic Volumes

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TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build and Build traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.[11] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

[11] The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual;* Transportation Research Board; Washington, DC; 2000.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2000 *Highway Capacity Manual.*[12] Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the affects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the 2000 *Highway Capacity Manual*. Table 6 summarizes the relationship between level of service and average control delay.

Table 6
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Level of Service	Average Control Delay (Seconds Per Vehicle)
A	$\leq$ 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	>50.0

[a]Source: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; page 17-2.

[12]*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than LOS A.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the 2000 *Highway Capacity Manual*. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 7 summarizes the relationship between level of service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 7
LEVEL-OF-SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS[a]

Level of Service	Control (Signal) Delay Per Vehicle (Seconds)
A	$\leq$10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

[a]Source: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; page 16-2.

Vehicle Queue Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro™ intersection capacity analysis software which is based upon the methodology and procedures presented in the 2000 *Highway Capacity Manual*. The Synchro™ vehicle queue analysis methodology is a simulation based model which reports the number of vehicles that experience a delay of six seconds or more at an intersection. For signalized intersections, Synchro™ reports both the 50th (median) and 95th percentile vehicle queues. For unsignalized intersections, Synchro™ reports the 95th percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only 5 percent of the time, or approximately three minutes out of sixty minutes during the peak one hour of the day (during the remaining fifty-seven minutes, the vehicle queue length will be less than the 95th percentile queue length).

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2012 Existing, 2017 No-Build and 2017 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 8 and 9, with the detailed analysis results presented in the Appendix.

The following is a summary of the level-of-service and vehicle queue analyses for the intersections within the study area.

Signalized Intersection

Route 1A at Boardman Street

Under 2012 Existing conditions, this signalized intersection was shown to operate at an overall LOS F during the weekday morning peak-hour, at LOS D during the weekday evening peak-hour and at LOS C during the Saturday midday peak-hour. Under 2017 No-Build and Build conditions, overall operating conditions were shown to continue at LOS F during the weekday morning peak-hour and to degrade to LOS E during the weekday evening peak-hour and to LOS D during the Saturday midday peak-hour as a result of traffic volume increases independent of the Project. Vehicle queues at the intersection were shown to range from 0 to 1,464 feet (approximately 59 vehicles) during the peak periods. The Project was not shown to result in a significant increase in vehicle queuing at the intersection over No-Build conditions (approximately 3 vehicles).

Table 8
SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2012 Existing				2017 No-Build				2017 Build			
Signalized Intersection/Peak-Hour/Movement	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th
Route 1A at Boardman Street												
Weekday Morning:												
Boardman Street EB LT	0.38	45.3	D	24/54	0.48	48.4	D	25/58	0.59	58.8	E	26/66
Boardman Street EB TH/RT	0.10	40.1	D	9/48	0.11	39.9	D	10/50	0.11	39.9	D	10/50
Boardman Street WB LT/TH	1.11	120.5	F	433/659	1.16	139.1	F	486/702	1.24	171.9	F	548/767
Boardman Street WB RT	0.19	24.2	C	56/95	0.21	23.9	C	62/102	0.25	23.1	C	78/119
Route 1A NB LT	0.73	68.9	E	112/198	0.67	64.1	E	99/167	0.67	64.1	E	99/167
Route 1A NB TH	0.66	25.4	C	350/462	0.70	26.7	C	380/500	0.72	28.6	C	389/576
Route 1A NB RT	0.06	0.1	A	0/0	0.07	0.1	A	0/0	0.09	0.1	A	0/0
Route 1A SB LT	0.56	57.6	E	89/146	0.57	57.5	E	93/151	0.63	58.0	E	118/182
Route 1A SB TH/RT	1.29	169.9	F	1,226/1,364	1.36	196.5	F	1,327/1,464	1.36	196.5	F	1,327/1,464
Overall	**1.16**	**109.2**	**F**	--	**1.16**	**124.9**	**F**	--	**1.19**	**127.3**	**F**	--
Weekday Evening:												
Boardman Street EB LT	0.73	65.1	E	103/169	0.75	66.9	E	111/178	0.84	83.1	F	113/180
Boardman Street EB TH/RT	0.16	46.9	D	19/68	0.17	46.9	D	20/69	0.16	47.3	D	20/69
Boardman Street WB LT/TH	0.62	47.2	D	145/228	0.65	48.3	D	157/241	0.80	59.1	E	206/302
Boardman Street WB RT	0.41	27.3	C	146/217	0.43	27.3	C	156/230	0.47	27.4	C	180/262
Route 1A NB LT	0.63	61.6	E	87/159	0.65	64.1	E	93/166	0.66	65.7	E	95/166
Route 1A NB TH	1.06	70.7	E	916/1175	1.13	98.6	F	1,043/1,285	1.15	109.4	F	1,071/1,276
Route 1A NB RT	0.07	0.1	A	0/0	0.07	0.1	A	0/0	0.09	0.1	A	0/0
Route 1A SB LT	0.78	63.1	E	190/299	0.81	65.4	E	204/335	0.86	72.9	E	239/403
Route 1A SB TH/RT	0.78	23.9	C	507/690	0.83	26.7	C	576/770	0.83	27.5	C	594/770
Overall	**0.93**	**48.6**	**D**	--	**0.97**	**61.3**	**E**	--	**0.99**	**66.6**	**E**	--
Saturday Midday:												
Boardman Street EB LT	0.36	49.9	D	34/72	0.37	49.9	D	36/76	0.32	48.4	D	36/75
Boardman Street EB TH/RT	0.15	47.4	D	14/58	0.15	47.3	D	15/59	0.13	46.2	D	15/59
Boardman Street WB LT/TH	0.68	48.4	D	145/223	0.70	48.9	D	153/233	0.77	52.6	D	198/292
Boardman Street WB RT	0.50	24.5	C	175/258	0.52	24.7	C	189/276	0.56	24.9	C	219/316
Route 1A NB LT	0.48	54.5	D	47/97	0.49	55.2	E	50/102	0.50	57.5	E	53/103
Route 1A NB TH	0.93	39.2	D	546/832	0.98	50.6	D	607/921	1.02	61.7	E	705/927
Route 1A NB RT	0.08	0.1	A	0/0	0.09	0.1	A	0/0	0.11	0.1	A	0/0
Route 1A SB LT	0.89	65.4	E	251/472	0.93	74.9	E	271/515	1.07	114.9	F	351/594
Route 1A SB TH/RT	0.71	17.5	B	384/635	0.75	19.5	B	433/716	0.79	23.0	C	455/746
Overall	**0.85**	**32.4**	**C**	--	**0.90**	**38.1**	**D**	--	**0.96**	**46.8**	**D**	--

[a]Volume-to-capacity ratio.
[b]Control (signal) delay per vehicle in seconds.
[c]Level-of-Service.
[d]Queue length in feet.
EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Table 9
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2012 Existing				2017 No-Build				2017 Build			
Unsignalized Intersection/Peak-Hour/Movement	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th
Boardman Street at Leyden Street												
Weekday Morning:												
Boardman Street EB TH	201	0.0	A	0	211	0.0	A	0	271	0.0	A	0
Boardman Street WB TH	439	0.0	A	0	461	0.0	A	0	523	0.0	A	0
Leyden Street SB LT/RT	118	13.1	B	23	124	13.6	B	26	124	14.7	B	29
Weekday Evening:												
Boardman Street EB TH	316	0.0	A	0	332	0.0	A	0	385	0.0	A	0
Boardman Street WB TH	406	0.0	A	0	427	0.0	A	0	508	0.0	A	0
Leyden Street SB LT/RT	37	12.3	B	7	39	12.6	B	8	39	13.9	B	9
Saturday Midday:												
Boardman Street EB TH	443	0.0	A	0	466	0.0	A	0	534	0.0	A	0
Boardman Street WB TH	477	0.0	A	0	501	0.0	A	0	589	0.0	A	0
Leyden Street SB LT/RT	51	15.4	C	12	53	16.1	C	13	53	19.0	C	16
Boardman Street at Ashley Street												
Weekday Morning:												
Boardman Street EB TH	174	0.0	A	0	183	0.0	A	0	189	0.0	A	0
Boardman Street WB TH	448	0.0	A	0	471	0.0	A	0	478	0.0	A	0
Ashley Street SB LT/RT	39	12.6	B	8	41	12.9	B	9	42	13.0	B	9
Weekday Evening:												
Boardman Street EB TH	419	0.0	A	0	440	0.0	A	0	446	0.0	A	0
Boardman Street WB TH	333	0.0	A	0	350	0.0	A	0	356	0.0	A	0
Ashley Street SB LT/RT	27	11.1	B	6	28	11.3	B	6	29	11.3	B	6
Saturday Midday:												
Boardman Street EB TH	454	0.0	A	0	477	0.0	A	0	484	0.0	A	0
Boardman Street WB TH	442	0.0	A	0	465	0.0	A	0	473	0.0	A	0
Ashley Street SB LT/RT	53	13.9	B	12	56	14.6	B	14	57	14.7	B	15

See notes at end of table.

Table 9 (Continued)
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2012 Existing				2017 No-Build				2017 Build			
Unsignalized Intersection/Peak-Hour/Movement	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th
Route 1A at Waldemar Avenue												
Weekday Morning:												
Waldemar Avenue WB RT	117	16.9	C	31	123	18.0	C	35	123	18.4	C	36
Route 1A NB TH/RT	1,197	0.0	A	0	1,258	0.0	A	0	1,280	0.0	A	0
Weekday Evening:												
Waldemar Avenue WB RT	112	23.3	C	43	118	30.3	D	60	118	33.2	D	66
Route 1A NB TH/RT	2,229	0.0	A	0	2,342	0.0	A	0	2,365	0.0	A	0
Saturday Midday:												
Waldemar Avenue WB RT	147	20.9	C	49	154	24.3	C	61	154	26.6	D	67
Route 1A NB TH/RT	1,978	0.0	A	0	2,079	0.0	A	0	2,108	0.0	A	0
Route 1A at Addison Street												
Weekday Morning:												
Addison Street WB RT	30	16.6	C	12	32	17.5	C	14	32	18.2	C	15
Route 1A NB TH/RT	1,316	0.0	A	0	1,383	0.0	A	0	1,438	0.0	A	0
Weekday Evening:												
Addison Street WB RT	16	26.1	D	14	17	28.8	D	16	17	29.9	D	17
Route 1A NB TH/RT	2,185	0.0	A	0	2,297	0.0	A	0	2,343	0.0	A	0
Saturday Midday:												
Addison Street WB RT	32	19.6	C	18	34	21.2	C	21	34	22.2	C	22
Route 1A NB TH/RT	1,624	0.0	A	0	1,707	0.0	A	0	1,768	0.0	A	0
Boardman Street at the East Site Drive												
Weekday Morning:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	230	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	469	0.3	A	1
East Site Drive NB LT/RT	--	--	--	--	--	--	--	--	73	16.4	C	19
Weekday Evening:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	337	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	434	0.3	A	1
East Site Drive NB LT/RT	--	--	--	--	--	--	--	--	91	19.6	C	29
Saturday Midday:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	473	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	510	0.3	A	1
East Site Drive NB LT/RT	--	--	--	--	--	--	--	--	101	29.8	D	52

See notes at end of table.

Table 9 (Continued)
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2012 Existing				2017 No-Build				2017 Build			
Unsignalized Intersection/Peak-Hour/Movement	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th
Boardman Street at the West Site Drive												
Weekday Morning:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	280	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	523	0.0	A	0
Weekday Evening:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	390	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	508	0.0	A	0
Saturday Midday:												
Boardman Street EB TH/RT	--	--	--	--	--	--	--	--	542	0.0	A	0
Boardman Street WB LT/TH	--	--	--	--	--	--	--	--	589	0.0	A	0
Route 1A at the South Site Drive												
Weekday Morning:												
Route 1A NB TH/RT	--	--	--	--	--	--	--	--	1,313	0.0	A	0
Route 1A SB TH	--	--	--	--	--	--	--	--	2,698	0.0	A	0
Weekday Evening:												
Route 1A NB TH/RT	--	--	--	--	--	--	--	--	2,165	0.0	A	0
Route 1A SB TH	--	--	--	--	--	--	--	--	1,781	0.0	A	0
Saturday Midday:												
Route 1A NB TH/RT	--	--	--	--	--	--	--	--	1,759	0.0	A	0
Route 1A SB TH	--	--	--	--	--	--	--	--	1,758	0.0	A	0

[a]Demand in vehicles per hour.
[b]Average control delay per vehicle (in seconds).
[c]Level-of-Service.
[d]Queue length in feet.
EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Unsignalized Intersection

Boardman Street at Leyden Street

Under 2012 Existing, 2017 No-Build and 2017 Build conditions, the critical movements at this unsignalized intersection (left and right turns from Leyden Street) were shown to operate at LOS B during both the weekday morning and evening peak hours, and at LOS C during the Saturday midday peak-hour. Vehicle queues at the intersection were shown to range from 0 to 29 feet (approximately 1 vehicle) during the peak periods.

Boardman Street at Ashley Street

Under 2012 Existing, 2017 No-Build and 2017 Build conditions, the critical movements at this unsignalized intersection (left and right turns from Ashley Street) were shown to operate at LOS B during the weekday morning, weekday evening and Saturday midday peak hours. Vehicle queues at the intersection were shown to range from 0 to 15 feet (approximately 1 vehicle) during the peak periods.

Route 1A at Waldemar Avenue

Under 2012 Existing conditions, the critical movements at this unsignalized intersection (right turns from Waldemar Avenue) were shown to operate at LOS C during the weekday morning, weekday evening and Saturday midday peak hours. Under 2017 No-Build conditions, the critical movements at this unsignalized intersection were shown to remain operating at LOS C during the weekday morning and Saturday midday peak hours, and to degrade to LOS D during the weekday evening peak-hour as a result of traffic-volume increases independent of the Project. Under 2017 Build conditions, with the addition of Project-related traffic, the critical movements were shown to remain operating at LOS C during the weekday morning peak-hour and at LOS D during the weekday evening peak-hour, and to degrade to LOS D during the Saturday midday peak-hour. Vehicle queues at the intersection were shown to range from 0 to 67 feet (approximately 3 vehicles) during the peak periods.

Route 1A at Addison Street

Under 2012 Existing, 2017 No-Build and 2017 Build conditions, the critical movements at this unsignalized intersection (right turns from Addison Street) were shown to operate at LOS C during the weekday morning peak-hour, at LOS D during the weekday evening peak-hour and at LOS C during the Saturday midday peak-hour. Vehicle queues at the intersection were shown to range from 0 to 22 feet (approximately 1 vehicle) during the peak periods.

Boardman Street at the East Project Site Drive

Under 2017 Build conditions, the critical movements at this proposed unsignalized intersection (left and right turns from the east Project site drive) were shown to operate at LOS C during both the weekday morning and evening peak hours, and at LOS D during the Saturday midday peak-hour. Vehicle queues at the intersection were shown to range from 0 to 52 feet (approximately 2 vehicles) during the peak periods.

Boardman Street at the West Project Site Drive

Under 2017 Build conditions, all movements at this proposed unsignalized intersection were shown to operate at LOS A during the weekday morning, weekday evening and Saturday midday peak hours with negligible vehicle queuing.

Route 1A at the South Site Drive

Under 2017 Build conditions, all movements at this proposed unsignalized intersection were shown to operate at LOS A during the weekday morning, weekday evening and Saturday midday peak hours with negligible vehicle queuing.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersections with Boardman Street and Route 1A in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)[13] requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO and MassDOT standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 10 presents the measured SSD and ISD at the subject intersections.

[13] Ibid 4.

Table 10
SIGHT DISTANCE MEASUREMENTS

Intersection/Sight Distance Measurement	Required Minimum (Feet)[a]	ISD[a]	Measured (Feet)
Boardman Street at the East Project Site Driveway			
Stopping Sight Distance:			
Boardman Street approaching from the east	305	--	650+
Boardman Street approaching from the west	305	--	650+
Intersection Sight Distance:			
Looking to the east from the Project Site Driveway	305	385/445[b]	650+
Looking to the west from the Project Site Driveway	305	385/445[b]	650+
Boardman Street at the West Project Site Driveway			
Stopping Sight Distance:			
Boardman Street approaching from the east	305	--	650+
Boardman Street approaching from the west	305	--	460
Route 1A at the South Project Site Driveway			
Stopping Sight Distance:			
Route 1A approaching from the south	425	--	650+

[a]Recommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets,* 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2011; and based on a 40 mph approach speed on Boardman Street and a 50 mph approach speed on Route 1A.

[b]Values shown are the intersection sight distance for a vehicle turning right/left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.

As can be seen in Table 10, the available lines of sight at the Project site driveway intersections with Boardman Street and Route 1A were found to exceed the recommended minimum sight distance requirements for a 40 mph approach speed along Boardman Street and a 50 mph approach speed along Route 1A, consistent with or in excess of the measured 85th percentile vehicle travel speed along these roadways.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has conducted a TIAS in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a 177-room all-suites business hotel and 10,030± sf of restaurant space in two buildings to be located at 415 William F. McClellan Highway (Route 1A) in East Boston, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. The Project is expected to generate approximately 1,854 new vehicle trips (two-way) on an average weekday, with approximately 153 new vehicle trips expected during the weekday morning peak-hour and 161 new vehicle trips expected during the weekday evening peak-hour. On a Saturday, the Project is expected to generate approximately 2,240 new vehicle trips, with approximately 191 new vehicle trips expected during the Saturday midday peak-hour;

2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or No-Build conditions. The signalized intersection of Route 1A at Boardman Street was shown to be operating at or over capacity (defined as a LOS "E" or "F", respectively) during one or more peak periods independent of the Project, with Project-related impacts shown to be nominal (projected increase in vehicle queuing shown to range from 0 to 3 vehicles during the peak periods);

3. Overall operating conditions at the unsignalized study area intersections were shown to be maintained at a LOS "D" or better during the peak periods with the addition of Project-related traffic;

4. All movements at the Project site driveway intersections with Boardman Street and Route 1A were shown to operate at a level-of-service of "D" or better during the peak periods with minimal vehicle queuing (0 to 2 vehicles);

5. No discernable safety deficiencies were noted within the study area based on a review of the motor vehicle crash history at the study intersections; and

6. Lines of sight to and from the Project site driveway intersections with Boardman Street and Route 1A were found to exceed the required minimum distances for the intersections to function in a safe and efficient manner.

Based on the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and to address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and will be completed in conjunction with the Project subject to receipt of all necessary rights, permits and approvals.

Project Access

Access to the Project site will be provided by way of three (3) driveways as follows: a right-turn, entrance only driveway that will intersect the east side of Route 1A approximately 350 feet south of Boardman Street; a right-turn entrance only driveway that will intersect the south side of Boardman Street approximately 400 feet east of Route 1A; and a full-access driveway that will intersect the south side of Boardman Street approximately 750 feet east of Route 1A. Secondary access to the Project site will be provided by way of a shared (with Avis Rental Car) access easement that is situated parallel to the east property line of the Project site; however, the Project has been designed with specific features to limit use of the easement by Project-related traffic. The following recommendations are offered with respect to the design and operation of the Project site driveways:

- The Project site driveways should be a minimum of 24-feet in width where two-way traffic is proposed and a minimum of 16-feet in width where one-way traffic is to be accommodated.
- Vehicles exiting the Project site should be placed under STOP-sign control with illumination (street lighting) provided.
- Appropriate signs and pavement markings should be provided at the entrance only driveways in order to regulate the flow of vehicles to right-turn entering traffic only.
- Signs and landscaping adjacent to the Project site driveway intersections should be designed and maintained so as not to restrict lines of sight.
- The shared access easement should be designed in such a manner so as to limit motorist use to access the Project site.
- Centerline pavement markings, where provided, shall consist of a double-yellow line in accordance with the centerline pavement marking standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).[14]

[14]Ibid 5.

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the MUTCD.

Off-Site

Route 1A at Boardman Street

Under 2012 Existing conditions, this signalized intersection was shown to operate at an overall LOS “F” during the weekday morning peak-hour, at LOS “D” during the weekday evening peak-hour and at LOS “C” during the Saturday midday peak-hour. Under 2017 No-Build and Build conditions, overall operating conditions were shown to continue at LOS “F” during the weekday morning peak-hour and to degrade to LOS “E” during the weekday evening peak-hour and to LOS “D” during the Saturday midday peak-hour as a result of traffic volume increases independent of the Project. In an effort to improve operating conditions at the intersection and off-set the projected impact of the Project, the Project proponent will widen the Boardman Street westbound approach to accommodate a second left-turn lane (three lane approach consisting of a two (2) left-turn lanes and a shared through/right-turn lane) and will develop an optimal traffic signal timing and phasing plan. The improvements will include the reconstruction of the traffic system as may be necessary and will incorporate new or upgraded pedestrian and bicycle accommodations.

The Project proponent will complete the stated improvements prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights permits and approvals. As can be seen in Table 11, with the planned improvements, overall operating conditions at the intersection were shown to be maintained at LOS “F”, “E” and “D” during the weekday morning, weekday evening and Saturday midday peak hours, respectively (no change over No-Build conditions); however, vehicle queuing on the Boardman Street westbound approach was shown to be reduced by as much as 60 percent.

In addition, in order to facilitate the long-term improvement measure at the intersection (full or partial grade separation of the intersection), the Project proponent will reserve land along the Project frontage on Route 1A for future acquisition (at fair market value) by the appropriate party(ies) to complete the improvement.

Table 11
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2017 No-Build				2017 Build				2017 Build with Mitigation			
Signalized Intersection/Peak-Hour/Movement	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th
Route 1A at Boardman Street												
Weekday Morning:												
Boardman Street EB LT	0.48	48.4	D	25/58	0.59	58.8	E	26/66	0.29	57.3	E	27/57
Boardman Street EB TH/RT	0.11	39.9	D	10/50	0.11	39.9	D	10/50	0.21	56.6	E	12/60
Boardman Street WB LT/TH[e]	1.16	139.1	F	486/702	1.24	171.9	F	548/767	0.77	54.5	D	189/250
Boardman Street WB TH/RT[f]	0.21	23.9	C	62/102	0.25	23.1	C	78/119	0.49	47.5	D	90/180
Route 1A NB LT	0.67	64.1	E	99/167	0.67	64.1	E	99/167	0.75	72.9	E	100/199
Route 1A NB TH	0.70	26.7	C	380/500	0.72	28.6	C	389/576	0.68	25.0	C	380/502
Route 1A NB RT	0.07	0.1	A	0/0	0.09	0.1	A	0/0	0.09	0.1	A	0/0
Route 1A SB LT	0.57	57.5	E	93/151	0.63	58.0	E	118/182	0.64	58.1	E	117/185
Route 1A SB TH/RT	1.36	196.5	F	1,327/1,464	1.36	196.5	F	1,327/1,464	1.26	153.2	F	1,270/1,427
Overall	**1.16**	**124.9**	**F**	--	**1.19**	**127.3**	**F**	--	**1.03**	**93.9**	**F**	--
Weekday Evening:												
Boardman Street EB LT	0.75	66.9	E	111/178	0.84	83.1	F	113/180	0.96	123.1	F	118/252
Boardman Street EB TH/RT	0.17	46.9	D	20/69	0.16	47.3	D	20/69	0.27	58.4	E	22/81
Boardman Street WB LT/TH[e]	0.65	48.3	D	157/241	0.80	59.1	E	206/302	0.53	54.1	D	102/145
Boardman Street WB TH/RT[f]	0.43	27.3	C	156/230	0.47	27.4	C	180/262	0.71	64.7	E	111/231
Route 1A NB LT	0.65	64.1	E	93/166	0.66	65.7	E	95/166	0.65	65.2	E	93/165
Route 1A NB TH	1.13	98.6	F	1,043/1,285	1.15	109.4	F	1,071/1,276	1.10	85.7	F	991/1,226
Route 1A NB RT	0.07	0.1	A	0/0	0.09	0.1	A	0/0	0.09	0.1	A	0/0
Route 1A SB LT	0.81	65.4	E	204/335	0.86	72.9	E	239/403	1.05	124.9	F	262/475
Route 1A SB TH/RT	0.83	26.7	C	576/770	0.83	27.5	C	594/770	0.85	29.3	C	590/828
Overall	**0.97**	**61.3**	**E**	--	**0.99**	**66.6**	**E**	--	**1.01**	**64.3**	**E**	--
Saturday Midday:												
Boardman Street EB LT	0.37	49.9	D	36/76	0.32	48.4	D	36/75	0.46	57.4	E	39/86
Boardman Street EB TH/RT	0.15	47.3	D	15/59	0.13	46.2	D	15/59	0.25	55.1	E	16/71
Boardman Street WB LT/TH[e]	0.70	48.9	D	153/233	0.77	52.6	D	198/292	0.53	49.0	D	96/138
Boardman Street WB TH/RT[f]	0.52	24.7	C	189/276	0.56	24.9	C	219/316	0.62	54.0	D	64/199
Route 1A NB LT	0.49	55.2	E	50/102	0.50	57.5	E	53/103	0.62	65.4	E	52/109
Route 1A NB TH	0.98	50.6	D	607/921	1.02	61.7	E	705/927	1.04	69.3	E	712/965
Route 1A NB RT	0.09	0.1	A	0/0	0.11	0.1	A	0/0	0.11	0.1	A	0/0
Route 1A SB LT	0.93	74.9	E	271/515	1.07	114.9	F	351/594	0.96	79.7	E	310/570
Route 1A SB TH/RT	0.75	19.5	B	433/716	0.79	23.0	C	455/746	0.75	19.3	B	465/675
Overall	**0.90**	**38.1**	**D**	--	**0.96**	**46.8**	**D**	--	**0.91**	**48.0**	**D**	--

[a]Volume-to-capacity ratio.
[b]Control (signal) delay per vehicle in seconds.
[c]Level-of-Service.
[d]Queue length in feet.
[e]Under 2017 No-Build and 2017 Build conditions, this lane group functions as a shared left-turn/through travel lane; under 2017 Build with Mitigation conditions, this lane group will function as two left-turn lanes
[f]Under 2017 No-Build and 2017 Build conditions, this lane group functions as a right-turn lane; under 2017 Build with Mitigation conditions, this lane group will function as a through/right-turn lane.
EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Transportation Demand Management (TDM) Program

Overall, the Project's impact on the transportation infrastructure is expected to be adequately mitigated through the planned transportation infrastructure improvements that will be completed in conjunction with the Project; however, the following pedestrian and bicycle improvements/accommodations, Transportation Demand Management (TDM) measures, and trip reduction strategies are proposed with the goal of further minimizing the Project's overall impact.

Pedestrian Improvements

As part of the Project, the Project proponent will define and enhance pedestrian facilities as follows:

- Sidewalks and pedestrian promenade areas will be provided within the Project site that will connect to the existing sidewalk infrastructure along Route 1A and Boardman Street.

- Lighting will be provided within the Project site and around building perimeters.

- Full handicapped access will be provided within the Project site and along proposed internal circulating roadways, including ramps for barrier-free access where appropriate; pedestrian crosswalks, pushbuttons and phasing will be provided at all signalized intersections constructed or modified in conjunction with the Project where sidewalks and crosswalks are provided; and crosswalks and associated pedestrian crossing warning signs will be installed at and in advance of pedestrian crossing locations as appropriate, and will be designed and installed in accordance with the MUTCD.

- The pedestrian traffic signal equipment (pushbuttons and indications) will be upgraded/replaced at the intersection of Route 1A at Boardman Street in order to meet current design standards for accessibility.

- Pedestrian phase timing will be reviewed and adjusted as may be necessary to meet current MUTCD design standards at all signalized intersections within the study area where such accommodations are present.

Bicycle Accommodations

The Project will include the installation of bicycle racks that will be appropriately located proximate to building entrances. A minimum of 12 exterior bicycle parking spaces will be provided for each building to be located within the Project site. The Project site driveways and circulating roadways within the Project site will provide sufficient width to accommodate bicycle travel in a shared travelled-way configuration. All traffic signals to be constructed or physically modified in conjunction with the Project will include bicycle detection and associated signs and pavement markings, if and to the extent feasible and appropriate.

Traffic Reduction Strategies

In order to reduce single occupant vehicle (SOV) travel to the Project and encourage the use of alternative modes of transportation, the Project proponent will make available to employees and hotel guests information on several traffic reduction strategies. The core of successful traffic reduction strategies are ridesharing, public transportation, bicycling, and pedestrian travel, and are discussed below.

Ridesharing Programs - Ridesharing refers to encouraging commuters to ride in vehicles with other commuters rather than drive alone to work. The most common forms of ridesharing are carpools and vanpools, and the use of public transportation services. The benefits of such programs include less congestion, reduced fuel consumption, and better air quality. Keys to the success of such programs could include:

- Carpool/vanpool matching programs;
- Dissemination of promotional materials;
- Newsletters about the program; and
- Coordination with MassRIDES which provides administrative and organizational assistance.

Rideshare programs will be encouraged to be implemented as a part of the Project through the following measures:

- A full-time Transportation Coordinator will be assigned for the Project;
- Coordinate with MassRIDES to provide commuter services to employees of the Project and to develop an informational packet of commuting alternatives to be made available to employees and to guests of the hotel;
- Provide on-site sale of Charlie cards for employees and for guests of the hotel;
- Make available to employees and to hotel guests information regarding public transportation services, maps, schedules and fare information;
- Promote the use of public transportation to hotel guests in website based materials including links to the appropriate homepages of the MBTA and MassRIDES;
- Participate in the MBTA Corporate Pass Program to the extent practical and as allowable pursuant to commercial tenant lease requirements;
- Encourage employees to participate in MassRIDES' NuRide program which rewards employees that choose to walk, bicycle, carpool, vanpool or use public transportation;
- Offer a "Guaranteed Ride Home" to all employees that commute to the Project by means other than private automobile; and
- Provide a periodic newsletter or bulletin concerning commuting options.

Annual Monitoring and Reporting Program

The Project proponent will conduct a post-development traffic monitoring and employee survey program in order to evaluate the success and to refine the elements of the TDM program. The monitoring program will include obtaining traffic volume information at the driveways serving the Project and an employee and hotel guest survey of commuting modes. The results of the annual monitoring program will be provided to the BRA, the BTD and MassDOT. The monitoring program will commence upon full completion and occupancy of the Project and will continue for a period of 2-years thereafter.

Loading and Deliveries

The Project has been designed to accommodate all loading and delivery functions on-site in a safe and efficient manner. Designated loading areas have been provided within the Project site to accommodate deliveries in a safe and efficient manner and separate from customer and pedestrian traffic. Truck routes and hours of deliveries will be scheduled to the extent possible to minimize truck activity during the commuter peak hours. Reasonable efforts will be made to use service vendors currently serving the Project vicinity in an effort to reduce the overall number of new trucks in the area.

Construction Management Plan (CMP)

An important component of the transportation plan for the Project is an effective series of measures that are designed to minimize traffic flow and safety impacts during the Project's construction phase. Summarized below are several measures which will be undertaken during the construction phase of the Project.

- The Project proponent and the general contractor will coordinate with MassDOT and BTD regarding all transportation-related construction impacts of the Project.

- Designated truck routes will be established to govern how trucks access the Project site. The goal of this commitment is to have construction trucks use only the regional highway system (i.e., Route 1A) and to avoid traveling through residential areas to the extent practical.

- Secure fencing and sidewalk staging protection (if necessary) will be provided in areas affected by construction to protect nearby pedestrian and vehicular traffic. Gate entrances into the construction area will be determined jointly with MassDOT and BTD.

- During construction activities, as required by MassDOT and/or BTD, a police detail will be employed to manage pedestrian and vehicle traffic at the construction access to the Project site.

- Secure on-site storage will be provided for tools and equipment in an effort to minimize construction-related vehicle trips to the site.

- Full or partial street closures will be avoided to the extent possible. Should a partial street closure be necessary in order to off-load construction materials and/or complete construction-related activities, the closure will be limited to off-peak periods as defined by MassDOT and BTD. Prior to the implementation of any planned construction activities within the public right-of-way, the contractor will submit to MassDOT and BTD for review and approval a traffic and pedestrian management plan.

- Construction worker parking will be provided within the Project site and expressly prohibited along Route 1A, Boardman Street or neighborhood streets.

- The general contractor will implement appropriate measures to encourage ridesharing and the use of public transportation services by employees and subcontractors working on the Project.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be constructed with minimal impact on the roadway system.

APPENDIX

MANUAL TURNING MOVEMENT COUNTS
SEASONAL ADJUSTMENT DATA
PUBLIC TRANSPORTATION SCHEDULES
SPEED DATA
MASSDOT CRASH RATE WORKSHEETS
GENERAL BACKGROUND TRAFFIC GROWTH
TRIP-GENERATION CALCULATIONS
PROJECT-GENERATED PEAK-HOUR TRAFFIC-VOLUME NETWORKS
CAPACITY ANALYSIS WORKSHEETS

MANUAL TURNING MOVEMENT COUNTS

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

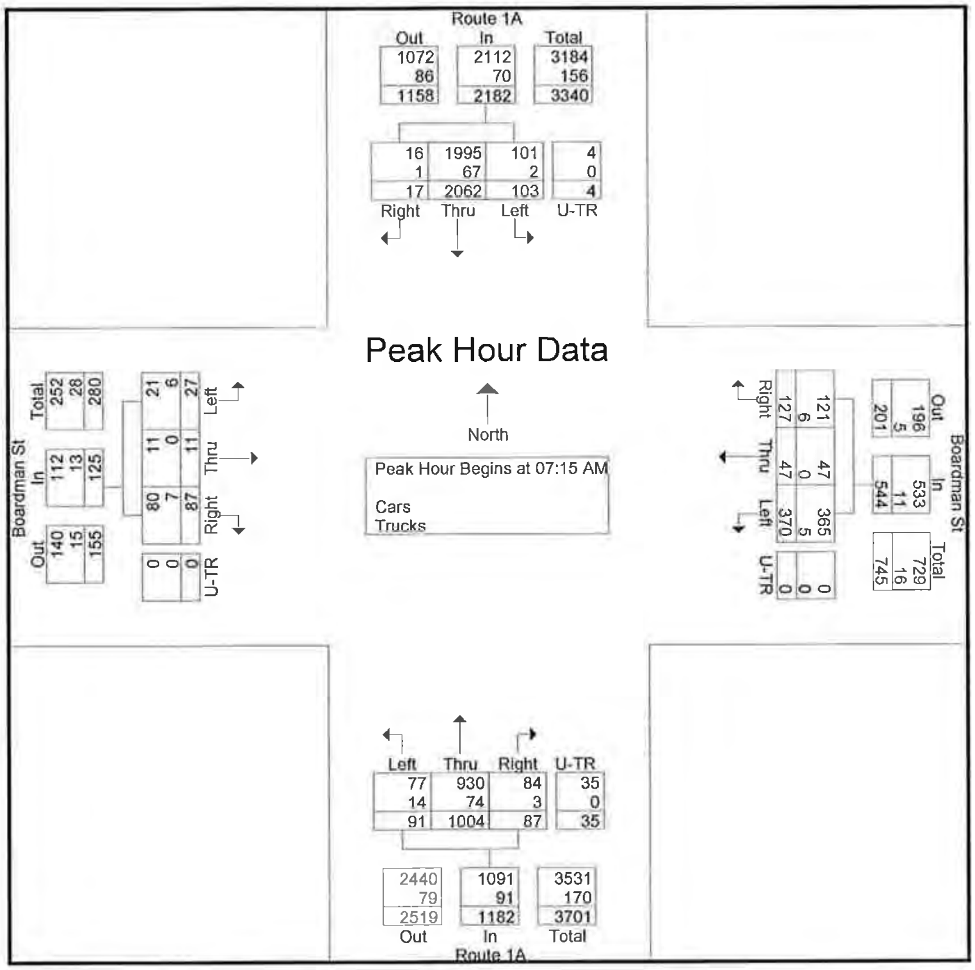
Groups Printed- Cars - Trucks

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00 AM	32	458	2	1	97	17	36	0	23	212	21	6	9	2	20	0	936
07:15 AM	19	539	3	2	91	10	27	0	19	286	22	5	6	2	23	0	1054
07:30 AM	43	475	3	0	97	12	27	0	28	225	24	8	7	0	24	0	973
07:45 AM	20	525	8	1	76	16	38	0	24	247	20	6	5	3	17	0	1006
Total	114	1997	16	4	361	55	128	0	94	970	87	25	27	7	84	0	3969
08:00 AM	21	523	3	1	106	9	35	0	20	246	21	16	9	6	23	0	1039
08:15 AM	19	506	3	0	80	13	34	0	29	229	19	13	13	1	40	0	999
08:30 AM	15	522	9	1	85	6	32	0	32	224	13	7	15	5	23	0	989
08:45 AM	15	510	10	0	72	13	39	0	34	220	15	8	14	2	24	0	976
Total	70	2061	25	2	343	41	140	0	115	919	68	44	51	14	110	0	4003
Grand Total	184	4058	41	6	704	96	268	0	209	1889	155	69	78	21	194	0	7972
Apprch %	4.3	94.6	1	0.1	65.9	9	25.1	0	9	81.4	6.7	3	26.6	7.2	66.2	0	
Total %	2.3	50.9	0.5	0.1	8.8	1.2	3.4	0	2.6	23.7	1.9	0.9	1	0.3	2.4	0	
Cars	177	3912	37	6	698	96	251	0	181	1755	146	69	64	21	181	0	7594
% Cars	96.2	96.4	90.2	100	99.1	100	93.7	0	86.6	92.9	94.2	100	82.1	100	93.3	0	95.3
Trucks	7	146	4	0	6	0	17	0	28	134	9	0	14	0	13	0	378
% Trucks	3.8	3.6	9.8	0	0.9	0	6.3	0	13.4	7.1	5.8	0	17.9	0	6.7	0	4.7

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	19	**539**	3	**2**	**563**	91	10	27	0	128	19	**286**	22	5	**332**	6	2	23	0	31	**1054**
07:30 AM	**43**	475	3	0	521	97	12	27	0	136	**28**	225	**24**	8	285	7	0	**24**	0	31	973
07:45 AM	20	525	**8**	1	554	76	**16**	**38**	0	130	24	247	20	6	297	5	3	17	0	25	1006
08:00 AM	21	523	3	1	548	**106**	9	35	0	**150**	20	246	21	**16**	303	**9**	**6**	**23**	0	**38**	1039
Total Volume	103	2062	17	4	2186	370	47	127	0	544	91	1004	87	35	1217	27	11	87	0	125	4072
% App. Total	4.7	94.3	0.8	0.2		68	8.6	23.3	0		7.5	82.5	7.1	2.9		21.6	8.8	69.6	0		
PHF	.599	.956	.531	.500	.971	.873	.734	.836	.000	.907	.813	.878	.906	.547	.916	.750	.458	.906	.000	.822	.966
Cars	101	1995	16	4	2116	365	47	121	0	533	77	930	84	35	1126	21	11	80	0	112	3887
% Cars	98.1	96.8	94.1	100	96.8	98.6	100	95.3	0	98.0	84.6	92.6	96.6	100	92.5	77.8	100	92.0	0	89.6	95.5
Trucks	2	67	1	0	70	5	0	6	0	11	14	74	3	0	91	6	0	7	0	13	185
% Trucks	1.9	3.2	5.9	0	3.2	1.4	0	4.7	0	2.0	15.4	7.4	3.4	0	7.5	22.2	0	8.0	0	10.4	4.5

Accurate Counts
978-664-2565

N/S Street : Route 1A	File Name : 61720001
E/W Street: Boardman Street	Site Code : 61720001
City/State : East Boston, MA	Start Date : 2/9/2012
Weather : Clear	Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:15 AM					08:00 AM				
+0 mins.	19	**539**	3	**2**	**563**	**97**	**17**	36	0	**150**	19	**286**	22	5	**332**	9	**6**	23	0	38
+15 mins.	**43**	475	3	0	521	91	10	27	0	128	**28**	225	**24**	8	285	13	1	**40**	0	**54**
+30 mins.	20	525	**8**	1	554	97	12	27	0	136	24	247	20	6	297	**15**	5	23	0	43
+45 mins.	21	523	3	1	548	76	16	**38**	0	130	20	246	21	**16**	303	14	2	24	0	40
Total Volume	103	2062	17	4	2186	361	55	128	0	544	91	1004	87	35	1217	51	14	110	0	175
% App. Total	4.7	94.3	0.8	0.2		66.4	10.1	23.5	0		7.5	82.5	7.1	2.9		29.1	8	62.9	0	
PHF	.599	.956	.531	.500	.971	.930	.809	.842	.000	.907	.813	.878	.906	.547	.916	.850	.583	.688	.000	.810
Cars	101	1995	16	4	2116	357	55	121	0	533	77	930	84	35	1126	43	14	105	0	162
% Cars	98.1	96.8	94.1	100	96.8	98.9	100	94.5	0	98	84.6	92.6	96.6	100	92.5	84.3	100	95.5	0	92.6
Trucks	2	67	1	0	70	4	0	7	0	11	14	74	3	0	91	8	0	5	0	13
% Trucks	1.9	3.2	5.9	0	3.2	1.1	0	5.5	0	2	15.4	7.4	3.4	0	7.5	15.7	0	4.5	0	7.4

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00 AM	32	447	2	1	97	17	34	0	20	197	21	6	8	2	19	0	903
07:15 AM	19	518	3	2	89	10	26	0	13	265	22	5	6	2	22	0	1002
07:30 AM	43	458	2	0	97	12	25	0	25	208	24	8	4	0	22	0	928
07:45 AM	18	509	8	1	74	16	36	0	21	231	18	6	3	3	13	0	957
Total	112	1932	15	4	357	55	121	0	79	901	85	25	21	7	76	0	3790
08:00 AM	21	510	3	1	105	9	34	0	18	226	20	16	8	6	23	0	1000
08:15 AM	15	479	2	0	79	13	31	0	24	218	18	13	10	1	39	0	942
08:30 AM	14	503	9	1	85	6	30	0	28	206	11	7	14	5	20	0	939
08:45 AM	15	488	8	0	72	13	35	0	32	204	12	8	11	2	23	0	923
Total	65	1980	22	2	341	41	130	0	102	854	61	44	43	14	105	0	3804
Grand Total	177	3912	37	6	698	96	251	0	181	1755	146	69	64	21	181	0	7594
Apprch %	4.3	94.7	0.9	0.1	66.8	9.2	24	0	8.4	81.6	6.8	3.2	24.1	7.9	68	0	
Total %	2.3	51.5	0.5	0.1	9.2	1.3	3.3	0	2.4	23.1	1.9	0.9	0.8	0.3	2.4	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	19	**518**	3	**2**	**542**	89	10	26	0	125	13	**265**	22	5	**305**	6	2	22	0	30	**1002**
07:30 AM	**43**	458	2	0	503	97	12	25	0	134	**25**	208	**24**	8	265	4	0	22	0	26	928
07:45 AM	18	509	**8**	1	536	74	**16**	**36**	0	126	21	231	18	6	276	3	3	13	0	19	957
08:00 AM	21	510	3	1	535	**105**	9	34	0	**148**	18	226	20	**16**	280	**8**	**6**	**23**	0	**37**	1000
Total Volume	101	1995	16	4	2116	365	47	121	0	533	77	930	84	35	1126	21	11	80	0	112	3887
% App. Total	4.8	94.3	0.8	0.2		68.5	8.8	22.7	0		6.8	82.6	7.5	3.1		18.8	9.8	71.4	0		
PHF	.587	.963	.500	.500	.976	.869	.734	.840	.000	.900	.770	.877	.875	.547	.923	.656	.458	.870	.000	.757	.970

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012

Groups Printed- Trucks

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00 AM	0	11	0	0	0	0	2	0	3	15	0	0	1	0	1	0	33
07:15 AM	0	21	0	0	2	0	1	0	6	21	0	0	0	0	1	0	52
07:30 AM	0	17	1	0	0	0	2	0	3	17	0	0	3	0	2	0	45
07:45 AM	2	16	0	0	2	0	2	0	3	16	2	0	2	0	4	0	49
Total	2	65	1	0	4	0	7	0	15	69	2	0	6	0	8	0	179
08:00 AM	0	13	0	0	1	0	1	0	2	20	1	0	1	0	0	0	39
08:15 AM	4	27	1	0	1	0	3	0	5	11	1	0	3	0	1	0	57
08:30 AM	1	19	0	0	0	0	2	0	4	18	2	0	1	0	3	0	50
08:45 AM	0	22	2	0	0	0	4	0	2	16	3	0	3	0	1	0	53
Total	5	81	3	0	2	0	10	0	13	65	7	0	8	0	5	0	199
Grand Total	7	146	4	0	6	0	17	0	28	134	9	0	14	0	13	0	378
Apprch %	4.5	93	2.5	0	26.1	0	73.9	0	16.4	78.4	5.3	0	51.9	0	48.1	0	
Total %	1.9	38.6	1.1	0	1.6	0	4.5	0	7.4	35.4	2.4	0	3.7	0	3.4	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	13	0	0	13	**1**	0	1	0	2	2	**20**	1	0	23	1	0	0	0	1	39
08:15 AM	**4**	**27**	1	0	**32**	1	0	3	0	**4**	**5**	11	1	0	17	**3**	0	1	0	**4**	57
08:30 AM	1	19	0	0	20	0	0	2	0	2	4	18	2	0	**24**	1	0	**3**	0	4	50
08:45 AM	0	22	**2**	0	24	0	0	**4**	0	4	2	16	**3**	0	21	3	0	1	0	4	53
Total Volume	5	81	3	0	89	2	0	10	0	12	13	65	7	0	85	8	0	5	0	13	199
% App. Total	5.6	91	3.4	0		16.7	0	83.3	0		15.3	76.5	8.2	0		61.5	0	38.5	0		
PHF	.313	.750	.375	.000	.695	.500	.000	.625	.000	.750	.650	.813	.583	.000	.885	.667	.000	.417	.000	.813	.873

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
07:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	3	1	4
07:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	9	0	1	0	0	0	0	0	0	0	0	0	0	9	1	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	3	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	1	5	0	5
Grand Total	0	0	0	12	0	1	0	1	0	0	0	0	0	0	0	1	14	1	15
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0				
Total %	0	0	0		0	100	0		0	0	0		0	0	0		93.3	6.7	

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars - Trucks

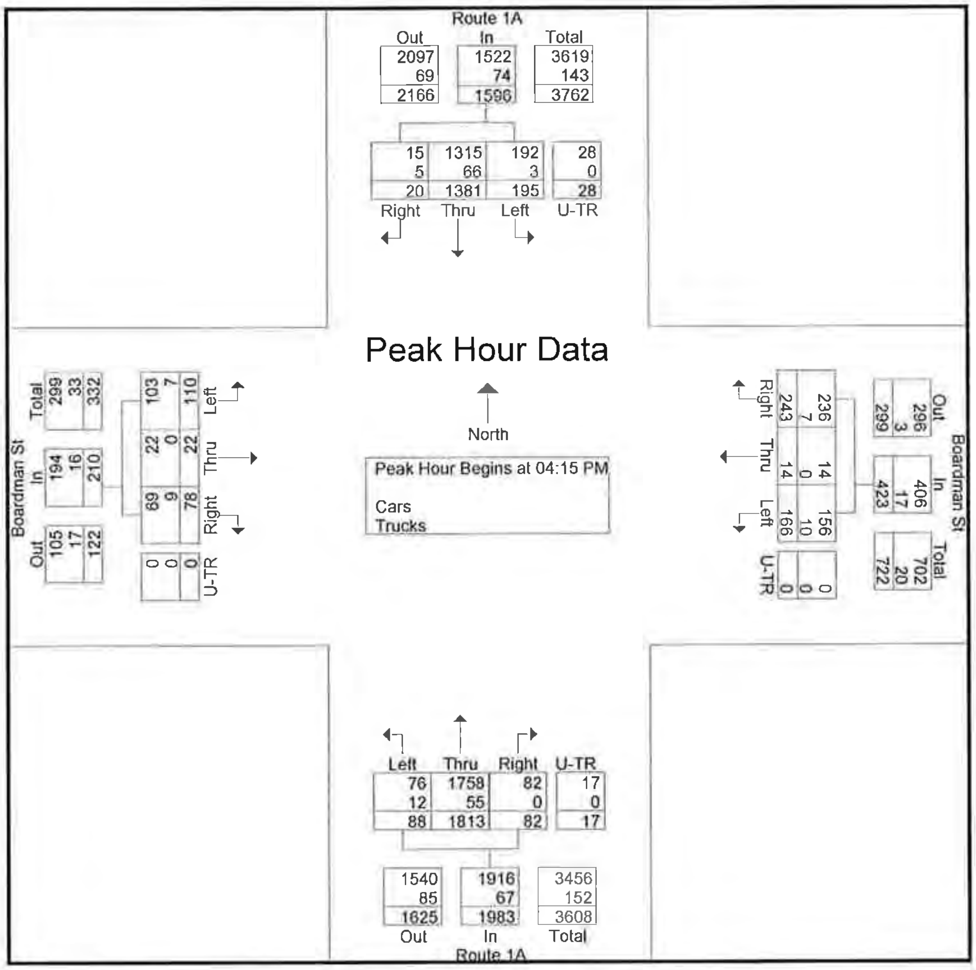
	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
04:00 PM	59	316	8	1	47	6	60	0	32	419	36	5	18	7	16	0	1030
04:15 PM	50	357	3	7	52	3	58	0	6	469	16	4	33	5	23	0	1086
04:30 PM	50	372	4	5	44	3	65	0	34	449	17	3	23	5	22	0	1096
04:45 PM	47	315	5	9	34	6	55	0	28	441	19	6	22	5	16	0	1008
Total	206	1360	20	22	177	18	238	0	100	1778	88	18	96	22	77	0	4220
05:00 PM	48	337	8	7	36	2	65	0	20	454	30	4	32	7	17	0	1067
05:15 PM	58	328	6	6	40	3	66	0	35	457	20	3	21	8	16	0	1067
05:30 PM	67	315	7	4	35	2	68	0	6	462	19	3	28	7	19	0	1042
05:45 PM	56	308	7	5	26	1	45	0	26	440	25	6	15	2	18	0	980
Total	229	1288	28	22	137	8	244	0	87	1813	94	16	96	24	70	0	4156
Grand Total	435	2648	48	44	314	26	482	0	187	3591	182	34	192	46	147	0	8376
Apprch %	13.7	83.4	1.5	1.4	38.2	3.2	58.6	0	4.7	89.9	4.6	0.9	49.9	11.9	38.2	0	
Total %	5.2	31.6	0.6	0.5	3.7	0.3	5.8	0	2.2	42.9	2.2	0.4	2.3	0.5	1.8	0	
Cars	428	2526	39	44	300	26	467	0	164	3482	182	34	181	46	132	0	8051
% Cars	98.4	95.4	81.2	100	95.5	100	96.9	0	87.7	97	100	100	94.3	100	89.8	0	96.1
Trucks	7	122	9	0	14	0	15	0	23	109	0	0	11	0	15	0	325
% Trucks	1.6	4.6	18.8	0	4.5	0	3.1	0	12.3	3	0	0	5.7	0	10.2	0	3.9

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	50	357	3	7	417	52	3	58	0	113	6	469	16	4	495	33	5	23	0	61	1086
04:30 PM	50	372	4	5	431	44	3	65	0	112	34	449	17	3	503	23	5	22	0	50	1096
04:45 PM	47	315	5	9	376	34	6	55	0	95	28	441	19	6	494	22	5	16	0	43	1008
05:00 PM	48	337	8	7	400	36	2	65	0	103	20	454	30	4	508	32	7	17	0	56	1067
Total Volume	195	1381	20	28	1624	166	14	243	0	423	88	1813	82	17	2000	110	22	78	0	210	4257
% App. Total	12	85	1.2	1.7		39.2	3.3	57.4	0		4.4	90.7	4.1	0.9		52.4	10.5	37.1	0		
PHF	.975	.928	.625	.778	.942	.798	.583	.935	.000	.936	.647	.966	.683	.708	.984	.833	.786	.848	.000	.861	.971
Cars	192	1315	15	28	1550	156	14	236	0	406	76	1758	82	17	1933	103	22	69	0	194	4083
% Cars	98.5	95.2	75.0	100	95.4	94.0	100	97.1	0	96.0	86.4	97.0	100	100	96.7	93.6	100	88.5	0	92.4	95.9
Trucks	3	66	5	0	74	10	0	7	0	17	12	55	0	0	67	7	0	9	0	16	174
% Trucks	1.5	4.8	25.0	0	4.6	6.0	0	2.9	0	4.0	13.6	3.0	0	0	3.4	6.4	0	11.5	0	7.6	4.1

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM					04:00 PM					04:30 PM					04:15 PM				
+0 mins.	50	357	3	7	417	47	6	60	0	113	34	449	17	3	503	33	5	23	0	61
+15 mins.	50	372	4	5	431	52	3	58	0	113	28	441	19	6	494	23	5	22	0	50
+30 mins.	47	315	5	9	376	44	3	65	0	112	20	454	30	4	508	22	5	16	0	43
+45 mins.	48	337	8	7	400	34	6	55	0	95	35	457	20	3	515	32	7	17	0	56
Total Volume	195	1381	20	28	1624	177	18	238	0	433	117	1801	86	16	2020	110	22	78	0	210
% App. Total	12	85	1.2	1.7		40.9	4.2	55	0		5.8	89.2	4.3	0.8		52.4	10.5	37.1	0	
PHF	.975	.928	.625	.778	.942	.851	.750	.915	.000	.958	.836	.985	.717	.667	.981	.833	.786	.848	.000	.861
Cars	192	1315	15	28	1550	169	18	230	0	417	104	1751	86	16	1957	103	22	69	0	194
% Cars	98.5	95.2	75	100	95.4	95.5	100	96.6	0	96.3	88.9	97.2	100	100	96.9	93.6	100	88.5	0	92.4
Trucks	3	66	5	0	74	8	0	8	0	16	13	50	0	0	63	7	0	9	0	16
% Trucks	1.5	4.8	25	0	4.6	4.5	0	3.4	0	3.7	11.1	2.8	0	0	3.1	6.4	0	11.5	0	7.6

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
04:00 PM	58	304	8	1	45	6	57	0	28	404	36	5	17	7	15	0	991
04:15 PM	48	333	2	7	51	3	55	0	4	453	16	4	30	5	20	0	1031
04:30 PM	50	359	3	5	42	3	65	0	31	436	17	3	20	5	21	0	1060
04:45 PM	47	303	4	9	31	6	53	0	26	432	19	6	21	5	13	0	975
Total	203	1299	17	22	169	18	230	0	89	1725	88	18	88	22	69	0	4057
05:00 PM	47	320	6	7	32	2	63	0	15	437	30	4	32	7	15	0	1017
05:15 PM	56	319	3	6	39	3	65	0	32	446	20	3	21	8	13	0	1034
05:30 PM	67	293	7	4	35	2	67	0	3	451	19	3	25	7	18	0	1001
05:45 PM	55	295	6	5	25	1	42	0	25	423	25	6	15	2	17	0	942
Total	225	1227	22	22	131	8	237	0	75	1757	94	16	93	24	63	0	3994
Grand Total	428	2526	39	44	300	26	467	0	164	3482	182	34	181	46	132	0	8051
Apprch %	14.1	83.2	1.3	1.4	37.8	3.3	58.9	0	4.2	90.2	4.7	0.9	50.4	12.8	36.8	0	
Total %	5.3	31.4	0.5	0.5	3.7	0.3	5.8	0	2	43.2	2.3	0.4	2.2	0.6	1.6	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	50	**359**	3	5	**417**	**42**	3	**65**	0	**110**	31	436	17	3	487	20	5	**21**	0	46	**1060**
04:45 PM	47	303	4	**9**	363	31	**6**	53	0	90	26	432	19	**6**	483	21	5	13	0	39	975
05:00 PM	47	320	**6**	7	380	32	2	63	0	97	15	437	**30**	4	486	**32**	7	15	0	**54**	1017
05:15 PM	**56**	319	3	6	384	39	3	65	0	107	**32**	**446**	20	3	**501**	21	**8**	13	0	42	1034
Total Volume	200	1301	16	27	1544	144	14	246	0	404	104	1751	86	16	1957	94	25	62	0	181	4086
% App. Total	13	84.3	1	1.7		35.6	3.5	60.9	0		5.3	89.5	4.4	0.8		51.9	13.8	34.3	0		
PHF	.893	.906	.667	.750	.926	.857	.583	.946	.000	.918	.813	.982	.717	.667	.977	.734	.781	.738	.000	.838	.964

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
04:00 PM	1	12	0	0	2	0	3	0	4	15	0	0	1	0	1	0	39
04:15 PM	2	24	1	0	1	0	3	0	2	16	0	0	3	0	3	0	55
04:30 PM	0	13	1	0	2	0	0	0	3	13	0	0	3	0	1	0	36
04:45 PM	0	12	1	0	3	0	2	0	2	9	0	0	1	0	3	0	33
Total	3	61	3	0	8	0	8	0	11	53	0	0	8	0	8	0	163
05:00 PM	1	17	2	0	4	0	2	0	5	17	0	0	0	0	2	0	50
05:15 PM	2	9	3	0	1	0	1	0	3	11	0	0	0	0	3	0	33
05:30 PM	0	22	0	0	0	0	1	0	3	11	0	0	3	0	1	0	41
05:45 PM	1	13	1	0	1	0	3	0	1	17	0	0	0	0	1	0	38
Total	4	61	6	0	6	0	7	0	12	56	0	0	3	0	7	0	162
Grand Total	7	122	9	0	14	0	15	0	23	109	0	0	11	0	15	0	325
Apprch %	5.1	88.4	6.5	0	48.3	0	51.7	0	17.4	82.6	0	0	42.3	0	57.7	0	
Total %	2.2	37.5	2.8	0	4.3	0	4.6	0	7.1	33.5	0	0	3.4	0	4.6	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**2**	**24**	1	0	**27**	1	0	**3**	0	4	2	16	0	0	18	**3**	0	**3**	0	**6**	**55**
04:30 PM	0	13	1	0	14	2	0	0	0	2	3	13	0	0	16	3	0	1	0	4	36
04:45 PM	0	12	1	0	13	3	0	2	0	5	2	9	0	0	11	1	0	3	0	4	33
05:00 PM	1	17	**2**	0	20	**4**	0	2	0	**6**	**5**	**17**	0	0	**22**	0	0	2	0	2	50
Total Volume	3	66	5	0	74	10	0	7	0	17	12	55	0	0	67	7	0	9	0	16	174
% App. Total	4.1	89.2	6.8	0		58.8	0	41.2	0		17.9	82.1	0	0		43.8	0	56.2	0		
PHF	.375	.688	.625	.000	.685	.625	.000	.583	.000	.708	.600	.809	.000	.000	.761	.583	.000	.750	.000	.667	.791

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720001
Site Code : 61720001
Start Date : 2/9/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	3
05:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
05:15 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	2	6
Grand Total	3	1	0	4	0	0	0	0	0	0	0	1	0	0	0	0	5	4	9
Apprch %	75	25	0		0	0	0		0	0	0		0	0	0				
Total %	75	25	0		0	0	0		0	0	0		0	0	0		55.6	44.4	

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	**1**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**2**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	50	50	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200s1
Site Code : 61720001
Start Date : 2/18/2012
Page No : 1

Groups Printed- Cars - Trucks

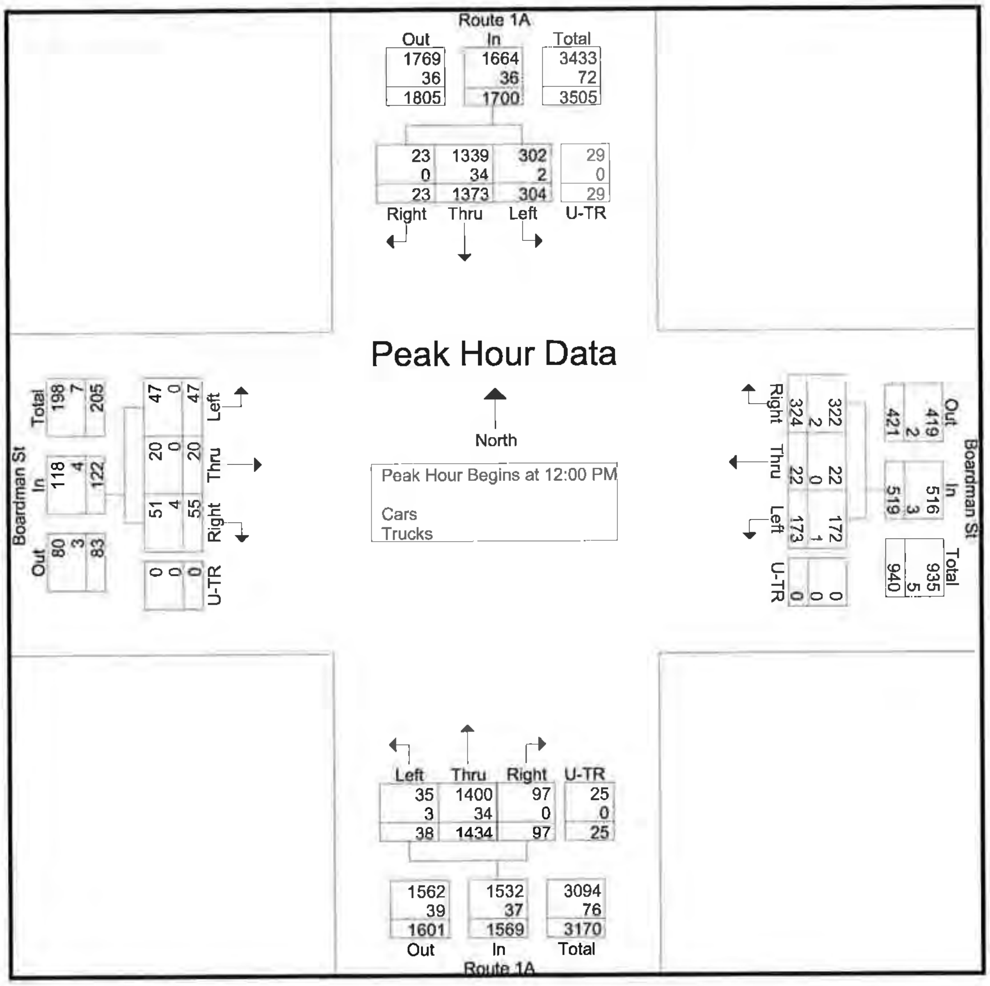
	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
11:00 AM	68	303	4	7	36	9	78	0	11	304	15	4	10	9	14	0	872
11:15 AM	66	308	6	10	52	6	63	0	10	314	23	12	21	3	8	0	902
11:30 AM	61	310	4	7	47	5	65	0	25	359	32	7	15	5	12	0	954
11:45 AM	65	295	2	12	46	8	91	0	6	308	16	4	11	5	19	0	888
Total	260	1216	16	36	181	28	297	0	52	1285	86	27	57	22	53	0	3616
12:00 PM	69	360	8	13	50	6	87	0	13	365	22	7	12	2	16	0	1030
12:15 PM	77	339	6	3	33	6	84	0	7	385	21	5	13	6	13	0	998
12:30 PM	67	332	5	6	52	3	67	0	10	337	24	5	14	5	11	0	938
12:45 PM	91	342	4	7	38	7	86	0	8	347	30	8	8	7	15	0	998
Total	304	1373	23	29	173	22	324	0	38	1434	97	25	47	20	55	0	3964
01:00 PM	72	261	5	6	47	3	88	0	10	322	24	8	16	7	16	0	885
01:15 PM	56	328	8	3	35	5	72	0	7	412	29	3	10	6	23	0	997
01:30 PM	53	357	11	9	38	3	88	0	10	381	23	10	9	9	8	0	1009
01:45 PM	80	329	7	8	44	3	75	0	8	357	33	4	14	7	16	0	985
Total	261	1275	31	26	164	14	323	0	35	1472	109	25	49	29	63	0	3876
Grand Total	825	3864	70	91	518	64	944	0	125	4191	292	77	153	71	171	0	11456
Apprch %	17	79.7	1.4	1.9	33.9	4.2	61.9	0	2.7	89.5	6.2	1.6	38.7	18	43.3	0	
Total %	7.2	33.7	0.6	0.8	4.5	0.6	8.2	0	1.1	36.6	2.5	0.7	1.3	0.6	1.5	0	
Cars	818	3766	69	91	516	64	935	0	118	4088	291	77	149	71	162	0	11215
% Cars	99.2	97.5	98.6	100	99.6	100	99	0	94.4	97.5	99.7	100	97.4	100	94.7	0	97.9
Trucks	7	98	1	0	2	0	9	0	7	103	1	0	4	0	9	0	241
% Trucks	0.8	2.5	1.4	0	0.4	0	1	0	5.6	2.5	0.3	0	2.6	0	5.3	0	2.1

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	69	**360**	**8**	**13**	**450**	50	6	**87**	0	**143**	**13**	365	22	7	407	12	2	**16**	0	30	**1030**
12:15 PM	77	339	6	3	425	33	6	84	0	123	7	**385**	21	5	**418**	13	6	13	0	**32**	998
12:30 PM	67	332	5	6	410	**52**	3	67	0	122	10	337	24	5	376	**14**	5	11	0	30	938
12:45 PM	**91**	342	4	7	444	38	**7**	86	0	131	8	347	**30**	**8**	393	8	**7**	15	0	30	998
Total Volume	304	1373	23	29	1729	173	22	324	0	519	38	1434	97	25	1594	47	20	55	0	122	3964
% App. Total	17.6	79.4	1.3	1.7		33.3	4.2	62.4	0		2.4	90	6.1	1.6		38.5	16.4	45.1	0		
PHF	.835	.953	.719	.558	.961	.832	.786	.931	.000	.907	.731	.931	.808	.781	.953	.839	.714	.859	.000	.953	.962
Cars	302	1339	23	29	1693	172	22	322	0	516	35	1400	97	25	1557	47	20	51	0	118	3884
% Cars	99.3	97.5	100	100	97.9	99.4	100	99.4	0	99.4	92.1	97.6	100	100	97.7	100	100	92.7	0	96.7	98.0
Trucks	2	34	0	0	36	1	0	2	0	3	3	34	0	0	37	0	0	4	0	4	80
% Trucks	0.7	2.5	0	0	2.1	0.6	0	0.6	0	0.6	7.9	2.4	0	0	2.3	0	0	7.3	0	3.3	2.0

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200s1
Site Code : 61720001
Start Date : 2/18/2012
Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM					11:45 AM					01:00 PM					01:00 PM				
+0 mins.	69	**360**	8	13	**450**	46	**8**	**91**	0	**145**	**10**	322	24	8	364	**16**	7	16	0	**39**
+15 mins.	77	339	6	3	425	50	6	87	0	143	7	**412**	29	3	**451**	10	6	**23**	0	39
+30 mins.	67	332	5	6	410	33	6	84	0	123	10	381	23	**10**	424	9	**9**	8	0	26
+45 mins.	**91**	342	4	7	444	**52**	3	67	0	122	8	357	**33**	4	402	14	7	16	0	37
Total Volume	304	1373	23	29	1729	181	23	329	0	533	35	1472	109	25	1641	49	29	63	0	141
% App. Total	17.6	79.4	1.3	1.7		34	4.3	61.7	0		2.1	89.7	6.6	1.5		34.8	20.6	44.7	0	
PHF	.835	.953	.719	.558	.961	.870	.719	.904	.000	.919	.875	.893	.826	.625	.910	.766	.806	.685	.000	.904
Cars	302	1339	23	29	1693	181	23	327	0	531	32	1444	109	25	1610	48	29	61	0	138
% Cars	99.3	97.5	100	100	97.9	100	100	99.4	0	99.6	91.4	98.1	100	100	98.1	98	100	96.8	0	97.9
Trucks	2	34	0	0	36	0	0	2	0	2	3	28	0	0	31	1	0	2	0	3
% Trucks	0.7	2.5	0	0	2.1	0	0	0.6	0	0.4	8.6	1.9	0	0	1.9	2	0	3.2	0	2.1

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200s1
Site Code : 61720001
Start Date : 2/18/2012
Page No : 1

Groups Printed- Cars

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
11:00 AM	66	289	4	7	35	9	78	0	11	295	15	4	10	9	12	0	844
11:15 AM	66	298	6	10	52	6	62	0	9	297	22	12	21	3	8	0	872
11:30 AM	61	303	4	7	47	5	63	0	25	351	32	7	13	5	11	0	934
11:45 AM	64	288	2	12	46	8	90	0	6	301	16	4	10	5	19	0	871
Total	257	1178	16	36	180	28	293	0	51	1244	85	27	54	22	50	0	3521
12:00 PM	69	351	8	13	50	6	87	0	13	357	22	7	12	2	15	0	1012
12:15 PM	75	333	6	3	33	6	83	0	6	370	21	5	13	6	13	0	973
12:30 PM	67	321	5	6	52	3	67	0	9	333	24	5	14	5	11	0	922
12:45 PM	91	334	4	7	37	7	85	0	7	340	30	8	8	7	12	0	977
Total	302	1339	23	29	172	22	322	0	35	1400	97	25	47	20	51	0	3884
01:00 PM	72	251	5	6	47	3	88	0	9	316	24	8	16	7	16	0	868
01:15 PM	56	323	8	3	35	5	70	0	6	403	29	3	10	6	22	0	979
01:30 PM	52	351	10	9	38	3	88	0	10	372	23	10	8	9	7	0	990
01:45 PM	79	324	7	8	44	3	74	0	7	353	33	4	14	7	16	0	973
Total	259	1249	30	26	164	14	320	0	32	1444	109	25	48	29	61	0	3810
Grand Total	818	3766	69	91	516	64	935	0	118	4088	291	77	149	71	162	0	11215
Apprch %	17.2	79.4	1.5	1.9	34.1	4.2	61.7	0	2.6	89.4	6.4	1.7	39	18.6	42.4	0	
Total %	7.3	33.6	0.6	0.8	4.6	0.6	8.3	0	1.1	36.5	2.6	0.7	1.3	0.6	1.4	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	69	**351**	**8**	**13**	**441**	50	6	**87**	0	**143**	**13**	357	22	7	399	12	2	**15**	0	29	**1012**
12:15 PM	75	333	6	3	417	33	6	83	0	122	6	**370**	21	5	**402**	13	6	13	0	**32**	973
12:30 PM	67	321	5	6	399	**52**	3	67	0	122	9	333	24	5	371	**14**	5	11	0	30	922
12:45 PM	**91**	334	4	7	436	37	**7**	85	0	129	7	340	**30**	**8**	385	8	**7**	12	0	27	977
Total Volume	302	1339	23	29	1693	172	22	322	0	516	35	1400	97	25	1557	47	20	51	0	118	3884
% App. Total	17.8	79.1	1.4	1.7		33.3	4.3	62.4	0		2.2	89.9	6.2	1.6		39.8	16.9	43.2	0		
PHF	.830	.954	.719	.558	.960	.827	.786	.925	.000	.902	.673	.946	.808	.781	.968	.839	.714	.850	.000	.922	.959

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200s1
Site Code : 61720001
Start Date : 2/18/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
11:00 AM	2	14	0	0	1	0	0	0	0	9	0	0	0	0	2	0	28
11:15 AM	0	10	0	0	0	0	1	0	1	17	1	0	0	0	0	0	30
11:30 AM	0	7	0	0	0	0	2	0	0	8	0	0	2	0	1	0	20
11:45 AM	1	7	0	0	0	0	1	0	0	7	0	0	1	0	0	0	17
Total	3	38	0	0	1	0	4	0	1	41	1	0	3	0	3	0	95
12:00 PM	0	9	0	0	0	0	0	0	0	8	0	0	0	0	1	0	18
12:15 PM	2	6	0	0	0	0	1	0	1	15	0	0	0	0	0	0	25
12:30 PM	0	11	0	0	0	0	0	0	1	4	0	0	0	0	0	0	16
12:45 PM	0	8	0	0	1	0	1	0	1	7	0	0	0	0	3	0	21
Total	2	34	0	0	1	0	2	0	3	34	0	0	0	0	4	0	80
01:00 PM	0	10	0	0	0	0	0	0	1	6	0	0	0	0	0	0	17
01:15 PM	0	5	0	0	0	0	2	0	1	9	0	0	0	0	1	0	18
01:30 PM	1	6	1	0	0	0	0	0	0	9	0	0	1	0	1	0	19
01:45 PM	1	5	0	0	0	0	1	0	1	4	0	0	0	0	0	0	12
Total	2	26	1	0	0	0	3	0	3	28	0	0	1	0	2	0	66
Grand Total	7	98	1	0	2	0	9	0	7	103	1	0	4	0	9	0	241
Apprch %	6.6	92.5	0.9	0	18.2	0	81.8	0	6.3	92.8	0.9	0	30.8	0	69.2	0	
Total %	2.9	40.7	0.4	0	0.8	0	3.7	0	2.9	42.7	0.4	0	1.7	0	3.7	0	

	Route 1A From North					Boardman St From East					Route 1A From South					Boardman St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	**2**	**14**	0	0	**16**	**1**	0	0	0	1	0	9	0	0	9	0	0	**2**	0	2	28
11:15 AM	0	10	0	0	10	0	0	1	0	1	**1**	**17**	**1**	0	**19**	0	0	0	0	0	**30**
11:30 AM	0	7	0	0	7	0	0	**2**	0	**2**	0	8	0	0	8	**2**	0	1	0	**3**	20
11:45 AM	1	7	0	0	8	0	0	1	0	1	0	7	0	0	7	1	0	0	0	1	17
Total Volume	3	38	0	0	41	1	0	4	0	5	1	41	1	0	43	3	0	3	0	6	95
% App. Total	7.3	92.7	0	0		20	0	80	0		2.3	95.3	2.3	0		50	0	50	0		
PHF	.375	.679	.000	.000	.641	.250	.000	.500	.000	.625	.250	.603	.250	.000	.566	.375	.000	.375	.000	.500	.792

Accurate Counts
978-664-2565

N/S Street : Route 1A
E/W Street: Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S1
Site Code : 61720001
Start Date : 2/18/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	6	0	6
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	8	0	8
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
01:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
01:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	4	0	4
Grand Total	0	0	0	7	0	0	0	1	0	0	0	0	0	0	0	4	12	0	12
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

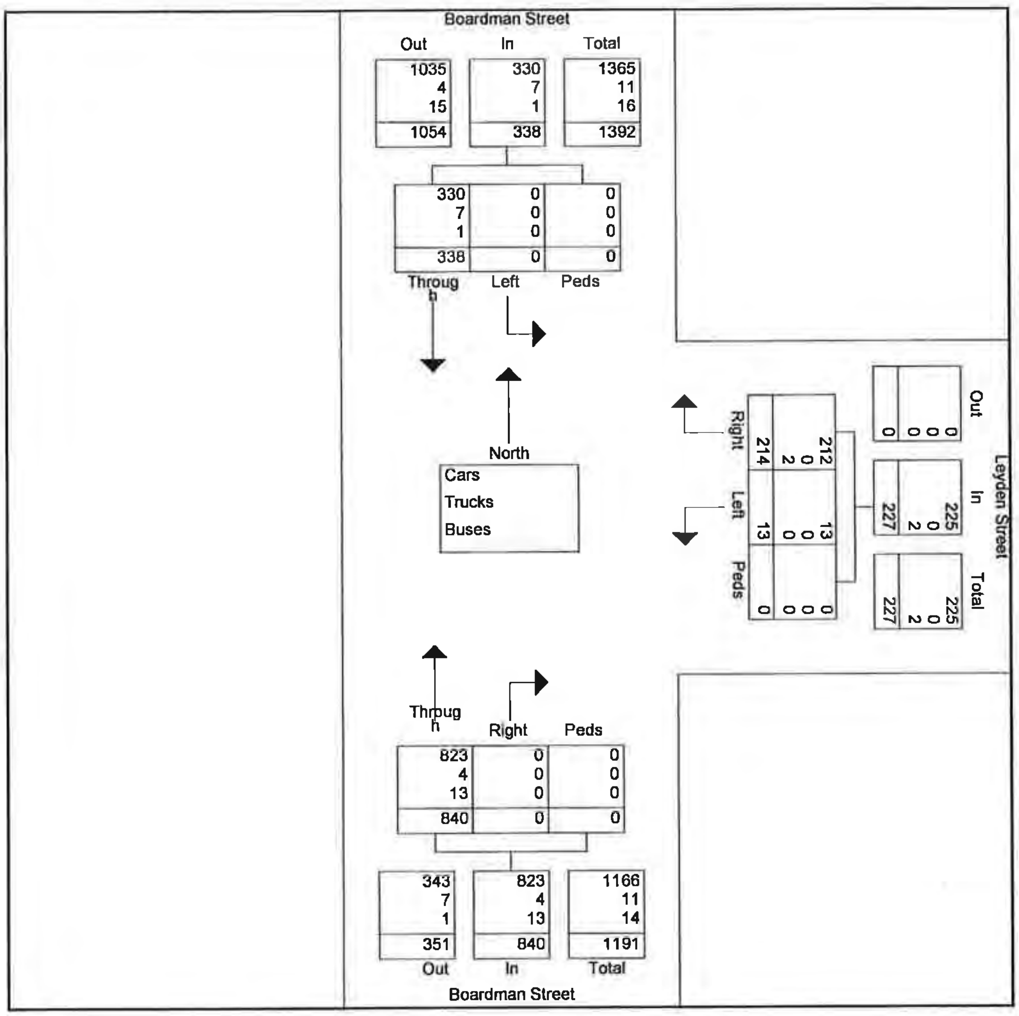
	Route 1A From North				Boardman St From East				Route 1A From South				Boardman St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201am
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Cars - Trucks - Buses

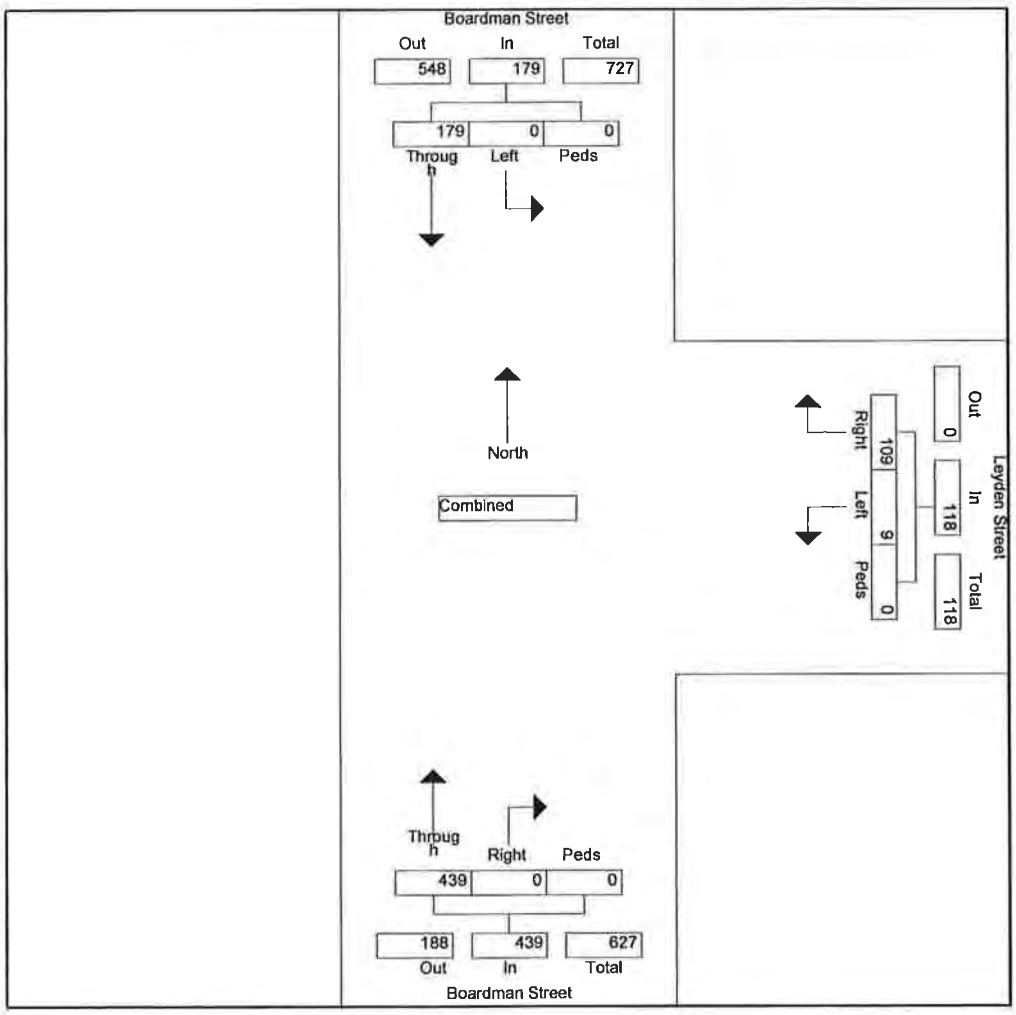
	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15 AM	0	48	0	0	25	0	3	0	0	110	0	0	186
07:30 AM	0	45	0	0	24	0	0	0	0	115	0	0	184
07:45 AM	0	40	0	0	32	0	3	0	0	108	0	0	183
08:00 AM	0	46	0	0	28	0	3	0	0	106	0	0	183
Total	0	179	0	0	109	0	9	0	0	439	0	0	736
08:15 AM	0	51	0	0	35	0	0	0	0	90	0	0	176
08:30 AM	0	39	0	0	22	0	3	0	0	106	0	0	170
08:45 AM	0	35	0	0	31	0	1	0	0	103	0	0	170
09:00 AM	0	34	0	0	17	0	0	0	0	102	0	0	153
Total	0	159	0	0	105	0	4	0	0	401	0	0	669
Grand Total	0	338	0	0	214	0	13	0	0	840	0	0	1405
Apprch %	0.0	100.0	0.0	0.0	94.3	0.0	5.7	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	24.1	0.0	0.0	15.2	0.0	0.9	0.0	0.0	59.8	0.0	0.0	



Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201am
Site Code : 00617201
Start Date : 02/09/2012
Page : 2

	Boardman Street From North					Leyden Street From East					Boardman Street From South					
End Time	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																
Intersection	07:15 AM															
Volume	0	179	0	0	179	109	0	9	0	118	0	439	0	0	439	736
Percent	0.0	100.0	0.0	0.0		92.4	0.0	7.6	0.0		0.0	100.0	0.0	0.0		
High Int.	07:15 AM					07:45 AM					07:30 AM					07:15
Volume	0	48	0	0	48	32	0	3	0	35	0	115	0	0	115	186
Peak Factor					0.932					0.843					0.954	0.989

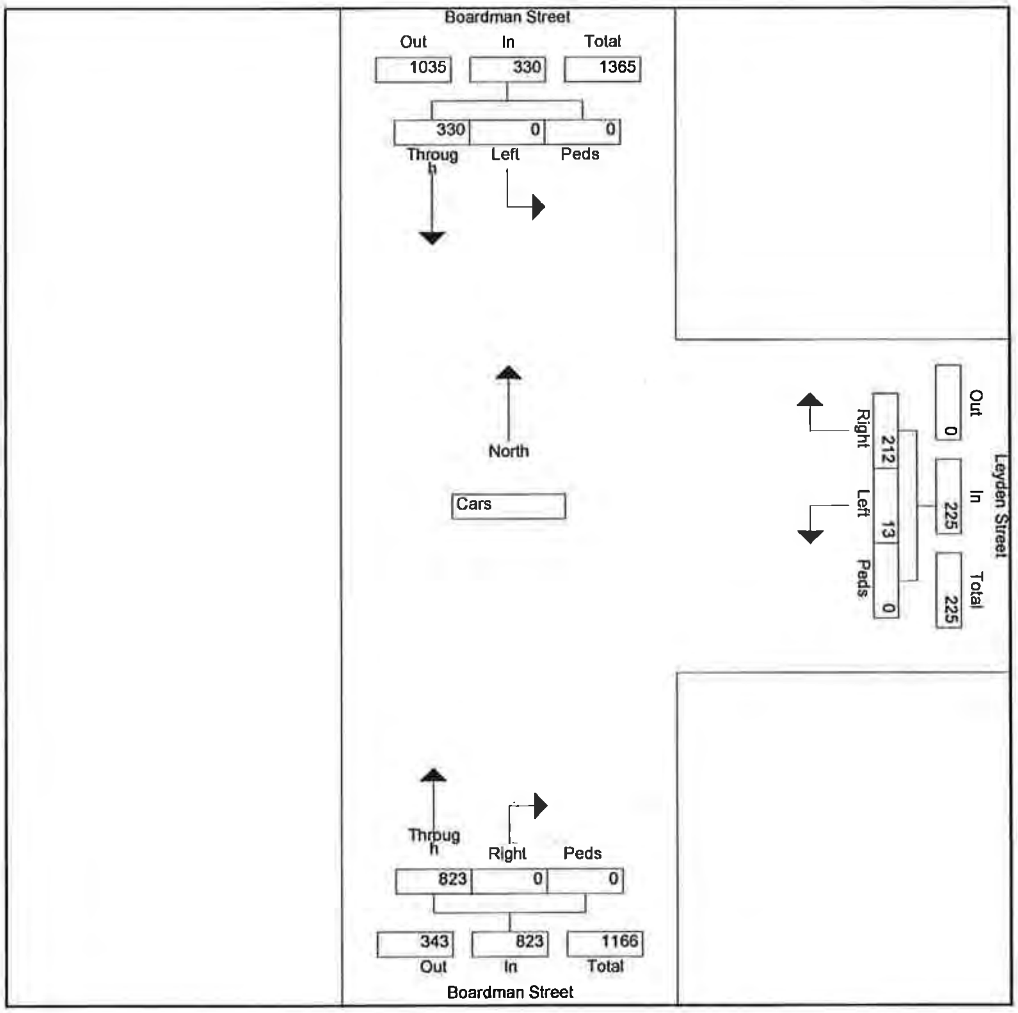


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201am
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Cars

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15 AM	0	48	0	0	25	0	3	0	0	110	0	0	186
07:30 AM	0	45	0	0	24	0	0	0	0	113	0	0	182
07:45 AM	0	40	0	0	32	0	3	0	0	105	0	0	180
08:00 AM	0	45	0	0	28	0	3	0	0	102	0	0	178
Total	0	178	0	0	109	0	9	0	0	430	0	0	726
08:15 AM	0	49	0	0	35	0	0	0	0	89	0	0	173
08:30 AM	0	39	0	0	20	0	3	0	0	105	0	0	167
08:45 AM	0	33	0	0	31	0	1	0	0	100	0	0	165
09:00 AM	0	31	0	0	17	0	0	0	0	99	0	0	147
Total	0	152	0	0	103	0	4	0	0	393	0	0	652
Grand Total	0	330	0	0	212	0	13	0	0	823	0	0	1378
Apprch %	0.0	100.0	0.0	0.0	94.2	0.0	5.8	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	23.9	0.0	0.0	15.4	0.0	0.9	0.0	0.0	59.7	0.0	0.0	

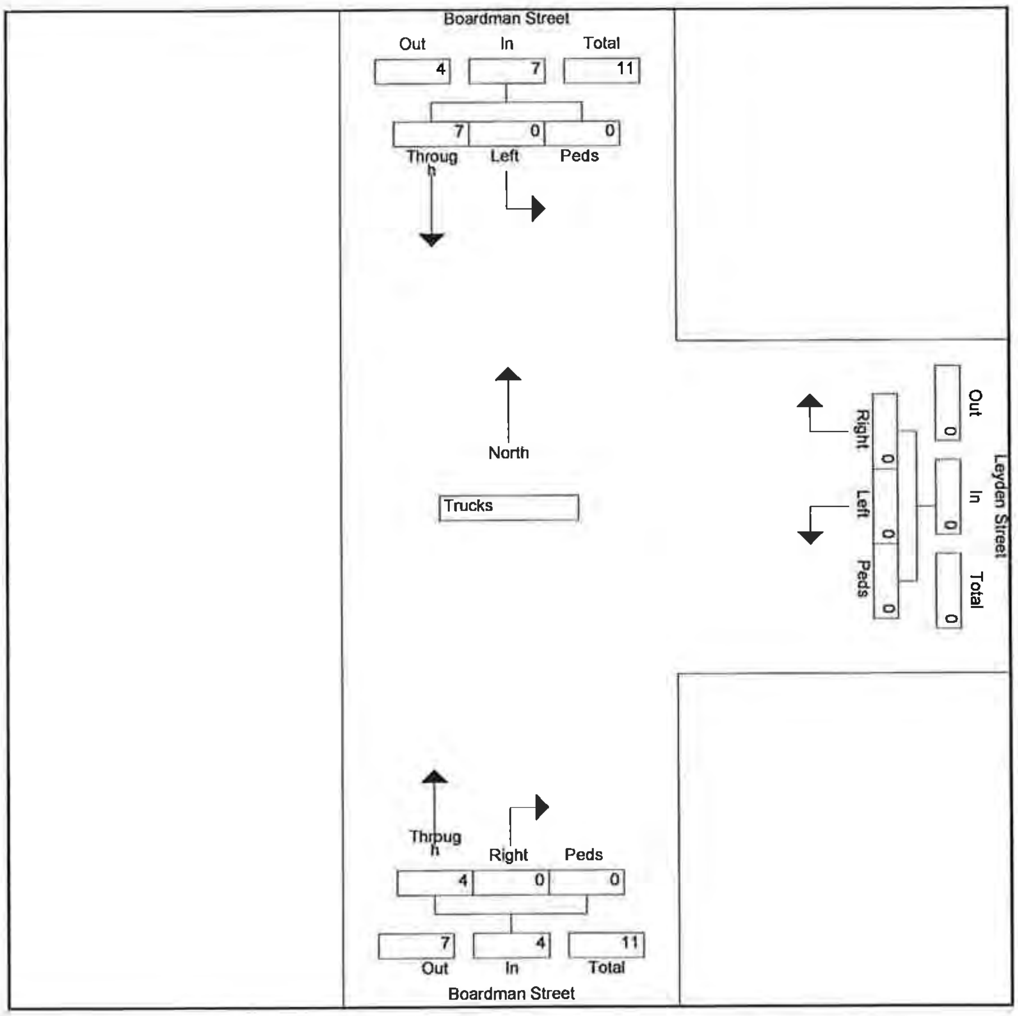


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201am
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Trucks

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	1	0	0	0	0	0	0	0	2	0	0	3
08:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	2	0	0	0	0	0	0	0	1	0	0	3
09:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	6	0	0	0	0	0	0	0	2	0	0	8
Grand Total	0	7	0	0	0	0	0	0	0	4	0	0	11
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	63.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.4	0.0	0.0	

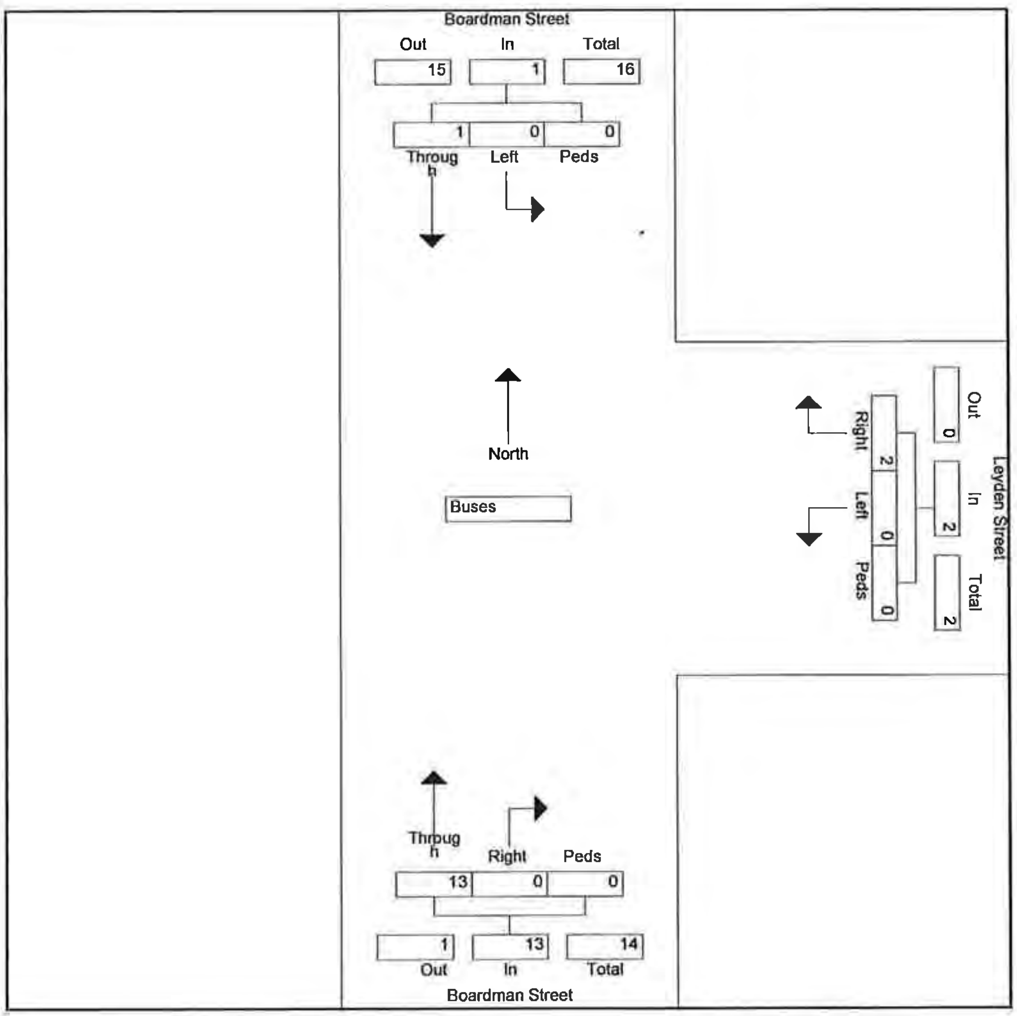


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201am
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Buses

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	3
Total	0	0	0	0	0	0	0	0	0	7	0	0	7
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
08:30 AM	0	0	0	0	2	0	0	0	0	1	0	0	3
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
09:00 AM	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	1	0	0	2	0	0	0	0	6	0	0	9
Grand Total	0	1	0	0	2	0	0	0	0	13	0	0	16
Apprch %	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	6.3	0.0	0.0	12.5	0.0	0.0	0.0	0.0	81.3	0.0	0.0	

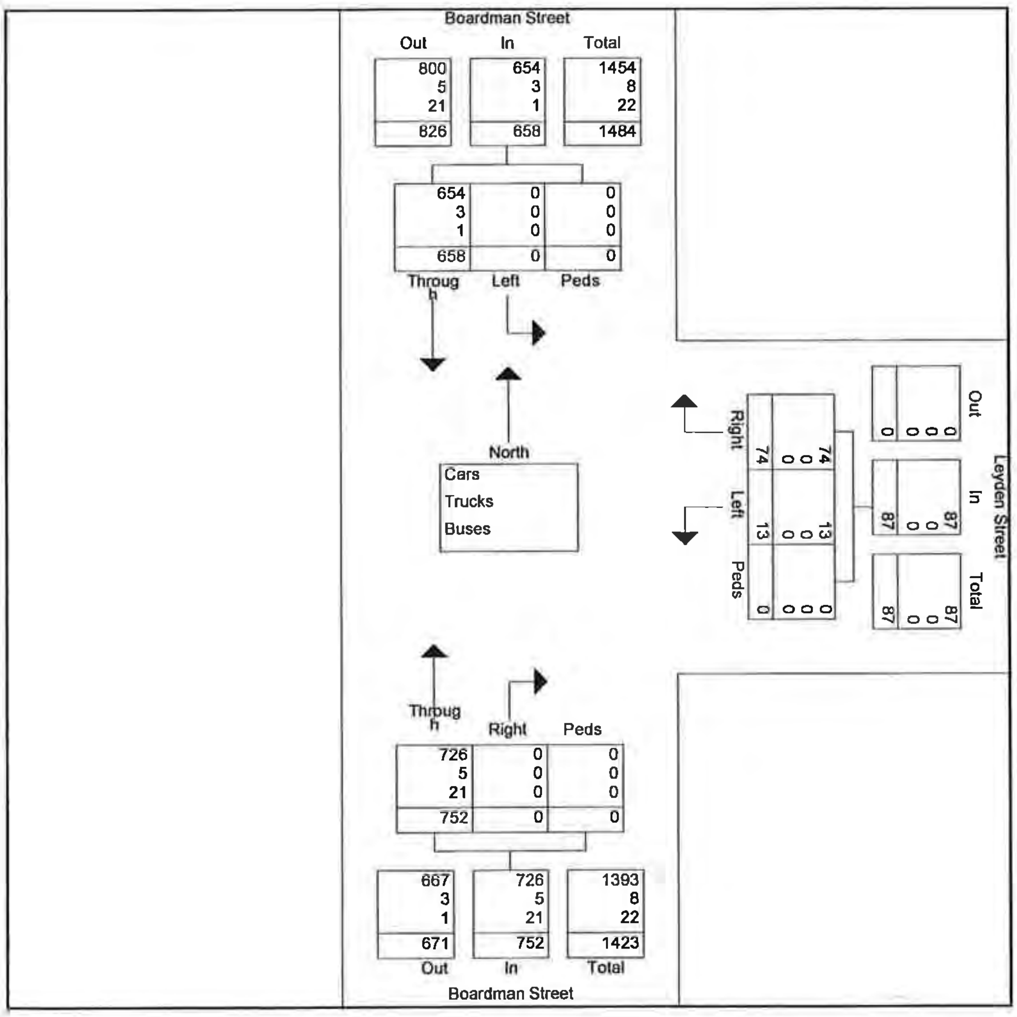


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201pm
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Cars - Trucks - Buses

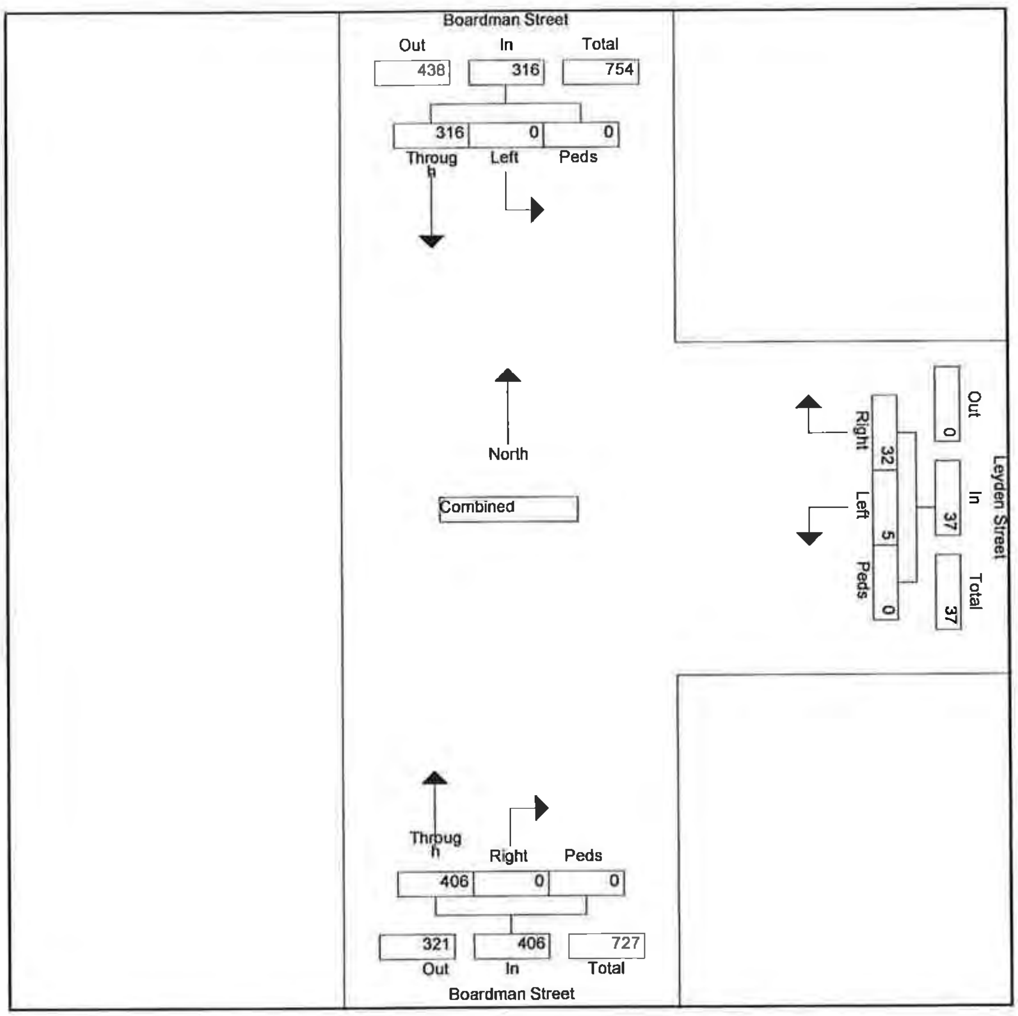
	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:15 PM	0	103	0	0	7	0	1	0	0	116	0	0	227
04:30 PM	0	70	0	0	7	0	1	0	0	94	0	0	172
04:45 PM	0	71	0	0	11	0	1	0	0	98	0	0	181
05:00 PM	0	72	0	0	7	0	2	0	0	98	0	0	179
Total	0	316	0	0	32	0	5	0	0	406	0	0	759
05:15 PM	0	82	0	0	17	0	0	0	0	85	0	0	184
05:30 PM	0	86	0	0	11	0	4	0	0	93	0	0	194
05:45 PM	0	93	0	0	7	0	1	0	0	92	0	0	193
06:00 PM	0	81	0	0	7	0	3	0	0	76	0	0	167
Total	0	342	0	0	42	0	8	0	0	346	0	0	738
Grand Total	0	658	0	0	74	0	13	0	0	752	0	0	1497
Apprch %	0.0	100.0	0.0	0.0	85.1	0.0	14.9	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	44.0	0.0	0.0	4.9	0.0	0.9	0.0	0.0	50.2	0.0	0.0	



Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201pm
Site Code : 00617201
Start Date : 02/09/2012
Page : 2

	Boardman Street From North					Leyden Street From East					Boardman Street From South					
End Time	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																
Intersection	04:15 PM															
Volume	0	316	0	0	316	32	0	5	0	37	0	406	0	0	406	759
Percent	0.0	100.0	0.0	0.0		86.5	0.0	13.5	0.0		0.0	100.0	0.0	0.0		
High Int.	04:15 PM					04:45 PM					04:15 PM					04:15
Volume	0	103	0	0	103	11	0	2	0	12	0	116	0	0	116	227
Peak Factor					0.767					0.771					0.875	0.836

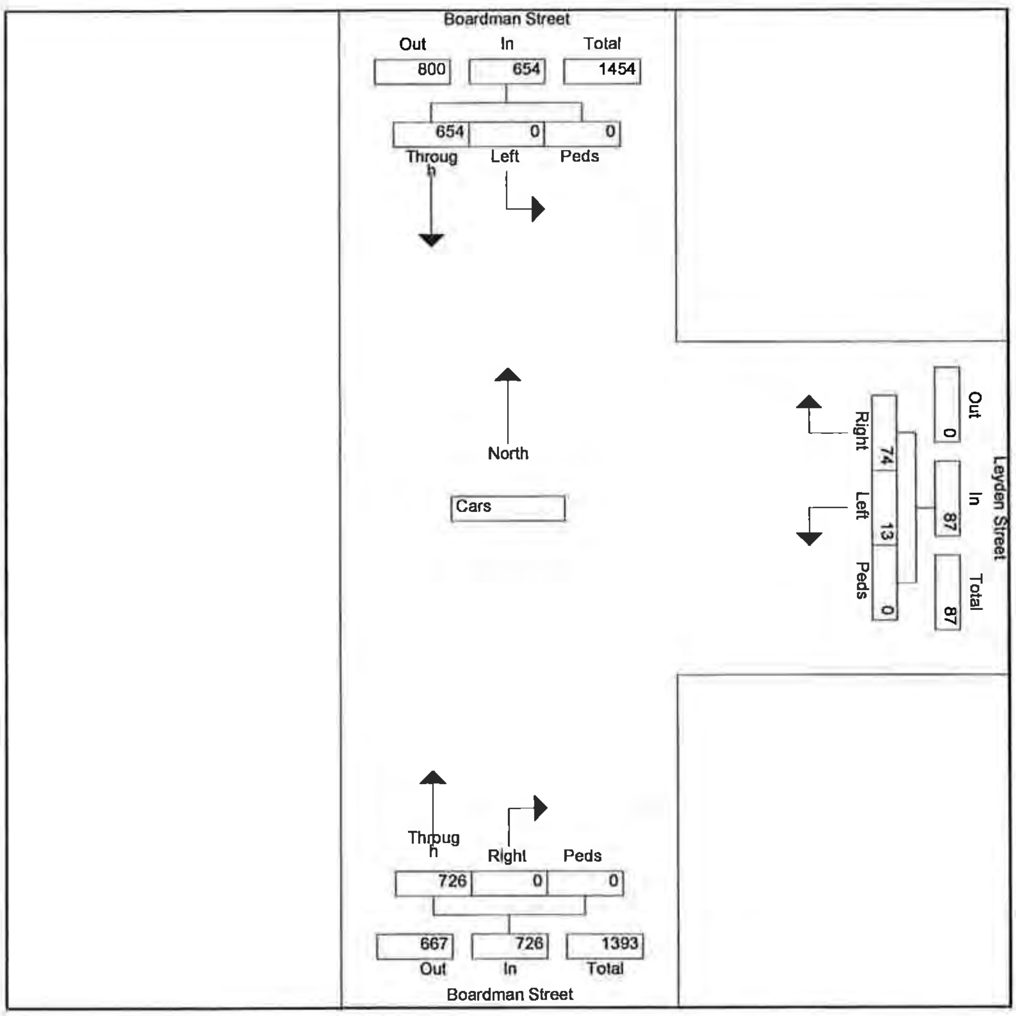


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201pm
Site Code : 00617201
Start Date : 02/09/2012

Groups Printed: Cars

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:15 PM	0	102	0	0	7	0	1	0	0	111	0	0	221
04:30 PM	0	69	0	0	7	0	1	0	0	90	0	0	167
04:45 PM	0	71	0	0	11	0	1	0	0	96	0	0	179
05:00 PM	0	72	0	0	7	0	2	0	0	94	0	0	175
Total	0	314	0	0	32	0	5	0	0	391	0	0	742
05:15 PM	0	81	0	0	17	0	0	0	0	81	0	0	179
05:30 PM	0	86	0	0	11	0	4	0	0	91	0	0	192
05:45 PM	0	93	0	0	7	0	1	0	0	91	0	0	192
06:00 PM	0	80	0	0	7	0	3	0	0	72	0	0	162
Total	0	340	0	0	42	0	8	0	0	335	0	0	725
Grand Total	0	654	0	0	74	0	13	0	0	726	0	0	1467
Apprch %	0.0	100.0	0.0	0.0	85.1	0.0	14.9	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	44.6	0.0	0.0	5.0	0.0	0.9	0.0	0.0	49.5	0.0	0.0	

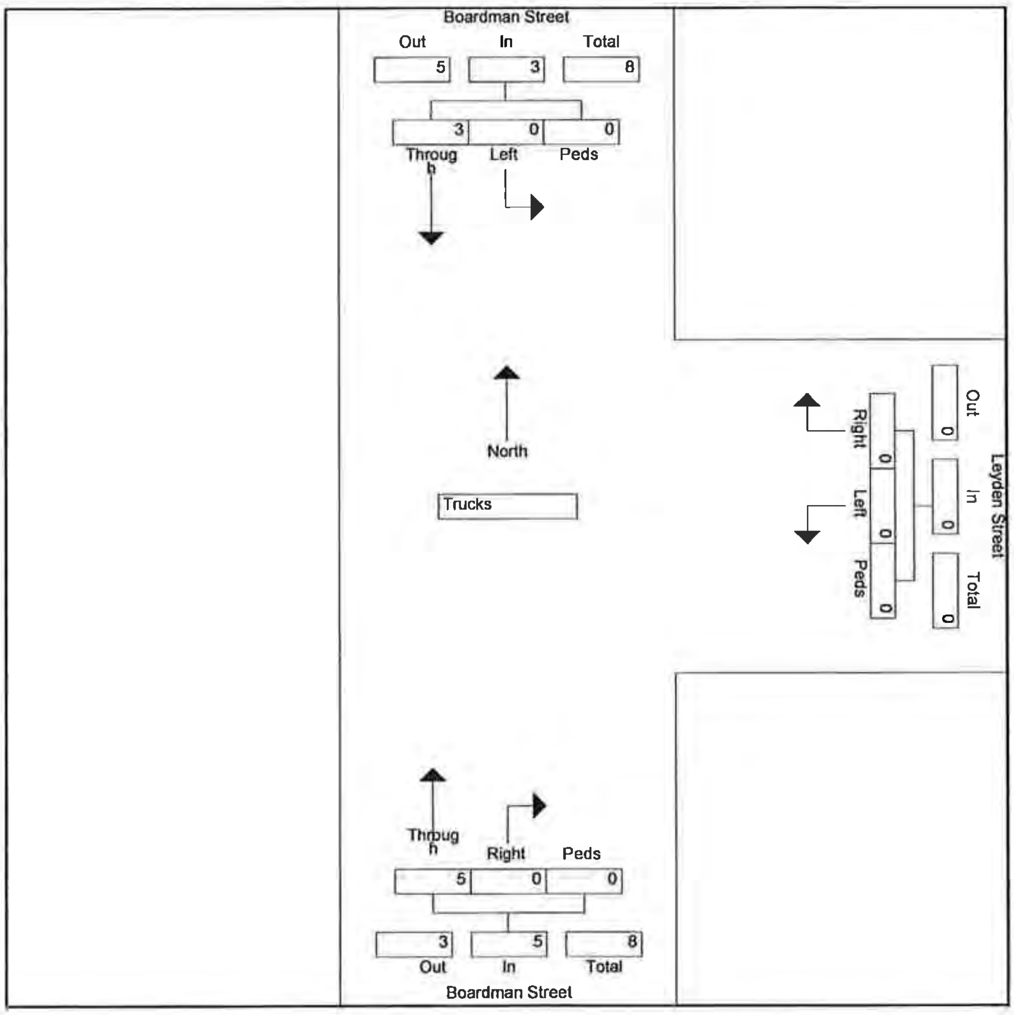


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201pm
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Trucks

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	1	0	0	2
05:15 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	2	0	0	0	0	0	0	0	4	0	0	6
Grand Total	0	3	0	0	0	0	0	0	0	5	0	0	8
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.5	0.0	0.0	

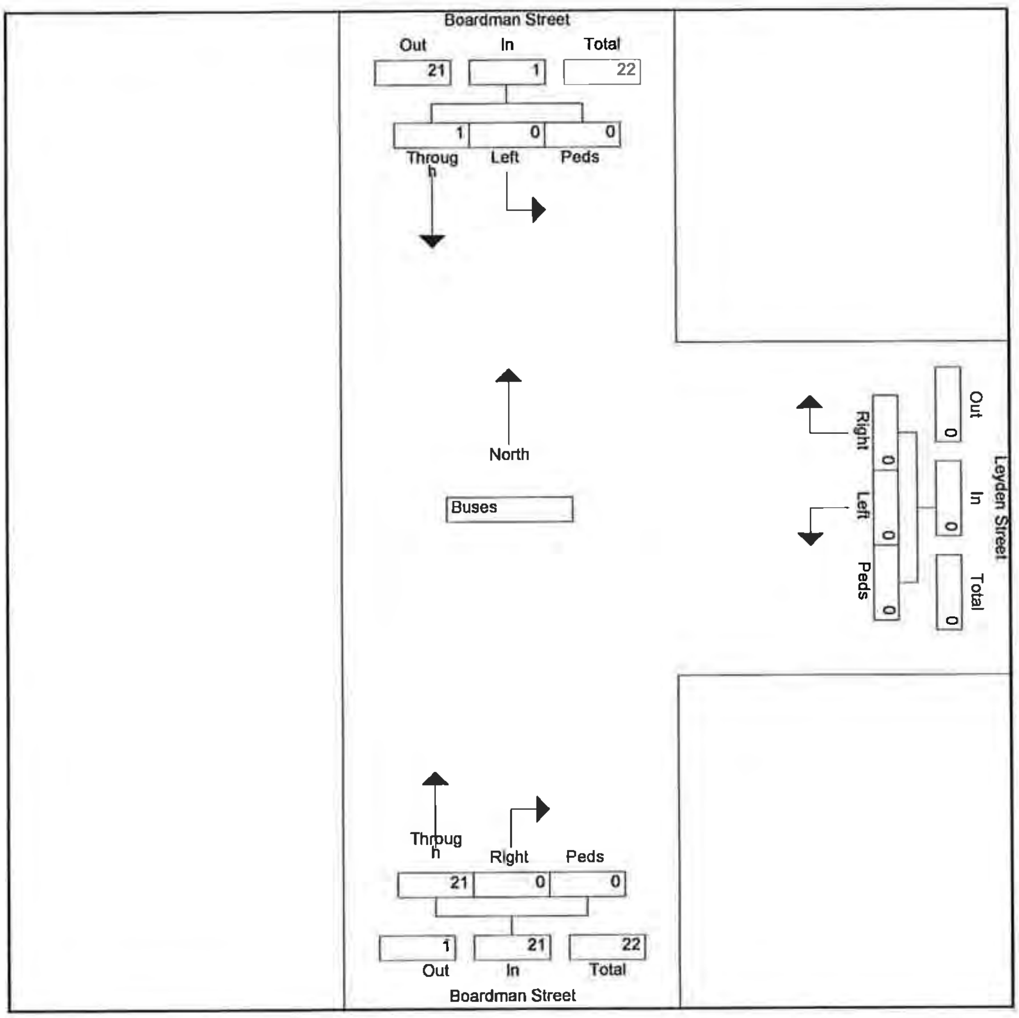


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201pm
Site Code : 00617201
Start Date : 02/09/2012
Page : 1

Groups Printed: Buses

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:15 PM	0	1	0	0	0	0	0	0	0	4	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	4
Total	0	1	0	0	0	0	0	0	0	14	0	0	15
05:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	0	0	0	0	7	0	0	7
Grand Total	0	1	0	0	0	0	0	0	0	21	0	0	22
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.5	0.0	0.0	

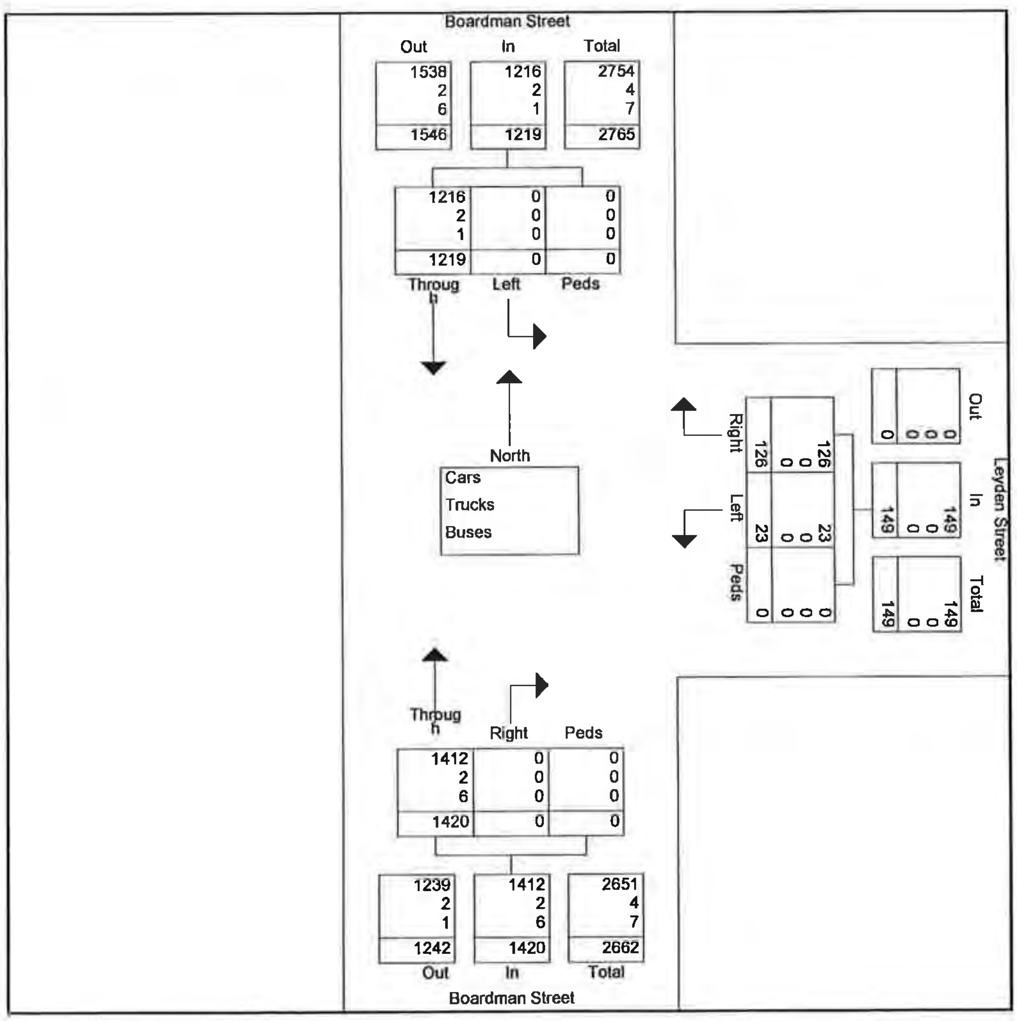


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201sa
Site Code : 00617201
Start Date : 02/18/2012
Page : 1

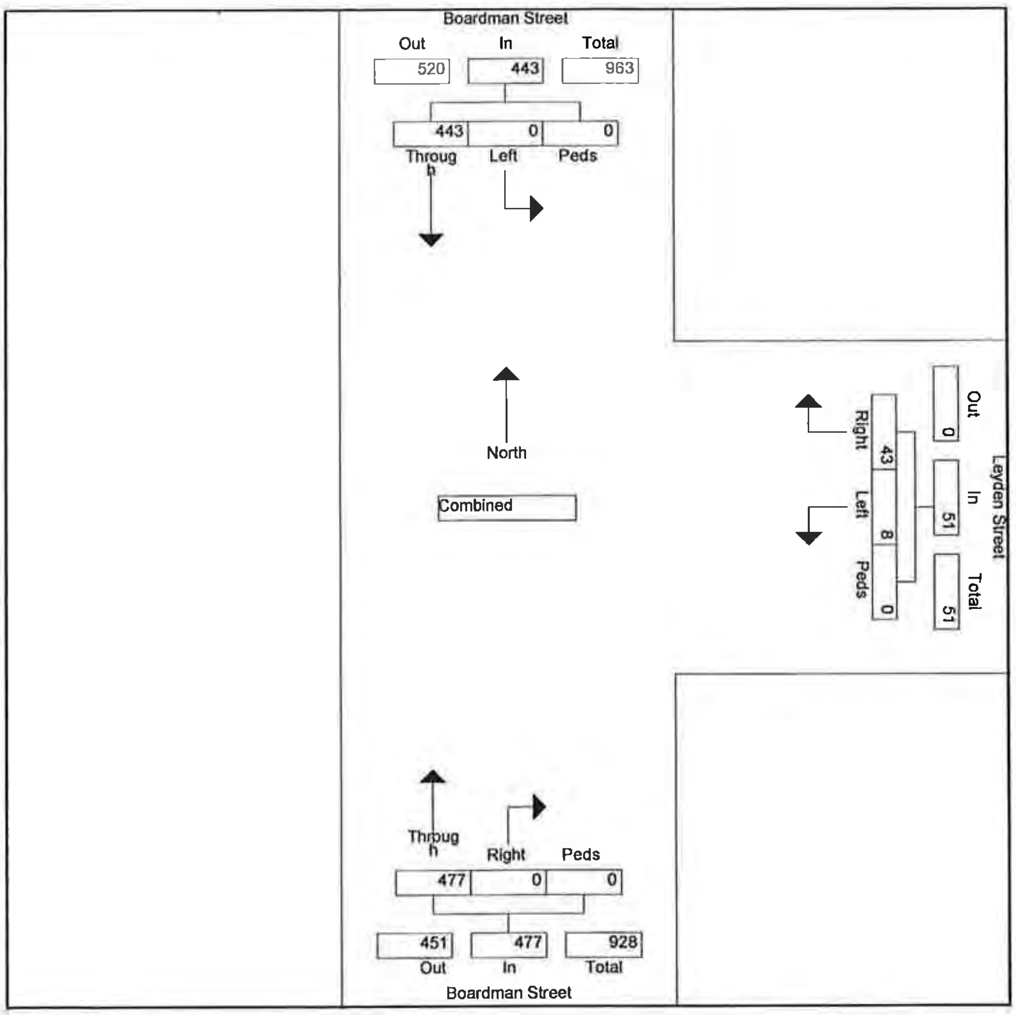
Groups Printed: Cars - Trucks - Buses

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
11:15 AM	0	88	0	0	11	0	2	0	0	120	0	0	221
11:30 AM	0	86	0	0	13	0	2	0	0	109	0	0	210
11:45 AM	0	99	0	0	11	0	1	0	0	119	0	0	230
12:00 PM	0	94	0	0	8	0	1	0	0	124	0	0	227
Total	0	367	0	0	43	0	6	0	0	472	0	0	888
12:15 PM	0	97	0	0	13	0	1	0	0	128	0	0	239
12:30 PM	0	108	0	0	15	0	2	0	0	116	0	0	241
12:45 PM	0	100	0	0	6	0	2	0	0	116	0	0	224
01:00 PM	0	138	0	0	9	0	3	0	0	117	0	0	267
Total	0	443	0	0	43	0	8	0	0	477	0	0	971
01:15 PM	0	98	0	0	9	0	1	0	0	129	0	0	237
01:30 PM	0	100	0	0	9	0	1	0	0	113	0	0	223
01:45 PM	0	90	0	0	15	0	4	0	0	109	0	0	218
02:00 PM	0	121	0	0	7	0	3	0	0	120	0	0	251
Total	0	409	0	0	40	0	9	0	0	471	0	0	929
Grand Total	0	1219	0	0	126	0	23	0	0	1420	0	0	2788
Apprch %	0.0	100.0	0.0	0.0	84.6	0.0	15.4	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	43.7	0.0	0.0	4.5	0.0	0.8	0.0	0.0	50.9	0.0	0.0	



Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

	Boardman Street From North					Leyden Street From East					Boardman Street From South					
End Time	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Right	Through	Left	Peds	App. Total	Int. Total
Peak Hour From 11:15 AM to 02:00 PM - Peak 1 of 1																
Intersection	12:15 PM															
Volume	0	443	0	0	443	43	0	8	0	51	0	477	0	0	477	971
Percent	0.0	100.0	0.0	0.0		84.3	0.0	15.7	0.0		0.0	100.0	0.0	0.0		
High Int.	01:00 PM					12:30 PM					12:15 PM					01:00
Volume	0	138	0	0	138	15	0	3	0	17	0	128	0	0	128	267
Peak Factor					0.803					0.750					0.932	0.909

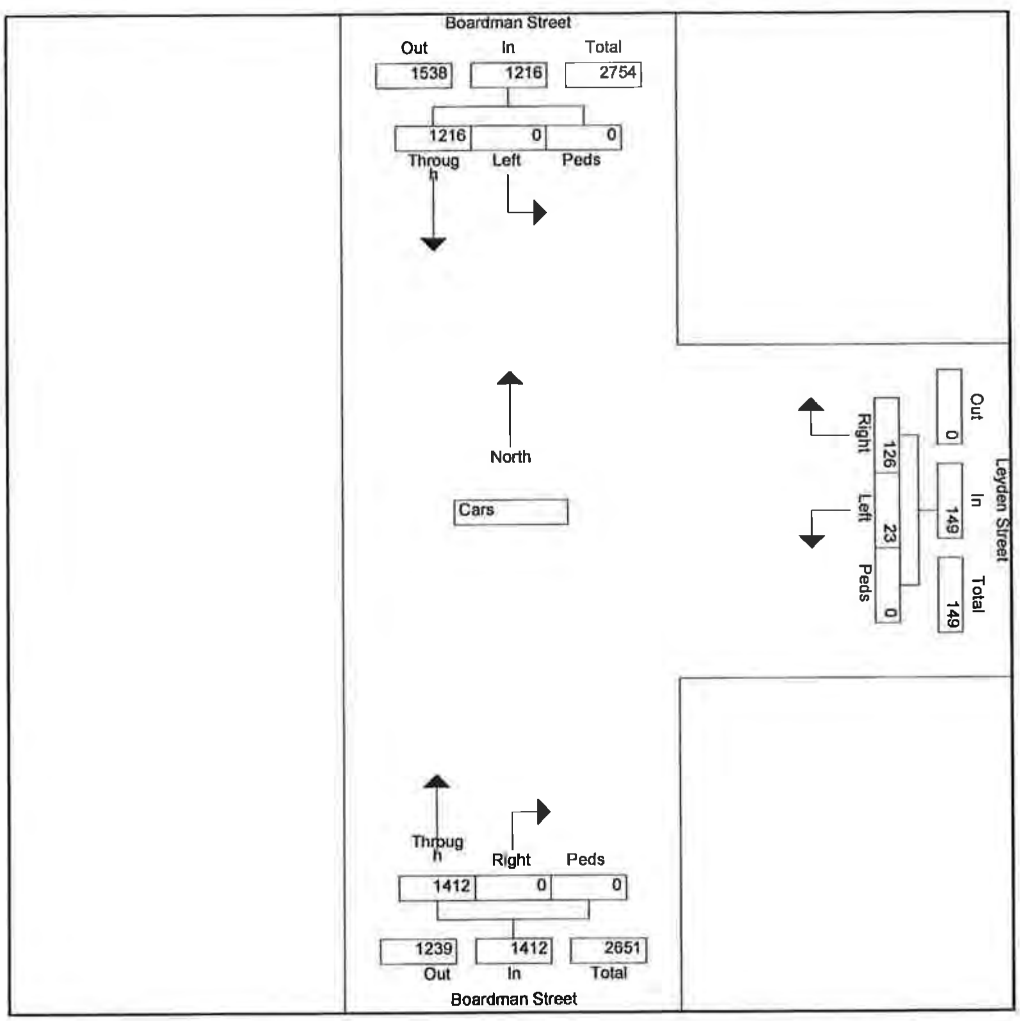


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201sa
Site Code : 00617201
Start Date : 02/18/2012
Page : 1

Groups Printed: Cars

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
11:15 AM	0	87	0	0	11	0	2	0	0	119	0	0	219
11:30 AM	0	86	0	0	13	0	2	0	0	108	0	0	209
11:45 AM	0	99	0	0	11	0	1	0	0	118	0	0	229
12:00 PM	0	94	0	0	8	0	1	0	0	123	0	0	226
Total	0	366	0	0	43	0	6	0	0	468	0	0	883
12:15 PM	0	97	0	0	13	0	1	0	0	128	0	0	239
12:30 PM	0	107	0	0	15	0	2	0	0	115	0	0	239
12:45 PM	0	100	0	0	6	0	2	0	0	116	0	0	224
01:00 PM	0	138	0	0	9	0	3	0	0	116	0	0	266
Total	0	442	0	0	43	0	8	0	0	475	0	0	968
01:15 PM	0	98	0	0	9	0	1	0	0	129	0	0	237
01:30 PM	0	100	0	0	9	0	1	0	0	112	0	0	222
01:45 PM	0	89	0	0	15	0	4	0	0	109	0	0	217
02:00 PM	0	121	0	0	7	0	3	0	0	119	0	0	250
Total	0	408	0	0	40	0	9	0	0	469	0	0	926
Grand Total	0	1216	0	0	126	0	23	0	0	1412	0	0	2777
Apprch %	0.0	100.0	0.0	0.0	84.6	0.0	15.4	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	43.8	0.0	0.0	4.5	0.0	0.8	0.0	0.0	50.8	0.0	0.0	

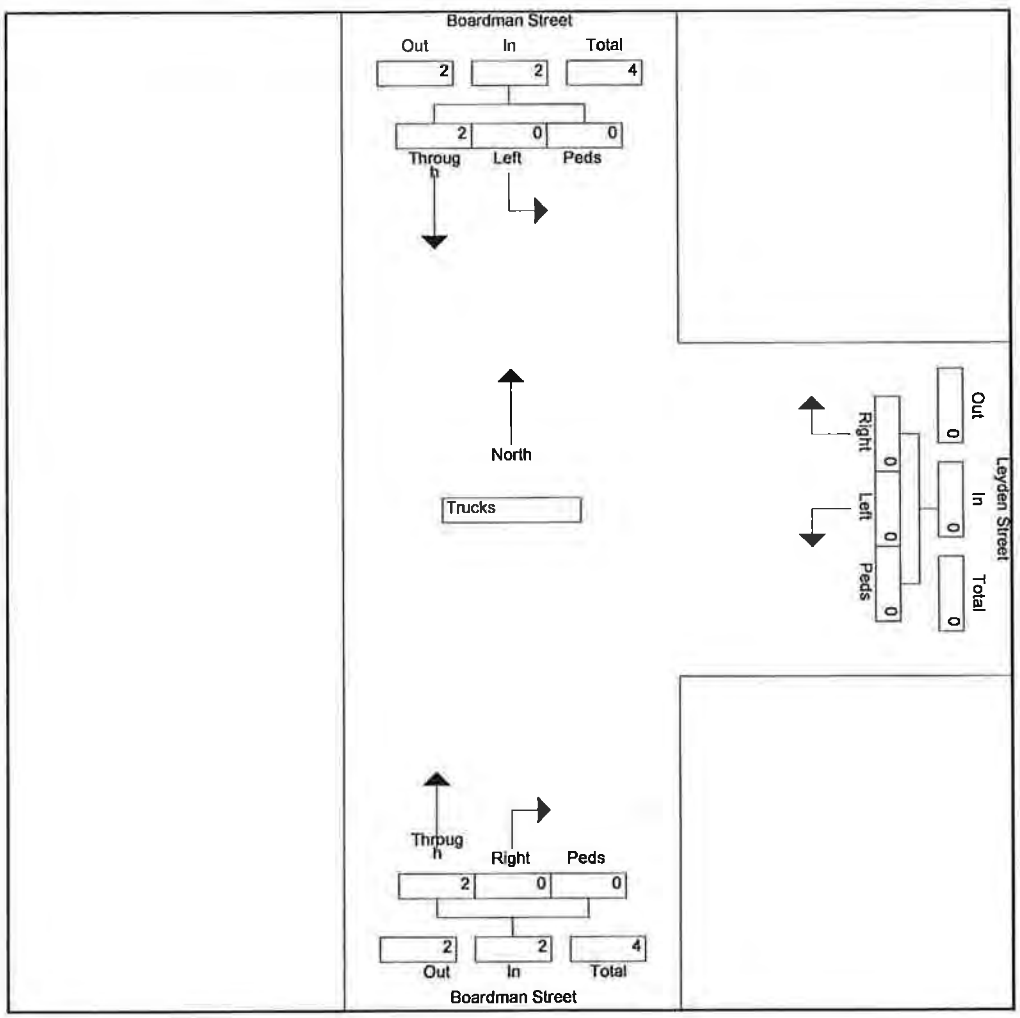


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201sa
Site Code : 00617201
Start Date : 02/18/2012

Groups Printed: Trucks

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
11:15 AM	0	1	0	0	0	0	0	0	0	1	0	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	2	0	0	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	2	0	0	0	0	0	0	0	2	0	0	4
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	

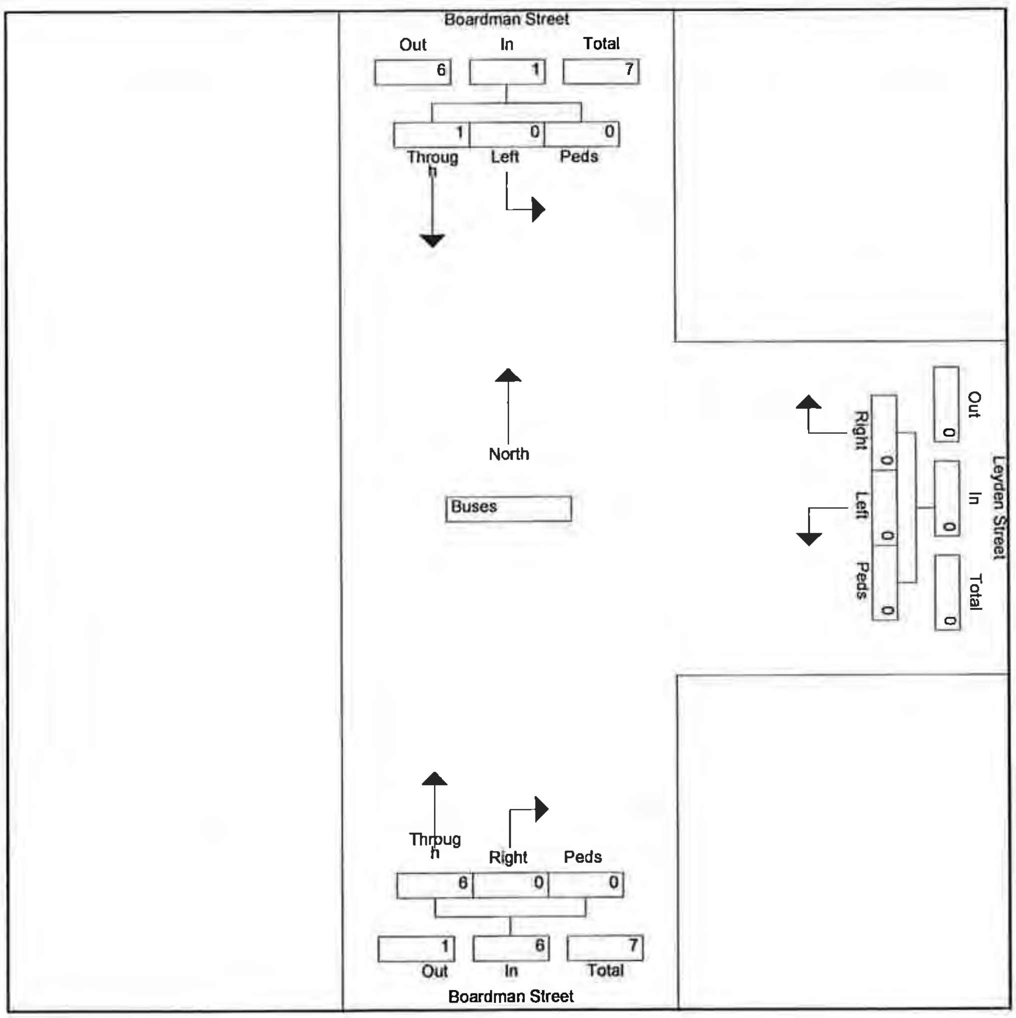


Vanasse & Associates
Boardman St at Leyden St
E.Boston, MA
Weather: Clear

File Name : 617201sa
Site Code : 00617201
Start Date : 02/18/2012
Page : 1

Groups Printed: Buses

	Boardman Street From North				Leyden Street From East				Boardman Street From South				
End Time	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	2	0	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	1	0	0	0	0	0	0	0	2	0	0	3
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	2	0	0	2
Grand Total	0	1	0	0	0	0	0	0	0	6	0	0	7
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	
Total %	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.7	0.0	0.0	



Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars - Trucks

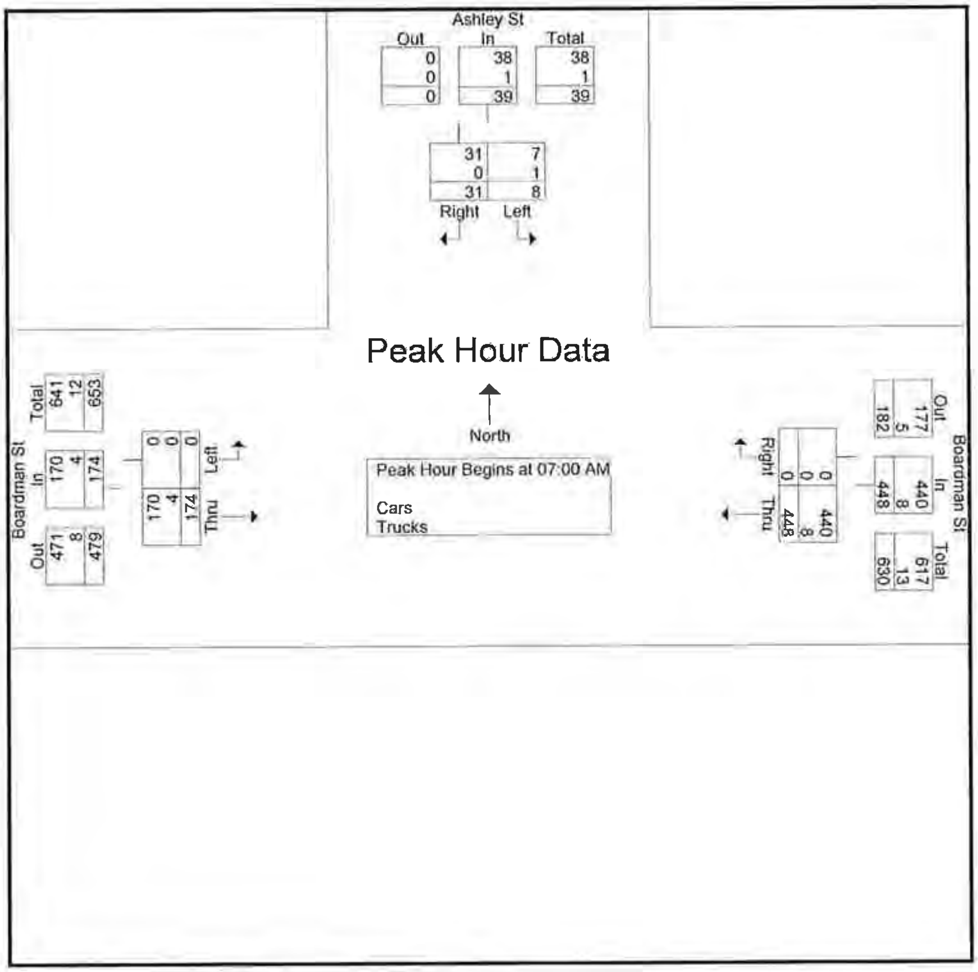
	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	3	10	124	0	0	46	183
07:15 AM	3	9	117	0	0	42	171
07:30 AM	1	8	102	0	0	37	148
07:45 AM	1	4	105	0	0	49	159
Total	8	31	448	0	0	174	661
08:00 AM	2	2	118	0	0	54	176
08:15 AM	2	4	99	0	1	41	147
08:30 AM	0	10	100	0	0	38	148
08:45 AM	0	7	103	0	0	38	148
Total	4	23	420	0	1	171	619
Grand Total	12	54	868	0	1	345	1280
Apprch %	18.2	81.8	100	0	0.3	99.7	
Total %	0.9	4.2	67.8	0	0.1	27	
Cars	11	54	849	0	1	329	1244
% Cars	91.7	100	97.8	0	100	95.4	97.2
Trucks	1	0	19	0	0	16	36
% Trucks	8.3	0	2.2	0	0	4.6	2.8

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**3**	**10**	**13**	**124**	0	**124**	0	46	46	**183**
07:15 AM	3	9	12	117	0	117	0	42	42	171
07:30 AM	1	8	9	102	0	102	0	37	37	148
07:45 AM	1	4	5	105	0	105	0	**49**	**49**	159
Total Volume	8	31	39	448	0	448	0	174	174	661
% App. Total	20.5	79.5		100	0		0	100		
PHF	.667	.775	.750	.903	.000	.903	.000	.888	.888	.903
Cars	7	31	38	440	0	440	0	170	170	648
% Cars	87.5	100	97.4	98.2	0	98.2	0	97.7	97.7	98.0
Trucks	1	0	1	8	0	8	0	4	4	13
% Trucks	12.5	0	2.6	1.8	0	1.8	0	2.3	2.3	2.0

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:45 AM		
+0 mins.	**3**	**10**	**13**	**124**	0	**124**	0	49	49
+15 mins.	3	9	12	117	0	117	0	**54**	**54**
+30 mins.	1	8	9	102	0	102	**1**	41	42
+45 mins.	1	4	5	105	0	105	0	38	38
Total Volume	8	31	39	448	0	448	1	182	183
% App. Total	20.5	79.5		100	0		0.5	99.5	
PHF	.667	.775	.750	.903	.000	.903	.250	.843	.847
Cars	7	31	38	440	0	440	1	171	172
% Cars	87.5	100	97.4	98.2	0	98.2	100	94	94
Trucks	1	0	1	8	0	8	0	11	11
% Trucks	12.5	0	2.6	1.8	0	1.8	0	6	6

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	2	10	123	0	0	45	180
07:15 AM	3	9	115	0	0	42	169
07:30 AM	1	8	100	0	0	37	146
07:45 AM	1	4	102	0	0	46	153
Total	7	31	440	0	0	170	648
08:00 AM	2	2	113	0	0	53	170
08:15 AM	2	4	98	0	1	36	141
08:30 AM	0	10	97	0	0	36	143
08:45 AM	0	7	101	0	0	34	142
Total	4	23	409	0	1	159	596
Grand Total	11	54	849	0	1	329	1244
Apprch %	16.9	83.1	100	0	0.3	99.7	
Total %	0.9	4.3	68.2	0	0.1	26.4	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	**10**	**12**	**123**	0	**123**	0	45	45	**180**
07:15 AM	**3**	9	12	115	0	115	0	42	42	169
07:30 AM	1	8	9	100	0	100	0	37	37	146
07:45 AM	1	4	5	102	0	102	0	**46**	**46**	153
Total Volume	7	31	38	440	0	440	0	170	170	648
% App. Total	18.4	81.6		100	0		0	100		
PHF	.583	.775	.792	.894	.000	.894	.000	.924	.924	.900

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Trucks

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	1	0	1	0	0	1	3
07:15 AM	0	0	2	0	0	0	2
07:30 AM	0	0	2	0	0	0	2
07:45 AM	0	0	3	0	0	3	6
Total	1	0	8	0	0	4	13
08:00 AM	0	0	5	0	0	1	6
08:15 AM	0	0	1	0	0	5	6
08:30 AM	0	0	3	0	0	2	5
08:45 AM	0	0	2	0	0	4	6
Total	0	0	11	0	0	12	23
Grand Total	1	0	19	0	0	16	36
Apprch %	100	0	100	0	0	100	
Total %	2.8	0	52.8	0	0	44.4	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	3	0	3	0	3	3	**6**
08:00 AM	0	0	0	**5**	0	**5**	0	1	1	6
08:15 AM	0	0	0	1	0	1	0	**5**	**5**	6
08:30 AM	0	0	0	3	0	3	0	2	2	5
Total Volume	0	0	0	12	0	12	0	11	11	23
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.600	.000	.600	.000	.550	.550	.958

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Bikes Peds

	Ashley St From North			Boardman St From East			Boardman St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	3	0	0	0	3	0	3
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:30 AM	0	0	0	1	0	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	4	0	0	0	4	1	5
08:00 AM	0	0	0	0	0	0	0	1	0	0	1	1
08:15 AM	0	0	2	0	0	0	0	0	0	2	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	2	0	0	1	0	1	0	3	1	4
Grand Total	0	0	2	1	0	5	0	1	0	7	2	9
Apprch %	0	0		100	0		0	100				
Total %	0	0		50	0		0	50		77.8	22.2	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	1	0	1	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	1	0	1	0	1	1	2
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.250	.000	.250	.000	.250	.250	.500

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars - Trucks

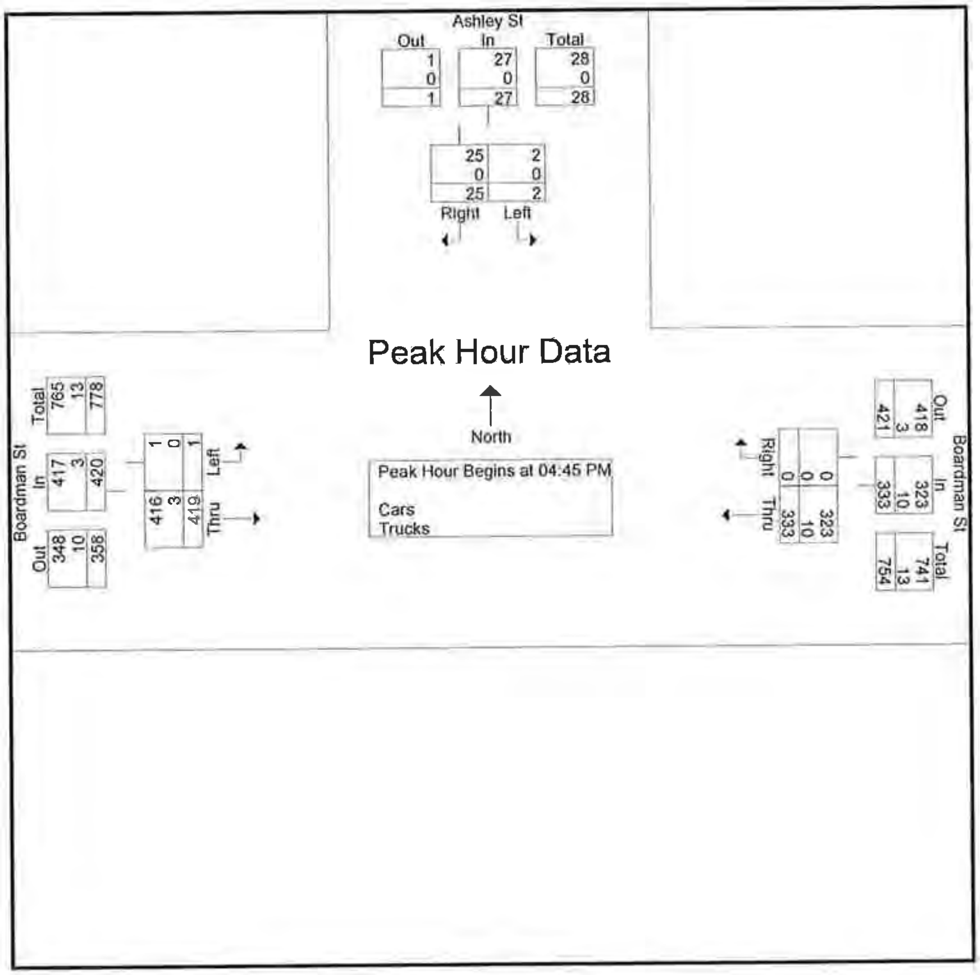
	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	0	11	81	0	1	111	204
04:15 PM	2	3	75	0	1	93	174
04:30 PM	1	7	84	0	0	87	179
04:45 PM	0	5	92	0	0	98	195
Total	3	26	332	0	2	389	752
05:00 PM	1	4	74	0	0	104	183
05:15 PM	0	6	86	0	1	97	190
05:30 PM	1	10	81	0	0	120	212
05:45 PM	3	4	65	0	0	91	163
Total	5	24	306	0	1	412	748
Grand Total	8	50	638	0	3	801	1500
Apprch %	13.8	86.2	100	0	0.4	99.6	
Total %	0.5	3.3	42.5	0	0.2	53.4	
Cars	8	49	616	0	3	795	1471
% Cars	100	98	96.6	0	100	99.3	98.1
Trucks	0	1	22	0	0	6	29
% Trucks	0	2	3.4	0	0	0.7	1.9

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	5	5	**92**	0	**92**	0	98	98	195
05:00 PM	**1**	4	5	74	0	74	0	104	104	183
05:15 PM	0	6	6	86	0	86	**1**	97	98	190
05:30 PM	1	**10**	**11**	81	0	81	0	**120**	**120**	**212**
Total Volume	2	25	27	333	0	333	1	419	420	780
% App. Total	7.4	92.6		100	0		0.2	99.8		
PHF	.500	.625	.614	.905	.000	.905	.250	.873	.875	.920
Cars	2	25	27	323	0	323	1	416	417	767
% Cars	100	100	100	97.0	0	97.0	100	99.3	99.3	98.3
Trucks	0	0	0	10	0	10	0	3	3	13
% Trucks	0	0	0	3.0	0	3.0	0	0.7	0.7	1.7

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:45 PM		
+0 mins.	0	**11**	**11**	84	0	84	0	98	98
+15 mins.	**2**	3	5	**92**	0	**92**	0	104	104
+30 mins.	1	7	8	74	0	74	**1**	97	98
+45 mins.	0	5	5	86	0	86	0	**120**	**120**
Total Volume	3	26	29	336	0	336	1	419	420
% App. Total	10.3	89.7		100	0		0.2	99.8	
PHF	.375	.591	.659	.913	.000	.913	.250	.873	.875
Cars	3	25	28	327	0	327	1	416	417
% Cars	100	96.2	96.6	97.3	0	97.3	100	99.3	99.3
Trucks	0	1	1	9	0	9	0	3	3
% Trucks	0	3.8	3.4	2.7	0	2.7	0	0.7	0.7

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Cars

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	0	10	76	0	1	110	197
04:15 PM	2	3	73	0	1	91	170
04:30 PM	1	7	83	0	0	87	178
04:45 PM	0	5	89	0	0	98	192
Total	3	25	321	0	2	386	737
05:00 PM	1	4	70	0	0	103	178
05:15 PM	0	6	85	0	1	95	187
05:30 PM	1	10	79	0	0	120	210
05:45 PM	3	4	61	0	0	91	159
Total	5	24	295	0	1	409	734
Grand Total	8	49	616	0	3	795	1471
Apprch %	14	86	100	0	0.4	99.6	
Total %	0.5	3.3	41.9	0	0.2	54	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	5	5	**89**	0	**89**	0	98	98	192
05:00 PM	**1**	4	5	70	0	70	0	103	103	178
05:15 PM	0	6	6	85	0	85	**1**	95	96	187
05:30 PM	1	**10**	**11**	79	0	79	0	**120**	**120**	**210**
Total Volume	2	25	27	323	0	323	1	416	417	767
% App. Total	7.4	92.6		100	0		0.2	99.8		
PHF	.500	.625	.614	.907	.000	.907	.250	.867	.869	.913

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Trucks

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	0	1	5	0	0	1	7
04:15 PM	0	0	2	0	0	2	4
04:30 PM	0	0	1	0	0	0	1
04:45 PM	0	0	3	0	0	0	3
Total	0	1	11	0	0	3	15
05:00 PM	0	0	4	0	0	1	5
05:15 PM	0	0	1	0	0	2	3
05:30 PM	0	0	2	0	0	0	2
05:45 PM	0	0	4	0	0	0	4
Total	0	0	11	0	0	3	14
Grand Total	0	1	22	0	0	6	29
Apprch %	0	100	100	0	0	100	
Total %	0	3.4	75.9	0	0	20.7	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**1**	**1**	**5**	0	**5**	0	1	1	**7**
04:15 PM	0	0	0	2	0	2	0	**2**	**2**	4
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	3	0	3	0	0	0	3
Total Volume	0	1	1	11	0	11	0	3	3	15
% App. Total	0	100		100	0		0	100		
PHF	.000	.250	.250	.550	.000	.550	.000	.375	.375	.536

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 61720002
Site Code : 61720002
Start Date : 2/9/2012
Page No : 1

Groups Printed- Bikes Peds

	Ashley St From North			Boardman St From East			Boardman St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	0	0	1	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	2	0	0	1	0	0	0	3	0	3
04:45 PM	0	0	1	0	0	3	0	0	0	4	0	4
Total	0	0	3	0	0	5	0	0	0	8	0	8
05:00 PM	0	0	0	0	0	3	0	0	0	3	0	3
05:15 PM	0	0	2	0	0	3	0	0	0	5	0	5
05:30 PM	0	0	1	0	0	2	0	0	1	4	0	4
05:45 PM	0	0	0	0	0	1	0	0	2	3	0	3
Total	0	0	3	0	0	9	0	0	3	15	0	15
Grand Total	0	0	6	0	0	14	0	0	3	23	0	23
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S2
Site Code : 61720002
Start Date : 2/18/2012
Page No : 1

Groups Printed- Cars - Trucks

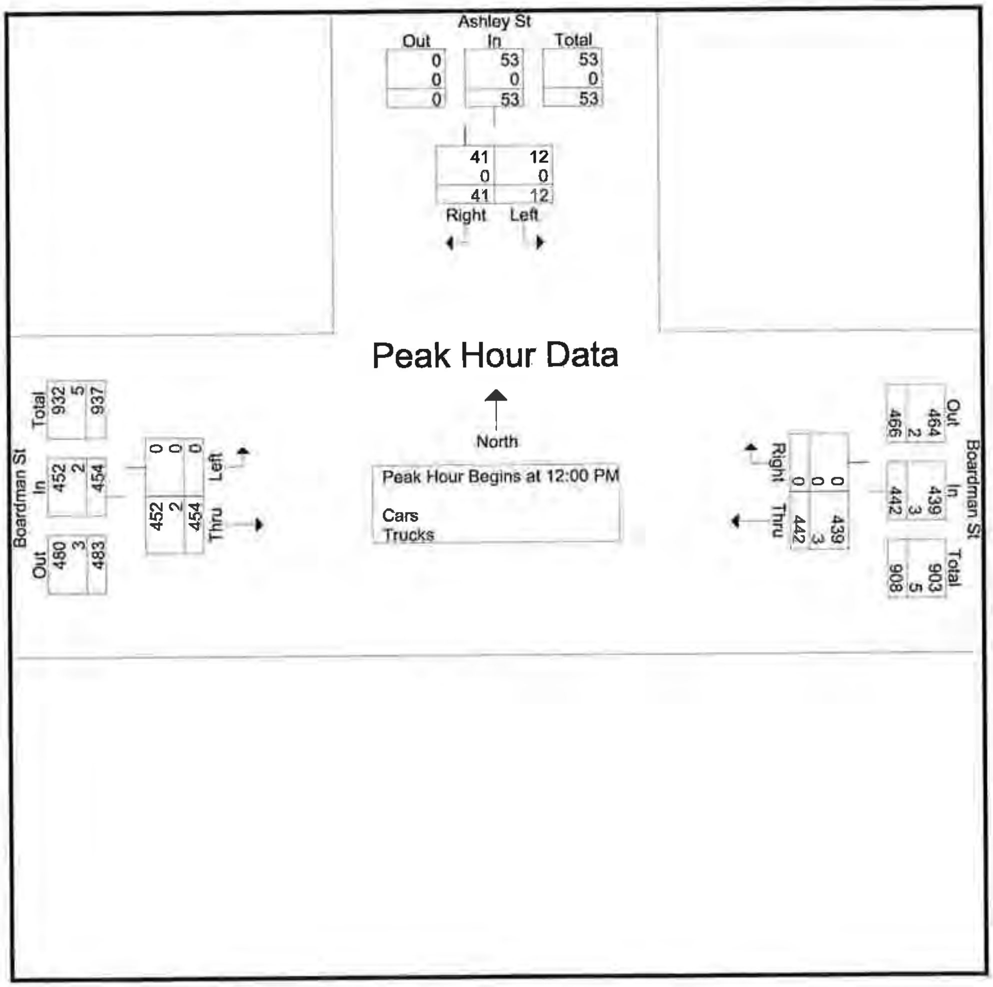
	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	0	7	114	0	0	98	219
11:15 AM	1	1	103	0	0	95	200
11:30 AM	2	9	107	0	0	110	228
11:45 AM	2	6	121	0	0	98	227
Total	5	23	445	0	0	401	874
12:00 PM	3	12	112	0	0	101	228
12:15 PM	3	9	113	0	0	112	237
12:30 PM	2	7	105	0	0	99	213
12:45 PM	4	13	112	0	0	142	271
Total	12	41	442	0	0	454	949
01:00 PM	2	10	104	0	0	99	215
01:15 PM	2	5	111	0	0	101	219
01:30 PM	0	0	108	0	0	98	206
01:45 PM	1	6	97	0	0	78	182
Total	5	21	420	0	0	376	822
Grand Total	22	85	1307	0	0	1231	2645
Apprch %	20.6	79.4	100	0	0	100	
Total %	0.8	3.2	49.4	0	0	46.5	
Cars	22	85	1298	0	0	1224	2629
% Cars	100	100	99.3	0	0	99.4	99.4
Trucks	0	0	9	0	0	7	16
% Trucks	0	0	0.7	0	0	0.6	0.6

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	3	12	15	112	0	112	0	101	101	228
12:15 PM	3	9	12	**113**	0	**113**	0	112	112	237
12:30 PM	2	7	9	105	0	105	0	99	99	213
12:45 PM	**4**	**13**	**17**	112	0	112	0	**142**	**142**	**271**
Total Volume	12	41	53	442	0	442	0	454	454	949
% App. Total	22.6	77.4		100	0		0	100		
PHF	.750	.788	.779	.978	.000	.978	.000	.799	.799	.875
Cars	12	41	53	439	0	439	0	452	452	944
% Cars	100	100	100	99.3	0	99.3	0	99.6	99.6	99.5
Trucks	0	0	0	3	0	3	0	2	2	5
% Trucks	0	0	0	0.7	0	0.7	0	0.4	0.4	0.5

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S2
Site Code : 61720002
Start Date : 2/18/2012



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:	12:00 PM			11:30 AM			12:00 PM		
+0 mins.	3	12	15	107	0	107	0	101	101
+15 mins.	3	9	12	**121**	0	**121**	0	112	112
+30 mins.	2	7	9	112	0	112	0	99	99
+45 mins.	**4**	**13**	**17**	113	0	113	0	**142**	**142**
Total Volume	12	41	53	453	0	453	0	454	454
% App. Total	22.6	77.4		100	0		0	100	
PHF	.750	.788	.779	.936	.000	.936	.000	.799	.799
Cars	12	41	53	450	0	450	0	452	452
% Cars	100	100	100	99.3	0	99.3	0	99.6	99.6
Trucks	0	0	0	3	0	3	0	2	2
% Trucks	0	0	0	0.7	0	0.7	0	0.4	0.4

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S2
Site Code : 61720002
Start Date : 2/18/2012
Page No : 1

Groups Printed- Cars

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	0	7	114	0	0	95	216
11:15 AM	1	1	101	0	0	94	197
11:30 AM	2	9	106	0	0	110	227
11:45 AM	2	6	120	0	0	97	225
Total	5	23	441	0	0	396	865
12:00 PM	3	12	112	0	0	101	228
12:15 PM	3	9	112	0	0	110	234
12:30 PM	2	7	105	0	0	99	213
12:45 PM	4	13	110	0	0	142	269
Total	12	41	439	0	0	452	944
01:00 PM	2	10	104	0	0	99	215
01:15 PM	2	5	109	0	0	101	217
01:30 PM	0	0	108	0	0	98	206
01:45 PM	1	6	97	0	0	78	182
Total	5	21	418	0	0	376	820
Grand Total	22	85	1298	0	0	1224	2629
Apprch %	20.6	79.4	100	0	0	100	
Total %	0.8	3.2	49.4	0	0	46.6	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	3	12	15	**112**	0	**112**	0	101	101	228
12:15 PM	3	9	12	112	0	112	0	110	110	234
12:30 PM	2	7	9	105	0	105	0	99	99	213
12:45 PM	**4**	**13**	**17**	110	0	110	0	**142**	**142**	**269**
Total Volume	12	41	53	439	0	439	0	452	452	944
% App. Total	22.6	77.4		100	0		0	100		
PHF	.750	.788	.779	.980	.000	.980	.000	.796	.796	.877

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S2
Site Code : 61720002
Start Date : 2/18/2012
Page No : 1

Groups Printed- Trucks

	Ashley St From North		Boardman St From East		Boardman St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	0	0	0	0	0	3	3
11:15 AM	0	0	2	0	0	1	3
11:30 AM	0	0	1	0	0	0	1
11:45 AM	0	0	1	0	0	1	2
Total	0	0	4	0	0	5	9
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	1	0	0	2	3
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	2	0	0	0	2
Total	0	0	3	0	0	2	5
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	2	0	0	0	2
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	2
Grand Total	0	0	9	0	0	7	16
Apprch %	0	0	100	0	0	100	
Total %	0	0	56.2	0	0	43.8	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	**3**	**3**	**3**
11:15 AM	0	0	0	**2**	0	**2**	0	1	1	3
11:30 AM	0	0	0	1	0	1	0	0	0	1
11:45 AM	0	0	0	1	0	1	0	1	1	2
Total Volume	0	0	0	4	0	4	0	5	5	9
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.500	.000	.500	.000	.417	.417	.750

Accurate Counts
978-664-2565

N/S Street : Ashley Street
E/W Street : Boardman Street
City/State : East Boston, MA
Weather : Clear

File Name : 617200S2
Site Code : 61720002
Start Date : 2/18/2012
Page No : 1

Groups Printed- Bikes Peds

	Ashley St From North			Boardman St From East			Boardman St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	3	0	0	0	3	0	3
11:30 AM	0	0	0	0	0	2	0	0	0	2	0	2
11:45 AM	0	0	0	0	0	3	0	0	0	3	0	3
Total	0	0	0	0	0	8	0	0	0	8	0	8
12:00 PM	0	0	4	0	0	2	0	0	0	6	0	6
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	2	0	0	0	2	0	2
12:45 PM	0	0	0	0	0	1	0	0	1	2	0	2
Total	0	0	4	0	0	5	0	0	1	10	0	10
01:00 PM	0	0	0	0	0	3	0	0	2	5	0	5
01:15 PM	0	0	1	0	0	4	0	0	0	5	0	5
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	1	1	0	1	0	0	0	2	1	3
Total	0	0	2	1	0	8	0	0	2	12	1	13
Grand Total	0	0	6	1	0	21	0	0	3	30	1	31
Apprch %	0	0		100	0		0	0				
Total %	0	0		100	0		0	0		96.8	3.2	

	Ashley St From North			Boardman St From East			Boardman St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 01:00 PM										
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	1	0	1	0	0	0	1
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars - Trucks

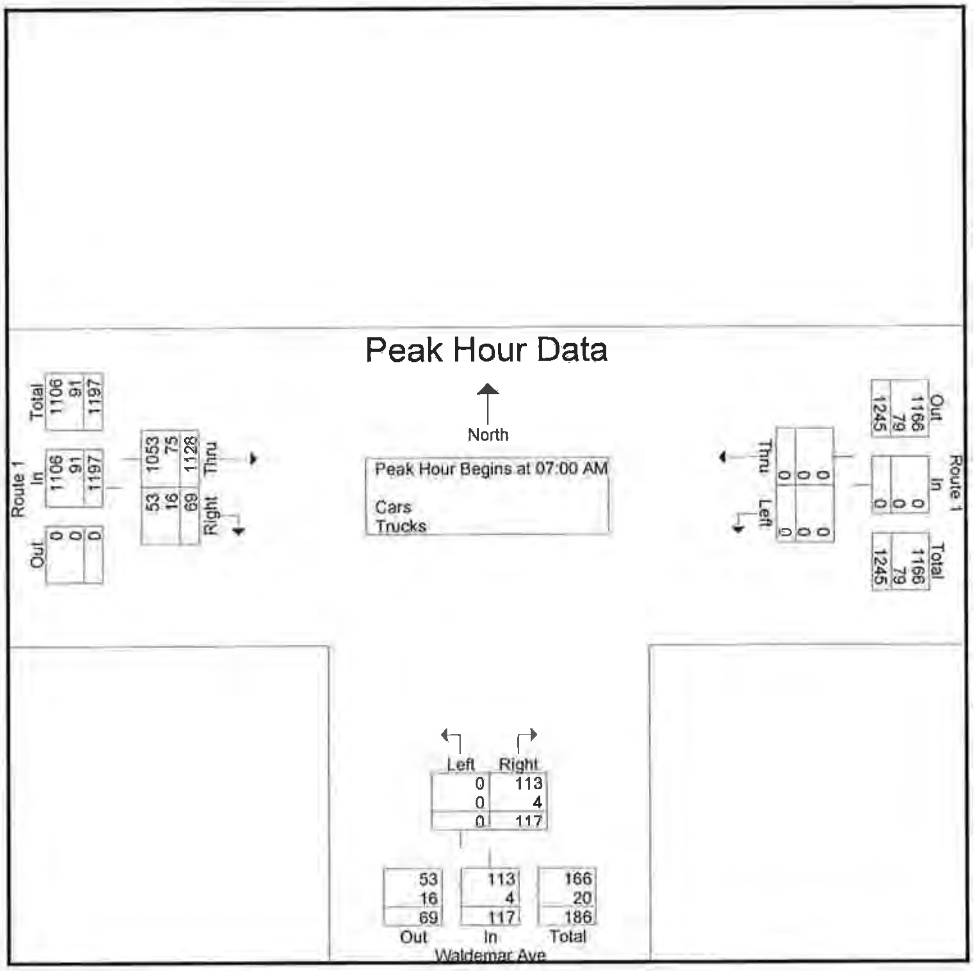
	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	32	296	8	336
07:15 AM	0	0	0	31	286	21	338
07:30 AM	0	0	0	24	286	22	332
07:45 AM	0	0	0	30	260	18	308
Total	0	0	0	117	1128	69	1314
08:00 AM	0	0	0	38	263	19	320
08:15 AM	0	0	0	28	256	31	315
08:30 AM	0	0	0	28	252	18	298
08:45 AM	0	0	0	14	232	20	266
Total	0	0	0	108	1003	88	1199
Grand Total	0	0	0	225	2131	157	2513
Apprch %	0	0	0	100	93.1	6.9	
Total %	0	0	0	9	84.8	6.2	
Cars	0	0	0	221	1988	126	2335
% Cars	0	0	0	98.2	93.3	80.3	92.9
Trucks	0	0	0	4	143	31	178
% Trucks	0	0	0	1.8	6.7	19.7	7.1

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	**32**	**32**	**296**	8	304	336
07:15 AM	0	0	0	0	31	31	286	21	307	**338**
07:30 AM	0	0	0	0	24	24	286	**22**	**308**	332
07:45 AM	0	0	0	0	30	30	260	18	278	308
Total Volume	0	0	0	0	117	117	1128	69	1197	1314
% App. Total	0	0		0	100		94.2	5.8		
PHF	.000	.000	.000	.000	.914	.914	.953	.784	.972	.972
Cars	0	0	0	0	113	113	1053	53	1106	1219
% Cars	0	0	0	0	96.6	96.6	93.4	76.8	92.4	92.8
Trucks	0	0	0	0	4	4	75	16	91	95
% Trucks	0	0	0	0	3.4	3.4	6.6	23.2	7.6	7.2

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			07:00 AM		
+0 mins.	0	0	0	0	30	30	**296**	8	304
+15 mins.	0	0	0	0	**38**	**38**	286	21	307
+30 mins.	0	0	0	0	28	28	286	**22**	**308**
+45 mins.	0	0	0	0	28	28	260	18	278
Total Volume	0	0	0	0	124	124	1128	69	1197
% App. Total	0	0		0	100		94.2	5.8	
PHF	.000	.000	.000	.000	.816	.816	.953	.784	.972
Cars	0	0	0	0	121	121	1053	53	1106
% Cars	0	0	0	0	97.6	97.6	93.4	76.8	92.4
Trucks	0	0	0	0	3	3	75	16	91
% Trucks	0	0	0	0	2.4	2.4	6.6	23.2	7.6

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars

	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	32	274	7	313
07:15 AM	0	0	0	31	266	18	315
07:30 AM	0	0	0	23	264	15	302
07:45 AM	0	0	0	27	249	13	289
Total	0	0	0	113	1053	53	1219
08:00 AM	0	0	0	38	245	16	299
08:15 AM	0	0	0	28	241	26	295
08:30 AM	0	0	0	28	233	15	276
08:45 AM	0	0	0	14	216	16	246
Total	0	0	0	108	935	73	1116
Grand Total	0	0	0	221	1988	126	2335
Apprch %	0	0	0	100	94	6	
Total %	0	0	0	9.5	85.1	5.4	

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	**32**	**32**	**274**	7	281	313
07:15 AM	0	0	0	0	31	31	266	**18**	**284**	**315**
07:30 AM	0	0	0	0	23	23	264	15	279	302
07:45 AM	0	0	0	0	27	27	249	13	262	289
Total Volume	0	0	0	0	113	113	1053	53	1106	1219
% App. Total	0	0		0	100		95.2	4.8		
PHF	.000	.000	.000	.000	.883	.883	.961	.736	.974	.967

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Trucks

	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	0	22	1	23
07:15 AM	0	0	0	0	20	3	23
07:30 AM	0	0	0	1	22	7	30
07:45 AM	0	0	0	3	11	5	19
Total	0	0	0	4	75	16	95
08:00 AM	0	0	0	0	18	3	21
08:15 AM	0	0	0	0	15	5	20
08:30 AM	0	0	0	0	19	3	22
08:45 AM	0	0	0	0	16	4	20
Total	0	0	0	0	68	15	83
Grand Total	0	0	0	4	143	31	178
Apprch %	0	0	0	100	82.2	17.8	
Total %	0	0	0	2.2	80.3	17.4	

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	**22**	1	23	23
07:15 AM	0	0	0	0	0	0	20	3	23	23
07:30 AM	0	0	0	0	1	1	22	**7**	**29**	**30**
07:45 AM	0	0	0	0	**3**	**3**	11	5	16	19
Total Volume	0	0	0	0	4	4	75	16	91	95
% App. Total	0	0		0	100		82.4	17.6		
PHF	.000	.000	.000	.000	.333	.333	.852	.571	.784	.792

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1 From East			Waldemar Ave From South			Route 1 From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	0	0	0	0	0	1	1
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		0	100	

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	1	1	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars - Trucks

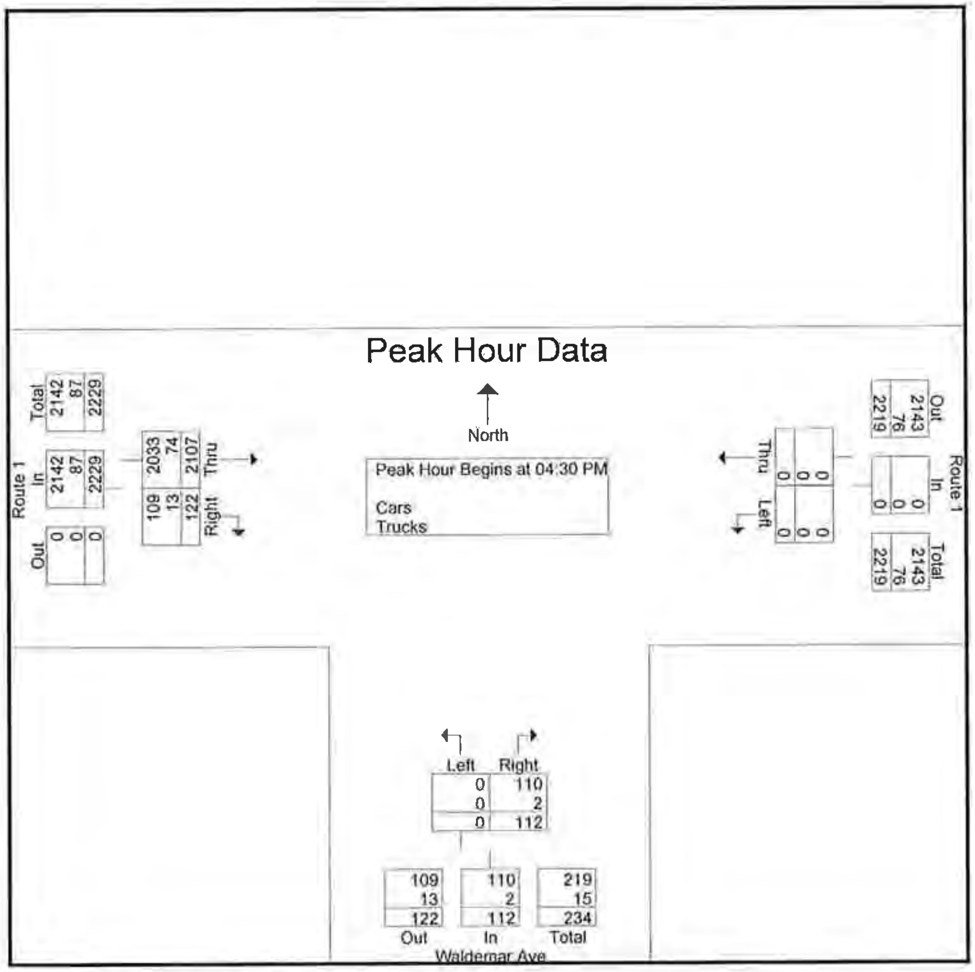
	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	34	507	27	568
04:15 PM	0	0	0	37	499	20	556
04:30 PM	0	0	0	30	535	33	598
04:45 PM	0	0	0	27	550	31	608
Total	0	0	0	128	2091	111	2330
05:00 PM	0	0	0	29	504	31	564
05:15 PM	0	0	0	26	518	27	571
05:30 PM	0	0	0	37	529	28	594
05:45 PM	0	0	0	25	546	20	591
Total	0	0	0	117	2097	106	2320
Grand Total	0	0	0	245	4188	217	4650
Apprch %	0	0	0	100	95.1	4.9	
Total %	0	0	0	5.3	90.1	4.7	
Cars	0	0	0	242	4035	195	4472
% Cars	0	0	0	98.8	96.3	89.9	96.2
Trucks	0	0	0	3	153	22	178
% Trucks	0	0	0	1.2	3.7	10.1	3.8

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	**30**	**30**	535	**33**	568	598
04:45 PM	0	0	0	0	27	27	**550**	31	**581**	**608**
05:00 PM	0	0	0	0	29	29	504	31	535	564
05:15 PM	0	0	0	0	26	26	518	27	545	571
Total Volume	0	0	0	0	112	112	2107	122	2229	2341
% App. Total	0	0		0	100		94.5	5.5		
PHF	.000	.000	.000	.000	.933	.933	.958	.924	.959	.963
Cars	0	0	0	0	110	110	2033	109	2142	2252
% Cars	0	0	0	0	98.2	98.2	96.5	89.3	96.1	96.2
Trucks	0	0	0	0	2	2	74	13	87	89
% Trucks	0	0	0	0	1.8	1.8	3.5	10.7	3.9	3.8

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:30 PM		
+0 mins.	0	0	0	0	34	34	535	33	568
+15 mins.	0	0	0	0	37	37	550	31	581
+30 mins.	0	0	0	0	30	30	504	31	535
+45 mins.	0	0	0	0	27	27	518	27	545
Total Volume	0	0	0	0	128	128	2107	122	2229
% App. Total	0	0		0	100		94.5	5.5	
PHF	.000	.000	.000	.000	.865	.865	.958	.924	.959
Cars	0	0	0	0	127	127	2033	109	2142
% Cars	0	0	0	0	99.2	99.2	96.5	89.3	96.1
Trucks	0	0	0	0	1	1	74	13	87
% Trucks	0	0	0	0	0.8	0.8	3.5	10.7	3.9

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars

	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	34	492	23	549
04:15 PM	0	0	0	36	479	17	532
04:30 PM	0	0	0	30	507	29	566
04:45 PM	0	0	0	27	533	29	589
Total	0	0	0	127	2011	98	2236
05:00 PM	0	0	0	29	488	27	544
05:15 PM	0	0	0	24	505	24	553
05:30 PM	0	0	0	37	508	27	572
05:45 PM	0	0	0	25	523	19	567
Total	0	0	0	115	2024	97	2236
Grand Total	0	0	0	242	4035	195	4472
Apprch %	0	0	0	100	95.4	4.6	
Total %	0	0	0	5.4	90.2	4.4	

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	27	27	**533**	**29**	**562**	**589**
05:00 PM	0	0	0	0	29	29	488	27	515	544
05:15 PM	0	0	0	0	24	24	505	24	529	553
05:30 PM	0	0	0	0	**37**	**37**	508	27	535	572
Total Volume	0	0	0	0	117	117	2034	107	2141	2258
% App. Total	0	0		0	100		95	5		
PHF	.000	.000	.000	.000	.791	.791	.954	.922	.952	.958

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720003
Site Code : 61720003
Start Date : 4/12/2012
Page No : 1

Groups Printed- Trucks

	Route 1 From East		Waldemar Ave From South		Route 1 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	0	15	4	19
04:15 PM	0	0	0	1	20	3	24
04:30 PM	0	0	0	0	28	4	32
04:45 PM	0	0	0	0	17	2	19
Total	0	0	0	1	80	13	94
05:00 PM	0	0	0	0	16	4	20
05:15 PM	0	0	0	2	13	3	18
05:30 PM	0	0	0	0	21	1	22
05:45 PM	0	0	0	0	23	1	24
Total	0	0	0	2	73	9	84
Grand Total	0	0	0	3	153	22	178
Apprch %	0	0	0	100	87.4	12.6	
Total %	0	0	0	1.7	86	12.4	

	Route 1 From East			Waldemar Ave From South			Route 1 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	**1**	**1**	20	3	23	24
04:30 PM	0	0	0	0	0	0	**28**	**4**	**32**	**32**
04:45 PM	0	0	0	0	0	0	17	2	19	19
05:00 PM	0	0	0	0	0	0	16	4	20	20
Total Volume	0	0	0	0	1	1	81	13	94	95
% App. Total	0	0		0	100		86.2	13.8		
PHF	.000	.000	.000	.000	.250	.250	.723	.813	.734	.742

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200A3
Site Code : 61720003
Start Date : 4/14/2012
Page No : 1

Groups Printed- Cars - Trucks

	Route 1A From East		Waldemar Ave From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	25	389	30	444
11:15 AM	0	0	0	31	403	19	453
11:30 AM	0	0	0	35	424	15	474
11:45 AM	0	0	0	32	404	29	465
Total	0	0	0	123	1620	93	1836
12:00 PM	0	0	0	36	425	22	483
12:15 PM	0	0	0	38	459	10	507
12:30 PM	0	0	0	27	437	31	495
12:45 PM	0	0	0	36	481	33	550
Total	0	0	0	137	1802	96	2035
01:00 PM	0	0	0	35	465	29	529
01:15 PM	0	0	0	39	457	36	532
01:30 PM	0	0	0	37	445	32	514
01:45 PM	0	0	0	34	417	35	486
Total	0	0	0	145	1784	132	2061
Grand Total	0	0	0	405	5206	321	5932
Apprch %	0	0	0	100	94.2	5.8	
Total %	0	0	0	6.8	87.8	5.4	
Cars	0	0	0	404	5082	314	5800
% Cars	0	0	0	99.8	97.6	97.8	97.8
Trucks	0	0	0	1	124	7	132
% Trucks	0	0	0	0.2	2.4	2.2	2.2

	Route 1A From East			Waldemar Ave From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	0	0	0	0	36	36	**481**	33	**514**	**550**
01:00 PM	0	0	0	0	35	35	465	29	494	529
01:15 PM	0	0	0	0	**39**	**39**	457	**36**	493	532
01:30 PM	0	0	0	0	37	37	445	32	477	514
Total Volume	0	0	0	0	147	147	1848	130	1978	2125
% App. Total	0	0		0	100		93.4	6.6		
PHF	.000	.000	.000	.000	.942	.942	.960	.903	.962	.966
Cars	0	0	0	0	147	147	1812	128	1940	2087
% Cars	0	0	0	0	100	100	98.1	98.5	98.1	98.2
Trucks	0	0	0	0	0	0	36	2	38	38
% Trucks	0	0	0	0	0	0	1.9	1.5	1.9	1.8

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200A3
Site Code : 61720003
Start Date : 4/14/2012
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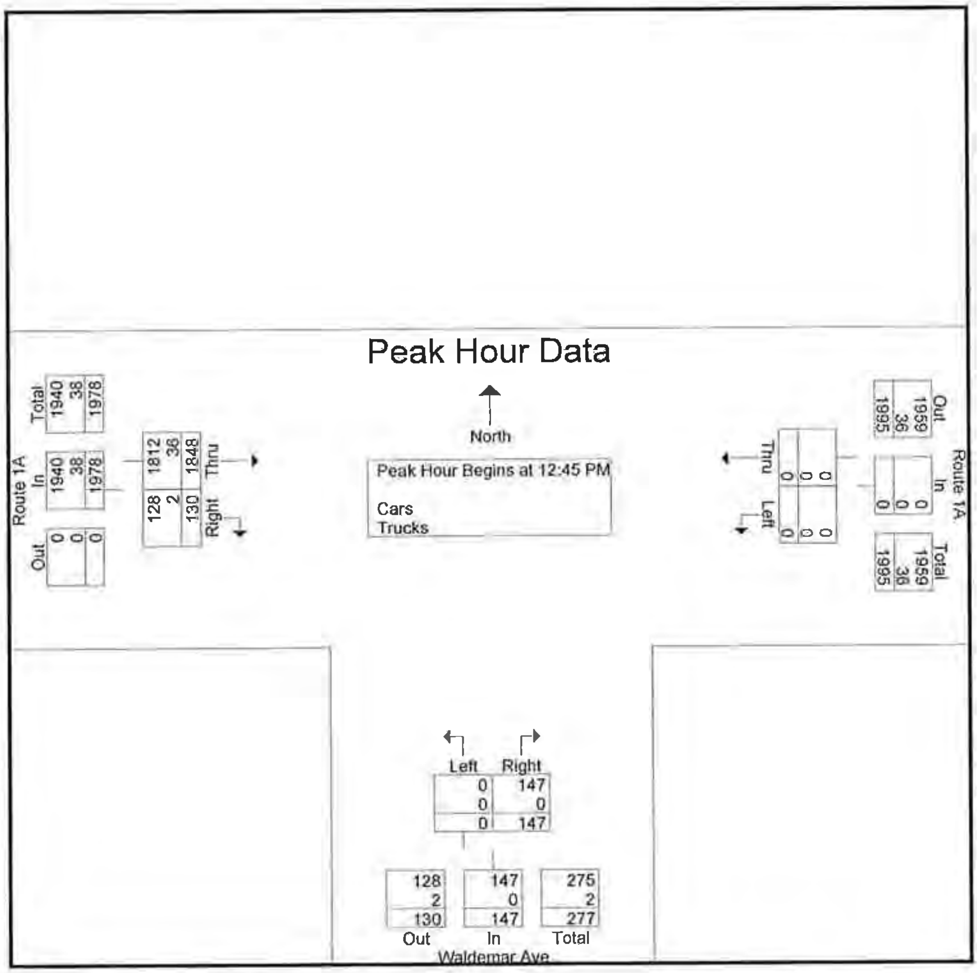


Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			12:45 PM			12:45 PM		
+0 mins.	0	0	0	0	36	36	**481**	33	**514**
+15 mins.	0	0	0	0	35	35	465	29	494
+30 mins.	0	0	0	0	**39**	**39**	457	**36**	493
+45 mins.	0	0	0	0	37	37	445	32	477
Total Volume	0	0	0	0	147	147	1848	130	1978
% App. Total	0	0		0	100		93.4	6.6	
PHF	.000	.000	.000	.000	.942	.942	.960	.903	.962
Cars	0	0	0	0	147	147	1812	128	1940
% Cars	0	0	0	0	100	100	98.1	98.5	98.1
Trucks	0	0	0	0	0	0	36	2	38
% Trucks	0	0	0	0	0	0	1.9	1.5	1.9

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200A3
Site Code : 61720003
Start Date : 4/14/2012
Page No : 1

Groups Printed- Cars

	Route 1A From East		Waldemar Ave From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	24	376	30	430
11:15 AM	0	0	0	31	389	18	438
11:30 AM	0	0	0	35	413	15	463
11:45 AM	0	0	0	32	394	27	453
Total	0	0	0	122	1572	90	1784
12:00 PM	0	0	0	36	414	22	472
12:15 PM	0	0	0	38	452	10	500
12:30 PM	0	0	0	27	421	30	478
12:45 PM	0	0	0	36	475	32	543
Total	0	0	0	137	1762	94	1993
01:00 PM	0	0	0	35	456	29	520
01:15 PM	0	0	0	39	448	35	522
01:30 PM	0	0	0	37	433	32	502
01:45 PM	0	0	0	34	411	34	479
Total	0	0	0	145	1748	130	2023
Grand Total	0	0	0	404	5082	314	5800
Apprch %	0	0	0	100	94.2	5.8	
Total %	0	0	0	7	87.6	5.4	

	Route 1A From East			Waldemar Ave From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	0	0	0	0	36	36	**475**	32	**507**	**543**
01:00 PM	0	0	0	0	35	35	456	29	485	520
01:15 PM	0	0	0	0	**39**	**39**	448	**35**	483	522
01:30 PM	0	0	0	0	37	37	433	32	465	502
Total Volume	0	0	0	0	147	147	1812	128	1940	2087
% App. Total	0	0		0	100		93.4	6.6		
PHF	.000	.000	.000	.000	.942	.942	.954	.914	.957	.961

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200A3
Site Code : 61720003
Start Date : 4/14/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From East		Waldemar Ave From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	1	13	0	14
11:15 AM	0	0	0	0	14	1	15
11:30 AM	0	0	0	0	11	0	11
11:45 AM	0	0	0	0	10	2	12
Total	0	0	0	1	48	3	52
12:00 PM	0	0	0	0	11	0	11
12:15 PM	0	0	0	0	7	0	7
12:30 PM	0	0	0	0	16	1	17
12:45 PM	0	0	0	0	6	1	7
Total	0	0	0	0	40	2	42
01:00 PM	0	0	0	0	9	0	9
01:15 PM	0	0	0	0	9	1	10
01:30 PM	0	0	0	0	12	0	12
01:45 PM	0	0	0	0	6	1	7
Total	0	0	0	0	36	2	38
Grand Total	0	0	0	1	124	7	132
Apprch %	0	0	0	100	94.7	5.3	
Total %	0	0	0	0.8	93.9	5.3	

	Route 1A From East			Waldemar Ave From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	**1**	**1**	13	0	13	14
11:15 AM	0	0	0	0	0	0	**14**	1	**15**	**15**
11:30 AM	0	0	0	0	0	0	11	0	11	11
11:45 AM	0	0	0	0	0	0	10	**2**	12	12
Total Volume	0	0	0	0	1	1	48	3	51	52
% App. Total	0	0		0	100		94.1	5.9		
PHF	.000	.000	.000	.000	.250	.250	.857	.375	.850	.867

Accurate Counts
978-664-2565

N/S Street : Waldemar Avenue
E/W Street : Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200A3
Site Code : 61720003
Start Date : 4/14/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From East			Waldemar Ave From South			Route 1A From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	1	0	0	0	1	0	1
11:15 AM	0	0	0	0	0	2	0	0	0	2	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	0	0	0	3	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	4	0	0	0	4	4
Total	0	0	0	0	0	0	4	0	0	0	4	4
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	1	1	0	0	1	1	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	0	0	1	1	2
Grand Total	0	0	0	0	0	4	5	0	0	4	5	9
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		44.4	55.6	

	Route 1A From East			Waldemar Ave From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	0	0	0	0	0	0	4	0	4	4
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	5	0	5	5
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.313	.000	.313	.313

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars - Trucks

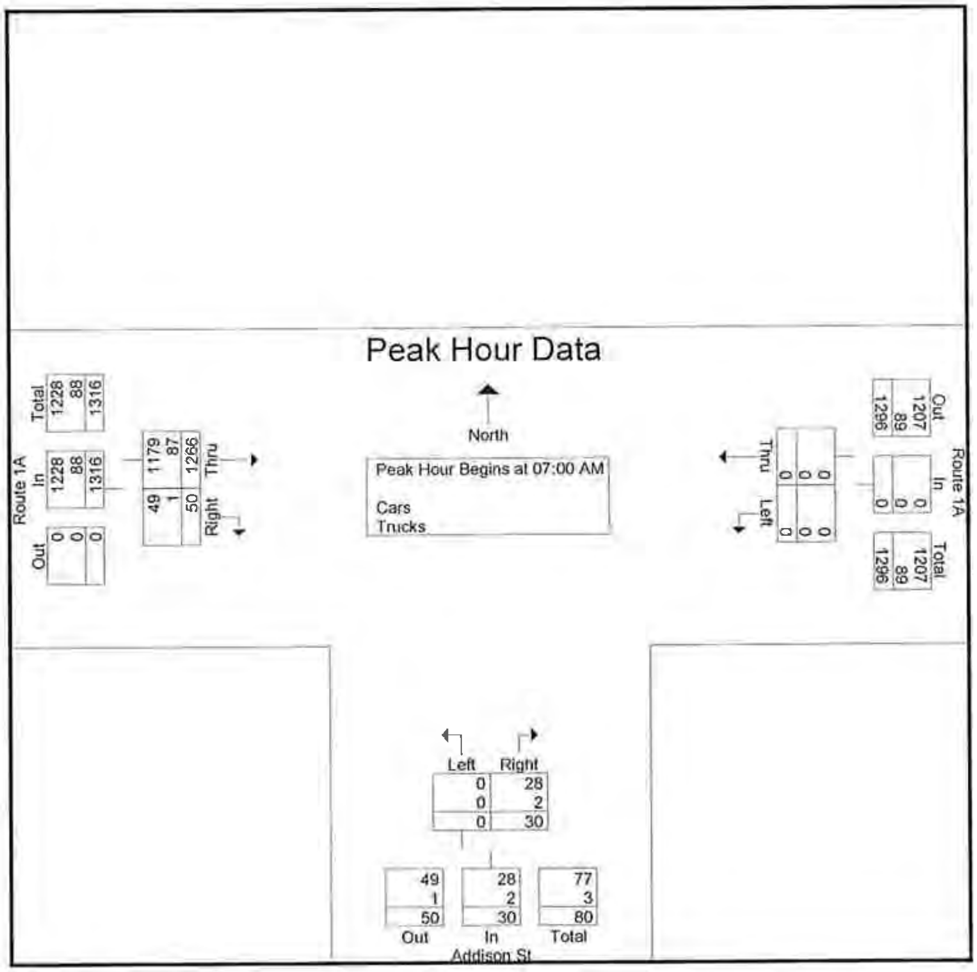
	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	8	335	14	357
07:15 AM	0	0	0	13	310	12	335
07:30 AM	0	0	0	5	341	16	362
07:45 AM	0	0	0	4	280	8	292
Total	0	0	0	30	1266	50	1346
08:00 AM	0	0	0	6	295	5	306
08:15 AM	0	0	0	4	279	16	299
08:30 AM	0	0	0	5	248	10	263
08:45 AM	0	0	0	6	251	17	274
Total	0	0	0	21	1073	48	1142
Grand Total	0	0	0	51	2339	98	2488
Apprch %	0	0	0	100	96	4	
Total %	0	0	0	2	94	3.9	
Cars	0	0	0	49	2177	97	2323
% Cars	0	0	0	96.1	93.1	99	93.4
Trucks	0	0	0	2	162	1	165
% Trucks	0	0	0	3.9	6.9	1	6.6

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	8	8	335	14	349	357
07:15 AM	0	0	0	0	**13**	**13**	310	12	322	335
07:30 AM	0	0	0	0	5	5	**341**	**16**	**357**	**362**
07:45 AM	0	0	0	0	4	4	280	8	288	292
Total Volume	0	0	0	0	30	30	1266	50	1316	1346
% App. Total	0	0		0	100		96.2	3.8		
PHF	.000	.000	.000	.000	.577	.577	.928	.781	.922	.930
Cars	0	0	0	0	28	28	1179	49	1228	1256
% Cars	0	0	0	0	93.3	93.3	93.1	98.0	93.3	93.3
Trucks	0	0	0	0	2	2	87	1	88	90
% Trucks	0	0	0	0	6.7	6.7	6.9	2.0	6.7	6.7

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	8	8	335	14	349
+15 mins.	0	0	0	0	**13**	**13**	310	12	322
+30 mins.	0	0	0	0	5	5	**341**	**16**	**357**
+45 mins.	0	0	0	0	4	4	280	8	288
Total Volume	0	0	0	0	30	30	1266	50	1316
% App. Total	0	0		0	100		96.2	3.8	
PHF	.000	.000	.000	.000	.577	.577	.928	.781	.922
Cars	0	0	0	0	28	28	1179	49	1228
% Cars	0	0	0	0	93.3	93.3	93.1	98	93.3
Trucks	0	0	0	0	2	2	87	1	88
% Trucks	0	0	0	0	6.7	6.7	6.9	2	6.7

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	8	311	13	332
07:15 AM	0	0	0	11	292	12	315
07:30 AM	0	0	0	5	309	16	330
07:45 AM	0	0	0	4	267	8	279
Total	0	0	0	28	1179	49	1256
08:00 AM	0	0	0	6	277	5	288
08:15 AM	0	0	0	4	259	16	279
08:30 AM	0	0	0	5	226	10	241
08:45 AM	0	0	0	6	236	17	259
Total	0	0	0	21	998	48	1067
Grand Total	0	0	0	49	2177	97	2323
Apprch %	0	0	0	100	95.7	4.3	
Total %	0	0	0	2.1	93.7	4.2	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	8	8	**311**	13	324	**332**
07:15 AM	0	0	0	0	**11**	**11**	292	12	304	315
07:30 AM	0	0	0	0	5	5	309	**16**	**325**	330
07:45 AM	0	0	0	0	4	4	267	8	275	279
Total Volume	0	0	0	0	28	28	1179	49	1228	1256
% App. Total	0	0		0	100		96	4		
PHF	.000	.000	.000	.000	.636	.636	.948	.766	.945	.946

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	0	24	1	25
07:15 AM	0	0	0	2	18	0	20
07:30 AM	0	0	0	0	32	0	32
07:45 AM	0	0	0	0	13	0	13
Total	0	0	0	2	87	1	90
08:00 AM	0	0	0	0	18	0	18
08:15 AM	0	0	0	0	20	0	20
08:30 AM	0	0	0	0	22	0	22
08:45 AM	0	0	0	0	15	0	15
Total	0	0	0	0	75	0	75
Grand Total	0	0	0	2	162	1	165
Apprch %	0	0	0	100	99.4	0.6	
Total %	0	0	0	1.2	98.2	0.6	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	24	1	25	25
07:15 AM	0	0	0	0	2	2	18	0	18	20
07:30 AM	0	0	0	0	0	0	32	0	32	32
07:45 AM	0	0	0	0	0	0	13	0	13	13
Total Volume	0	0	0	0	2	2	87	1	88	90
% App. Total	0	0		0	100		98.9	1.1		
PHF	.000	.000	.000	.000	.250	.250	.680	.250	.688	.703

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From East			Addison St From South			Route 1A From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	2	0	0	0	0	0	0	2	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	0	1	0	0	0	3	0	3
08:00 AM	0	0	0	0	0	1	0	0	0	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	2
Grand Total	0	0	2	0	0	3	0	0	0	5	0	5
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars - Trucks

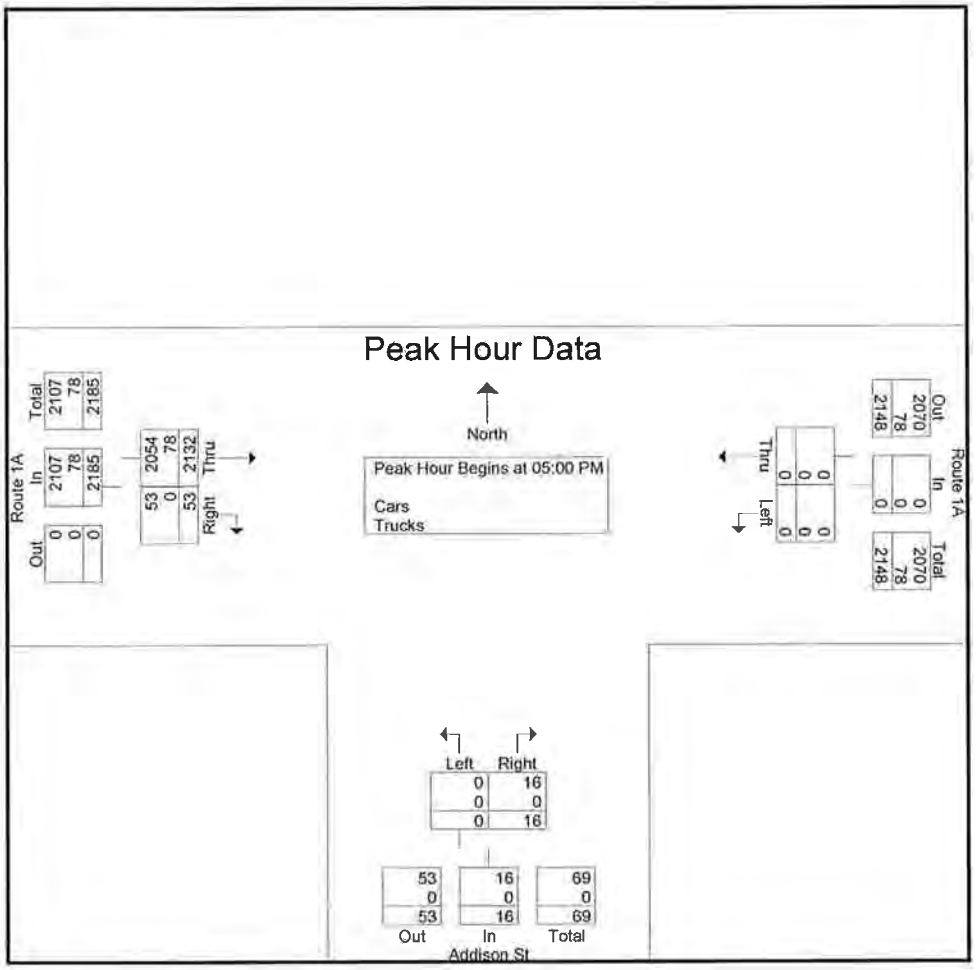
	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	5	516	25	546
04:15 PM	0	0	0	1	520	9	530
04:30 PM	0	0	0	0	553	14	567
04:45 PM	0	0	0	3	514	8	525
Total	0	0	0	9	2103	56	2168
05:00 PM	0	0	0	8	532	12	552
05:15 PM	0	0	0	2	532	15	549
05:30 PM	0	0	0	2	550	14	566
05:45 PM	0	0	0	4	518	12	534
Total	0	0	0	16	2132	53	2201
Grand Total	0	0	0	25	4235	109	4369
Apprch %	0	0	0	100	97.5	2.5	
Total %	0	0	0	0.6	96.9	2.5	
Cars	0	0	0	25	4067	109	4201
% Cars	0	0	0	100	96	100	96.2
Trucks	0	0	0	0	168	0	168
% Trucks	0	0	0	0	4	0	3.8

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	0	8	8	532	12	544	552
05:15 PM	0	0	0	0	2	2	532	15	547	549
05:30 PM	0	0	0	0	2	2	550	14	564	566
05:45 PM	0	0	0	0	4	4	518	12	530	534
Total Volume	0	0	0	0	16	16	2132	53	2185	2201
% App. Total	0	0		0	100		97.6	2.4		
PHF	.000	.000	.000	.000	.500	.500	.969	.883	.969	.972
Cars	0	0	0	0	16	16	2054	53	2107	2123
% Cars	0	0	0	0	100	100	96.3	100	96.4	96.5
Trucks	0	0	0	0	0	0	78	0	78	78
% Trucks	0	0	0	0	0	0	3.7	0	3.6	3.5

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	0	0	0	8	8	532	12	544
+15 mins.	0	0	0	0	2	2	532	15	547
+30 mins.	0	0	0	0	2	2	550	14	564
+45 mins.	0	0	0	0	4	4	518	12	530
Total Volume	0	0	0	0	16	16	2132	53	2185
% App. Total	0	0		0	100		97.6	2.4	
PHF	.000	.000	.000	.000	.500	.500	.969	.883	.969
Cars	0	0	0	0	16	16	2054	53	2107
% Cars	0	0	0	0	100	100	96.3	100	96.4
Trucks	0	0	0	0	0	0	78	0	78
% Trucks	0	0	0	0	0	0	3.7	0	3.6

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Cars

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	5	502	25	532
04:15 PM	0	0	0	1	495	9	505
04:30 PM	0	0	0	0	521	14	535
04:45 PM	0	0	0	3	495	8	506
Total	0	0	0	9	2013	56	2078
05:00 PM	0	0	0	8	511	12	531
05:15 PM	0	0	0	2	519	15	536
05:30 PM	0	0	0	2	523	14	539
05:45 PM	0	0	0	4	501	12	517
Total	0	0	0	16	2054	53	2123
Grand Total	0	0	0	25	4067	109	4201
Apprch %	0	0	0	100	97.4	2.6	
Total %	0	0	0	0.6	96.8	2.6	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	0	**8**	**8**	511	12	523	531
05:15 PM	0	0	0	0	2	2	519	**15**	534	536
05:30 PM	0	0	0	0	2	2	**523**	14	**537**	**539**
05:45 PM	0	0	0	0	4	4	501	12	513	517
Total Volume	0	0	0	0	16	16	2054	53	2107	2123
% App. Total	0	0		0	100		97.5	2.5		
PHF	.000	.000	.000	.000	.500	.500	.982	.883	.981	.985

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	0	14	0	14
04:15 PM	0	0	0	0	25	0	25
04:30 PM	0	0	0	0	32	0	32
04:45 PM	0	0	0	0	19	0	19
Total	0	0	0	0	90	0	90
05:00 PM	0	0	0	0	21	0	21
05:15 PM	0	0	0	0	13	0	13
05:30 PM	0	0	0	0	27	0	27
05:45 PM	0	0	0	0	17	0	17
Total	0	0	0	0	78	0	78
Grand Total	0	0	0	0	168	0	168
Apprch %	0	0	0	0	100	0	
Total %	0	0	0	0	100	0	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	0	0	25	0	25	25
04:30 PM	0	0	0	0	0	0	**32**	0	**32**	**32**
04:45 PM	0	0	0	0	0	0	19	0	19	19
05:00 PM	0	0	0	0	0	0	21	0	21	21
Total Volume	0	0	0	0	0	0	97	0	97	97
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.758	.000	.758	.758

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 61720004
Site Code : 6172004
Start Date : 4/12/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From East			Addison St From South			Route 1A From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	1
Grand Total	0	0	0	0	0	1	0	0	0	1	0	1
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State ; East Boston, MA
Weather : Clear

File Name : 617200S4
Site Code : 6172004
Start Date : 4/14/2012
Page No : 1

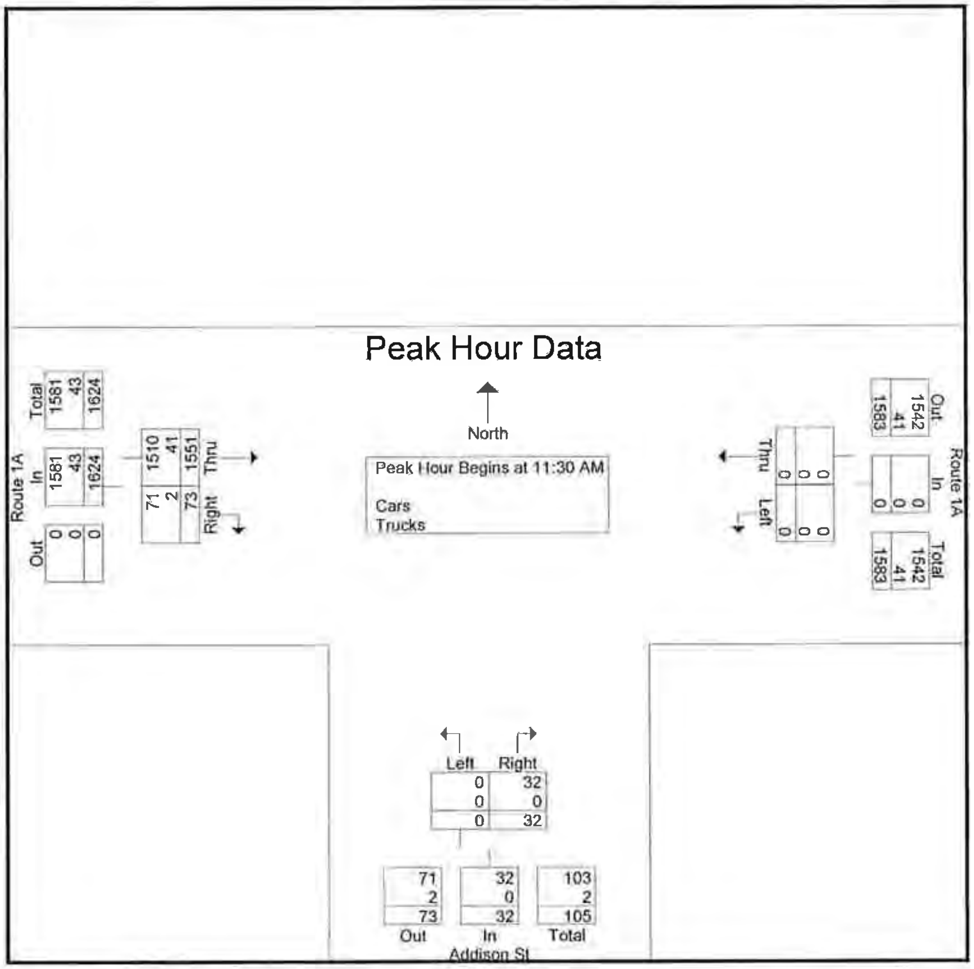
Groups Printed- Cars - Trucks

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	6	344	8	358
11:15 AM	0	0	0	4	343	16	363
11:30 AM	0	0	0	5	384	19	408
11:45 AM	0	0	0	15	370	14	399
Total	0	0	0	30	1441	57	1528
12:00 PM	0	0	0	7	410	19	436
12:15 PM	0	0	0	5	387	21	413
12:30 PM	0	0	0	10	373	14	397
12:45 PM	0	0	0	5	337	10	352
Total	0	0	0	27	1507	64	1598
01:00 PM	0	0	0	8	380	10	398
01:15 PM	0	0	0	1	410	15	426
01:30 PM	0	0	0	5	396	15	416
01:45 PM	0	0	0	4	370	19	393
Total	0	0	0	18	1556	59	1633
Grand Total	0	0	0	75	4504	180	4759
Apprch %	0	0	0	100	96.2	3.8	
Total %	0	0	0	1.6	94.6	3.8	
Cars	0	0	0	75	4384	176	4635
% Cars	0	0	0	100	97.3	97.8	97.4
Trucks	0	0	0	0	120	4	124
% Trucks	0	0	0	0	2.7	2.2	2.6

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	0	0	0	0	5	5	384	19	403	408
11:45 AM	0	0	0	0	**15**	**15**	370	14	384	399
12:00 PM	0	0	0	0	7	7	**410**	19	**429**	**436**
12:15 PM	0	0	0	0	5	5	387	**21**	408	413
Total Volume	0	0	0	0	32	32	1551	73	1624	1656
% App. Total	0	0		0	100		95.5	4.5		
PHF	.000	.000	.000	.000	.533	.533	.946	.869	.946	.950
Cars	0	0	0	0	32	32	1510	71	1581	1613
% Cars	0	0	0	0	100	100	97.4	97.3	97.4	97.4
Trucks	0	0	0	0	0	0	41	2	43	43
% Trucks	0	0	0	0	0	0	2.6	2.7	2.6	2.6

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200S4
Site Code : 6172004
Start Date : 4/14/2012
Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:45 AM			11:30 AM		
+0 mins.	0	0	0	0	**15**	**15**	384	19	403
+15 mins.	0	0	0	0	7	7	370	14	384
+30 mins.	0	0	0	0	5	5	**410**	19	**429**
+45 mins.	0	0	0	0	10	10	387	**21**	408
Total Volume	0	0	0	0	37	37	1551	73	1624
% App. Total	0	0		0	100		95.5	4.5	
PHF	.000	.000	.000	.000	.617	.617	.946	.869	.946
Cars	0	0	0	0	37	37	1510	71	1581
% Cars	0	0	0	0	100	100	97.4	97.3	97.4
Trucks	0	0	0	0	0	0	41	2	43
% Trucks	0	0	0	0	0	0	2.6	2.7	2.6

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200S4
Site Code : 6172004
Start Date : 4/14/2012
Page No : 1

Groups Printed- Cars

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	6	334	8	348
11:15 AM	0	0	0	4	332	16	352
11:30 AM	0	0	0	5	374	19	398
11:45 AM	0	0	0	15	360	12	387
Total	0	0	0	30	1400	55	1485
12:00 PM	0	0	0	7	396	19	422
12:15 PM	0	0	0	5	380	21	406
12:30 PM	0	0	0	10	360	14	384
12:45 PM	0	0	0	5	332	10	347
Total	0	0	0	27	1468	64	1559
01:00 PM	0	0	0	8	368	9	385
01:15 PM	0	0	0	1	400	15	416
01:30 PM	0	0	0	5	387	15	407
01:45 PM	0	0	0	4	361	18	383
Total	0	0	0	18	1516	57	1591
Grand Total	0	0	0	75	4384	176	4635
Apprch %	0	0	0	100	96.1	3.9	
Total %	0	0	0	1.6	94.6	3.8	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	0	0	0	0	5	5	374	19	393	398
11:45 AM	0	0	0	0	**15**	**15**	360	12	372	387
12:00 PM	0	0	0	0	7	7	**396**	19	**415**	**422**
12:15 PM	0	0	0	0	5	5	380	**21**	401	406
Total Volume	0	0	0	0	32	32	1510	71	1581	1613
% App. Total	0	0		0	100		95.5	4.5		
PHF	.000	.000	.000	.000	.533	.533	.953	.845	.952	.956

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200S4
Site Code : 6172004
Start Date : 4/14/2012
Page No : 1

Groups Printed- Trucks

	Route 1A From East		Addison St From South		Route 1A From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	0	10	0	10
11:15 AM	0	0	0	0	11	0	11
11:30 AM	0	0	0	0	10	0	10
11:45 AM	0	0	0	0	10	2	12
Total	0	0	0	0	41	2	43
12:00 PM	0	0	0	0	14	0	14
12:15 PM	0	0	0	0	7	0	7
12:30 PM	0	0	0	0	13	0	13
12:45 PM	0	0	0	0	5	0	5
Total	0	0	0	0	39	0	39
01:00 PM	0	0	0	0	12	1	13
01:15 PM	0	0	0	0	10	0	10
01:30 PM	0	0	0	0	9	0	9
01:45 PM	0	0	0	0	9	1	10
Total	0	0	0	0	40	2	42
Grand Total	0	0	0	0	120	4	124
Apprch %	0	0	0	0	96.8	3.2	
Total %	0	0	0	0	96.8	3.2	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	0	0	0	0	0	11	0	11	11
11:30 AM	0	0	0	0	0	0	10	0	10	10
11:45 AM	0	0	0	0	0	0	10	2	12	12
12:00 PM	0	0	0	0	0	0	14	0	14	14
Total Volume	0	0	0	0	0	0	45	2	47	47
% App. Total	0	0		0	0		95.7	4.3		
PHF	.000	.000	.000	.000	.000	.000	.804	.250	.839	.839

Accurate Counts
978-664-2565

N/S Street : Addison Street
E/W Street: Route 1A
City/State : East Boston, MA
Weather : Clear

File Name : 617200S4
Site Code : 6172004
Start Date : 4/14/2012
Page No : 1

Groups Printed- Bikes Peds

	Route 1A From East			Addison St From South			Route 1A From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	1	0	0	0	1	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	1	0	0	0	1	0	1
01:30 PM	0	0	0	0	0	2	1	0	0	2	1	3
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	1	0	0	3	1	4
Grand Total	0	0	0	0	0	4	1	0	0	4	1	5
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		80	20	

	Route 1A From East			Addison St From South			Route 1A From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

SEASONAL ADJUSTMENT DATA

MASSACHUSETTS HIGHWAY DEPARTMENT - STATEWIDE TRAFFIC DATA COLLECTION

2007 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	0.95	0.91	0.85	0.85	0.87	0.86	0.91	0.96	0.90	0.88	0.90	0.91
GROUP 2 - RURAL MAJOR COLLECTOR (R-5)	1.11	1.07	1.07	0.98	0.92	0.88	0.88	0.86	0.89	0.93	1.01	1.04
GROUP 3A - RECREATIONAL **(1-4) See below	1.26	1.20	1.18	1.04	0.96	0.86	0.78	0.79	0.93	0.99	1.07	1.12
GROUP 3B - RECREATIONAL ***(5) See below	1.22	1.18	1.20	1.04	0.96	0.88	0.73	0.74	0.99	1.02	1.12	1.17
GROUP 4 - I-495 INTERSTATE	1.05	1.03	1.03	0.95	0.93	0.87	0.86	0.83	0.89	0.93	0.93	0.96
GROUP 5 - EAST INTERSTATE	1.02	0.99	0.97	0.94	0.95	0.91	0.92	0.92	0.94	0.94	0.98	0.99
GROUP 6 - URBAN ARTERIALS, COLLECTORS & RURAL ARTERIALS (R-2, R-3)	1.03	0.99	0.97	0.92	0.91	0.90	0.92	0.91	0.92	0.93	0.97	0.97
GROUP 7 - I-84 PROXIMITY (STA. 17)	0.84	1.15	1.17	1.08	1.10	1.02	1.01	0.96	1.06	1.06	1.11	1.15
GROUP 8 - I-295 PROXIMITY (STA. 6590)	0.95	1.01	0.96	0.92	0.89	0.88	0.91	0.86	0.91	0.93	0.95	0.92
GROUP 9 - I-195 PROXIMITY (STA. 7)	1.10	1.03	1.00	0.94	0.91	0.87	0.84	0.82	0.88	0.93	1.03	0.99

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

2007 AXLE CORRECTION FACTORS

ROAD INVENTORY FUNCTIONAL CLASSIFICATION	AXLE CORRECTION FACTOR
RURAL	
1	0.90
2	0.93
3	0.98
0,5,6	0.98
URBAN	
1	0.96
2,3	0.97
5	0.99
0,6	0.99
I-84	0.83

Apply I-84 factor to stations: 3290,3921,3929

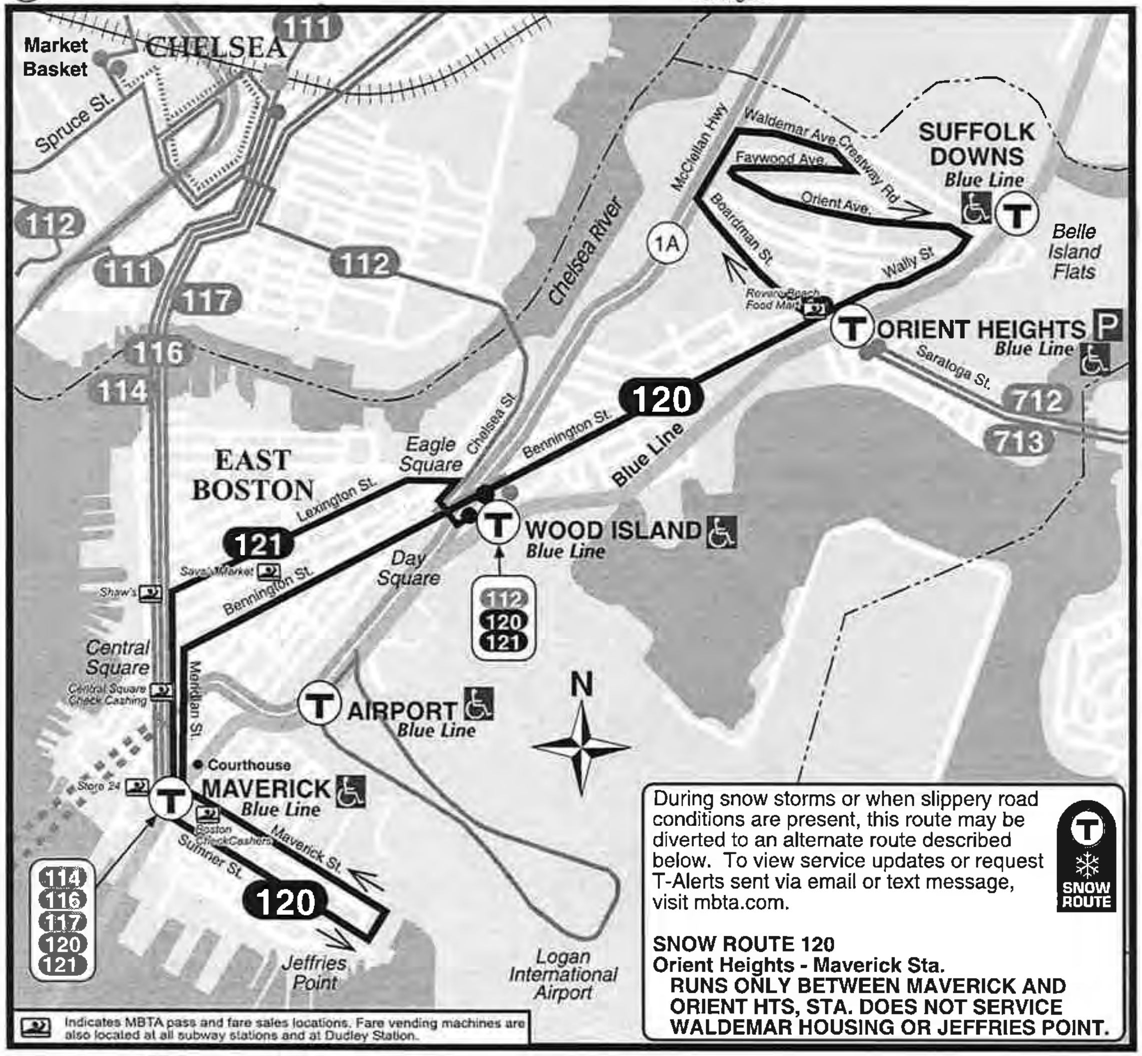
ROUND OFF

0 - 999............10

> 1,000...........100

PUBLIC TRANSPORTATION SCHEDULES

Route 120 *Orient Heights - Maverick Station* *via Bennington St., Jeffries Pt., & Waldemar Loop*
Route 121 *Wood Island - Maverick Station* *via Lexington St.*



During snow storms or when slippery road conditions are present, this route may be diverted to an alternate route described below. To view service updates or request T-Alerts sent via email or text message, visit mbta.com.

SNOW ROUTE

SNOW ROUTE 120
Orient Heights - Maverick Sta.
RUNS ONLY BETWEEN MAVERICK AND ORIENT HTS, STA. DOES NOT SERVICE WALDEMAR HOUSING OR JEFFRIES POINT.

Indicates MBTA pass and fare sales locations. Fare vending machines are also located at all subway stations and at Dudley Station.

120 121

WINTER December 31, 2011 - March 23, 2012

Orient Heights - Maverick Sta.
via Bennington St.

Wood Island - Maverick Sta.
via Lexington St.

Serving: Waldemar Loop, Day Sqare, Eagle Square, Central Square East Boston, Jeffries Point and connections to the Blue Line

SNOW ROUTE

Arrive times are approximate, subject to traffic.

Customer Service/Travel Info 617-222-3200
Toll Free................................1-800-392-6100
Hearing Impaired (TTY)...........617-222-5146

For more schedule or travel information, visit:
www.mbta.com

Massachusetts Bay Transportation Authority

massDOT
Massachusetts Department of Transportation

120 WEEKDAY

Leave Orient Heights (INBOUND)	Arrive Maverick To: Jeffries Point (INBOUND)	Arrive Maverick Station (INBOUND)	Leave Maverick Station (OUTBOUND)	Arrive Orient Hts. To: Waldemar (OUTBOUND)	Arrive Orient Heights (OUTBOUND)
5:25A	5:38A	5:45A	5:50A	6:02A	6:12A
5:50	6:03	6:10	.....	ds 6:25	6:35
6:15	6:28	6:35	6:15	6:27	6:37
6:35	6:48	6:55	6:40	6:52	7:02
s 6:47	.....	7:00	s 7:00	.....	7:13
6:51	7:04	7:11	7:05	7:18	7:28
7:07	7:21	7:28	7:21	7:34	7:44
7:23	7:37	7:44	7:37	7:50	8:00
7:39	7:53	8:00	7:53	8:06	8:16
7:55	8:09	8:16	8:09	8:22	8:32
8:11	8:25	8:32	8:25	8:38	8:48
8:27	8:41	8:48	8:41	8:54	9:04
8:43	8:57	9:04	8:57	9:10	9:20
9:00	9:14	9:21	9:13	9:26	9:36
9:20	9:34	9:41	9:30	9:43	9:53
9:40	9:54	10:01	9:50	10:03	10:13
10:00	10:14	10:21	10:10	10:23	10:33
10:20	10:34	10:41	10:30	10:43	10:53
10:40	10:54	11:01	10:50	11:03	11:13
11:00	11:14	11:21	11:10	11:23	11:33
11:20	11:34	11:41	11:30	11:43	11:53
11:40	11:54	**12:01P**	11:50	**12:03P**	**12:13P**
12:00N	**12:14P**	**12:21P**	**12:10P**	**12:23P**	**12:33P**
12:20P	**12:34**	**12:41**	**12:30**	**12:43**	**12:53**
12:40	**12:54**	**1:01**	**12:50**	**1:03**	**1:13**
1:00	**1:14**	**1:21**	**1:10**	**1:23**	**1:33**
1:20	**1:34**	**1:41**	**1:30**	**1:43**	**1:53**
1:40	**1:54**	**2:01**	**1:50**	**2:03**	**2:13**
2:00	**2:14**	**2:21**	**2:10**	**2:23**	**2:33**
2:20	**2:34**	**2:41**	**bs2:20**	**2:29**	**2:39**
2:40	**2:54**	**3:01**	**2:30**	**2:43**	**2:53**
3:00	**3:14**	**3:21**	**2:50**	**3:03**	**3:13**
3:20	**3:34**	**3:41**	**3:10**	**3:23**	**3:33**
3:40	**3:54**	**4:01**	**3:30**	**3:43**	**3:53**
4:00	**4:14**	**4:21**	**3:50**	**4:03**	**4:13**
4:20	**4:34**	**4:41**	**4:10**	**4:23**	**4:33**
4:40	**4:54**	**5:01**	**4:30**	**4:43**	**4:53**
5:00	**5:14**	**5:21**	**4:50**	**5:03**	**5:13**
5:20	**5:34**	**5:41**	**5:10**	**5:23**	**5:33**
5:45	**5:59**	**6:06**	**5:30**	**5:43**	**5:53**
6:10	**6:23**	**6:30**	**5:50**	**6:02**	**6:12**
6:30	**6:43**	**6:50**	**6:10**	**6:22**	**6:32**
7:00	**7:13**	**7:20**	**6:35**	**6:47**	**6:57**
8:00	**8:13**	**8:20**	**7:00**	**7:12**	**7:22**
9:00	**9:13**	**9:20**	**7:30**	**7:42**	**7:52**
10:00	**10:13**	**10:20**	**8:30**	**8:42**	**8:52**
11:00	**11:13**	**11:20**	**9:30**	**9:42**	**9:52**
11:45	**11:58**	12:05A	**10:30**	**10:42**	**10:52**
12:30A	12:43A	12:50	**11:22**	**11:34**	**11:44**
			12:07A	12:19A	12:29A
			w12:56	1:08	1:18

121 WEEKDAY

Leave Wood Island (INBOUND)	Arrive Eagle Square (INBOUND)	Arrive Maverick Square (INBOUND)	Leave Maverick Square (OUTBOUND)	Arrive Eagle Square (OUTBOUND)	Arrive Wood Island (OUTBOUND)
6:00A	6:02A	6:11A	6:15A	6:21A	6:25A
6:30	6:32	6:41	6:45	6:51	6:55
7:00	7:02	7:11	7:15	7:21	7:25
7:30	7:32	7:41	7:45	7:51	7:55
8:00	8:02	8:11	8:15	8:21	8:25
8:30	8:32	8:41	8:45	8:51	8:55
.....	**3:30P**	**3:39P**	**3:20P**	**3:30P**	.....
.....	**3:55**	**4:04**	**3:45**	**3:55**	.....
.....	**4:20**	**4:29**	**4:10**	**4:20**	.....
.....	**4:45**	**4:54**	**4:35**	**4:45**	.....
.....	**5:10**	**5:20**	**5:00**	**5:10**	.....
.....	**5:36**	**5:46**	**5:25**	**5:36**	.....
.....	**6:00**	**6:10**	**5:50**	**5:59**	.....
.....	**6:22**	**6:32**	**6:13**	**6:22**	.....
			6:35	**6:44**	.....

120 SATURDAY

Leave Orient Heights (INBOUND)	Arrive Maverick To: Jeffries Point (INBOUND)	Arrive Maverick Station (INBOUND)	Leave Maverick Station (OUTBOUND)	Arrive Orient Hts. To: Waldemar (OUTBOUND)	Arrive Orient Heights (OUTBOUND)
5:25A	5:38A	5:43A	5:47A	5:56A	6:10A
6:15	6:28	6:33	6:40	6:49	7:03
7:05	7:18	7:23	7:30	7:39	7:53
7:30	7:43	7:48	8:00	8:10	8:27
8:00	8:14	8:20	8:30	8:40	8:57
8:30	8:44	8:50	9:00	9:10	9:27
9:00	9:14	9:20	9:30	9:40	9:57
9:30	9:44	9:50	10:00	10:10	10:27
10:00	10:17	10:25	10:30	10:40	10:57
10:30	10:47	10:55	11:00	11:14	11:30
11:00	11:17	11:25	11:30	11:44	**12:00N**
11:30	11:47	11:55			
12:00N	**12:17P**	**12:25P**	**12:00N**	**12:14P**	**12:30P**
12:30P	**12:47**	**12:55**	**12:30P**	**12:44**	**1:00**
1:00	**1:17**	**1:22**	**1:00**	**1:14**	**1:30**
1:30	**1:47**	**1:52**	**1:30**	**1:44**	**2:00**
2:00	**2:17**	**2:22**	**2:00**	**2:14**	**2:30**
2:30	**2:47**	**2:52**	**2:30**	**2:44**	**3:00**
3:00	**3:17**	**3:22**	**3:00**	**3:14**	**3:30**
3:30	**3:47**	**3:52**	**3:30**	**3:44**	**4:00**
4:00	**4:17**	**4:22**	**4:00**	**4:14**	**4:30**
4:30	**4:47**	**4:52**	**4:30**	**4:44**	**5:00**
5:00	**5:17**	**5:22**	**5:00**	**5:14**	**5:30**
5:30	**5:47**	**5:52**	**5:30**	**5:44**	**6:00**
6:00	**6:17**	**6:22**	**6:00**	**6:11**	**6:28**
7:00	**7:17**	**7:22**	**6:30**	**6:41**	**6:58**
8:00	**8:17**	**8:22**	**7:30**	**7:41**	**7:58**
9:00	**9:17**	**9:22**	**8:30**	**8:41**	**8:58**
10:00	**10:17**	**10:22**	**9:30**	**9:41**	**9:58**
11:00	**11:17**	**11:22**	**10:30**	**10:40**	**10:51**
11:45	12:02A	12:07A	**11:22**	**11:32**	**11:43**
12:30A	12:47	12:52	12:07A	12:17A	12:28A
			w 12:56	1:06	1:17

120 SUNDAY

Leave Orient Heights (INBOUND)	Arrive Maverick To: Jeffries Point (INBOUND)	Arrive Maverick Station (INBOUND)	Leave Maverick Station (OUTBOUND)	Arrive Orient Hts. To: Waldemar (OUTBOUND)	Arrive Orient Heights (OUTBOUND)
6:00A	6:13A	6:18A	6:25A	6:34A	6:49A
6:50	7:03	7:08	7:15	7:24	7:39
7:40	7:53	7:58	8:05	8:14	8:29
8:30	8:43	8:48	8:55	9:04	9:19
9:20	9:33	9:38	9:45	9:54	10:09
10:10	10:23	10:28	10:35	10:44	10:59
11:00	11:13	11:18	11:25	11:34	11:49
11:50	**12:03P**	**12:08P**			
12:40P	**12:53P**	**12:58P**	**12:15P**	**12:24P**	**12:39P**
1:30	**1:44**	**1:50**	**1:05**	**1:15**	**1:27**
2:20	**2:34**	**2:40**	**1:55**	**2:05**	**2:17**
3:10	**3:26**	**3:33**	**2:45**	**2:55**	**3:07**
4:00	**4:13**	**4:18**	**3:35**	**3:45**	**3:57**
4:50	**5:03**	**5:08**	**4:25**	**4:35**	**4:47**
5:40	**5:53**	**5:58**	**5:15**	**5:25**	**5:37**
6:30	**6:43**	**6:48**	**6:05**	**6:15**	**6:27**
7:20	**7:32**	**7:37**	**6:55**	**7:05**	**7:17**
8:10	**8:22**	**8:27**	**7:45**	**7:55**	**8:08**
9:00	**9:12**	**9:17**	**8:35**	**8:45**	**8:59**
9:50	**10:02**	**10:07**	**9:25**	**9:35**	**9:49**
10:40	**10:52**	**10:57**	**10:15**	**10:25**	**10:39**
11:30	**11:42**	**11:47**	**11:05**	**11:15**	**11:29**
12:20A	12:32A	12:37A	**11:55**	12:05A	12:19A
			w 12:56A	1:06	1:20

b - Leaves from Bennington St. at Brooks St.
d - Via Waldemar Loop.
s - Does NOT run during school vacation.
w - Waits for last train to arrive at Maverick Sta.

ALL BUSES ARE ACCESSIBLE TO PERSONS WITH DISABILITIES.

Route 120
Orient Heights - Maverick Station

Route 121
Wood Island - Maverick Station

FARES

Paying with...	1-Bus Trip	2-Bus Trip	Bus + Subway Trip
CharlieCard	**$1.25**	$1.25	$1.70
CharlieTicket	**$1.50**	$1.50	$3.50
Cash onboard	**$1.50**	$3.00	$3.50
Student CharlieCard*	**60¢**	60¢	85¢
Senior/TAP CharlieCard**	**40¢**	40¢	60¢

Children 11 and under ride free when accompanied by an adult.
Blind Access CharlieCard customers ride free. If accompanied by sighted guide, guide also rides free.

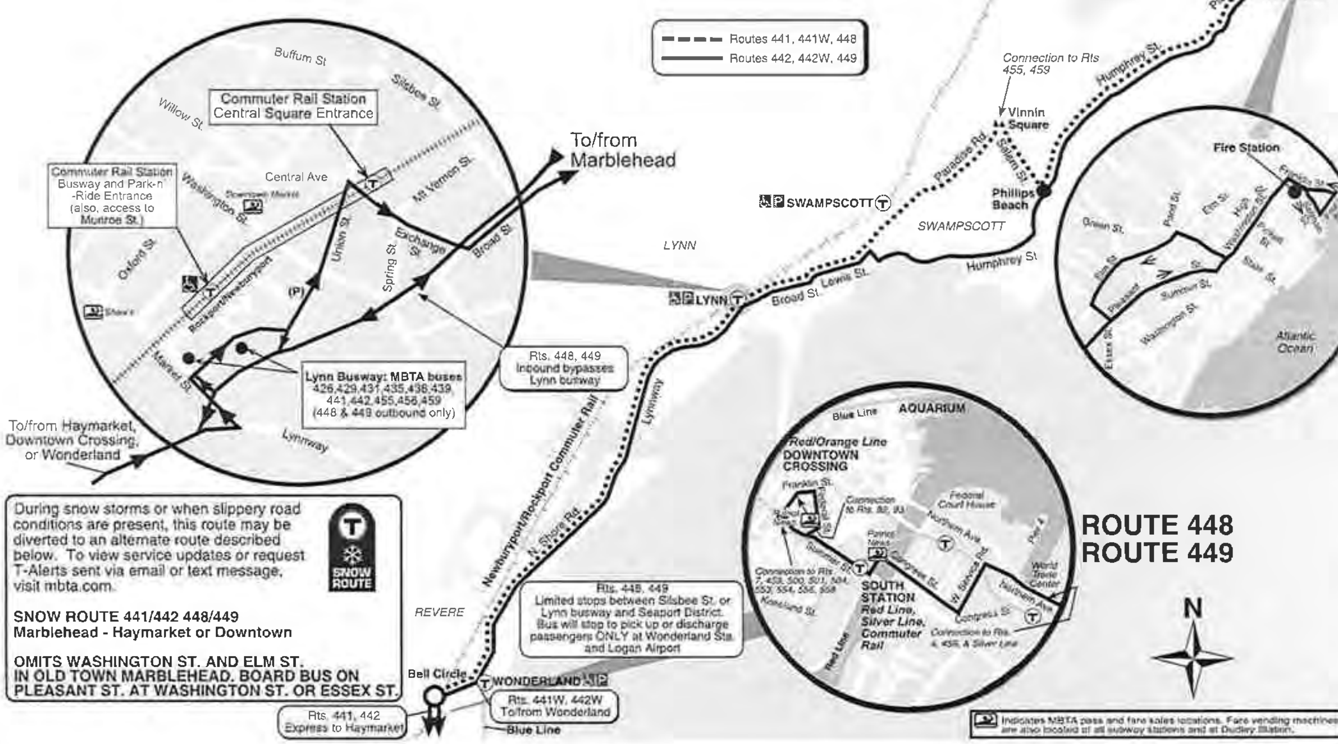
VALID PASSES: Local Bus Pass ($40/mo.); LinkPass ($59/mo.); Student Pass* ($20/mo.); Senior/TAP Pass** ($20/mo.); and express bus, zoned, interzoned, and boat passes.

* Available to students through participating middle schools and high schools.
**Available to Medicare cardholders, seniors 65+ and persons with disabilities.

Winter 2012 Holidays

January 2: See Sunday   January 16, February 20: See Saturday

Route 441/442 Marblehead - Haymarket *via Paradise Rd. or Humphrey St., Central Sq. Lynn, & Lynnway/North Shore Road*
Route 448/449 Marblehead - Downtown Crossing *via Paradise Rd. or Humphrey St., & Airport*
Route 441W & 442W *Marblehead - Wonderland Station (East Side)*



During snow storms or when slippery road conditions are present, this route may be diverted to an alternate route described below. To view service updates or request T-Alerts sent via email or text message, visit mbta.com.

SNOW ROUTE

SNOW ROUTE 441/442 448/449
Marblehead - Haymarket or Downtown

OMITS WASHINGTON ST. AND ELM ST. IN OLD TOWN MARBLEHEAD. BOARD BUS ON PLEASANT ST. AT WASHINGTON ST. OR ESSEX ST.

441	442
441W	442W
448	schedule change 449

SPRING March 24, 2012 - June 29, 2012

Marblehead - Haymarket, Downtown Crossing or Wonderland

Serving: Vinnin Sq., Swampscott, Wonderland Sta., Central Sq., Lynn, Logan Airport and connections to the Blue, Red, Green & Orange Lines

SNOW ROUTE

Arrive times are approximate, subject to traffic

Customer Service/Travel Info 617-222-3200
Toll Free................................1-800-392-6100
Hearing Impaired (TTY)..........617-222-5146

For more schedule or travel information, visit:
www.mbta.com

Massachusetts Bay Transportation Authority
massDOT Massachusetts Department of Transportation

441/442 448/449 — WEEKDAY

INBOUND

Leave Marblehead	Lv/Arrive Phillips Beach via Paradise	Lv/Arrive Phillips Beach via Humphrey	Lv/Arrive Central Square	Arrive Wonderland	Arrive Haymarket Station	Arrive Logan Term C	Arrive Otis & Summer Sts
—	—	—	5:45A	6:00A	—	—	—
5:40A	—	5:50A	6:01	6:19	6:44A	—	—
—	—	6:00	6:12	6:30	—	—	—
a 6:00	—	6:11	—	6:35	—	6:49A	7:09A
6:10	6:20A	—	6:35	6:51	7:15	—	—
—	—	6:30	6:42	7:00	—	—	—
a 6:28	6:39	—	—	7:09	—	7:23	7:43
—	6:45	—	7:00	7:21	—	—	—
6:43	—	6:54	7:07	7:27	7:53	—	—
—	—	7:00	7:16	7:36	—	—	—
a 6:58	—	7:10	—	7:37	—	7:51	8:21
—	7:15	—	7:33	7:54	—	—	—
7:13	7:26	—	7:45	8:04	8:28	—	—
—	—	7:30	7:46	8:06	—	—	—
a 7:28	7:39	—	—	8:09	—	8:23	8:43
—	7:45	—	8:03	8:21	—	—	—
7:43	—	7:59	8:15	8:33	8:58	—	—
a 7:58	—	8:10	—	8:37	—	8:51	9:11
—	8:15	—	8:32	8:50	—	—	—
—	—	8:30	8:42	8:59	—	—	—
8:13	8:25	—	8:45	9:02	9:22	—	—
—	8:45	—	9:02	9:20	—	—	—
8:50	—	9:03	9:15	9:32	9:57	—	—
9:10	9:22	—	9:40	9:56	10:16	—	—
9:40	—	9:53	10:05	10:22	10:47	—	—
10:10	10:22	—	10:40	10:56	11:16	—	—
10:40	—	10:53	11:05	11:22	11:47	—	—
11:10	11:22	—	11:40	11:56	12:16P	—	—
11:40	—	11:53	12:05P	12:22P	12:47	—	—
12:10P	12:22P	—	12:40P	12:56P	1:16P	—	—
12:40	—	12:53P	1:05	1:22	1:47	—	—
1:10	1:22	—	1:40	1:56	2:16	—	—
1:40	—	1:53	2:04	2:23	2:49	—	—
2:10	2:23	—	2:41	3:00	3:21	—	—
2:40	—	2:56	3:08	3:27	3:53	—	—
—	—	—	3:25	3:44	—	—	—
3:10	3:23	—	3:41	4:00	4:21	—	—
—	—	—	3:50	4:09	—	—	—
3:40	—	3:56	4:08	4:27	4:53	—	—
—	—	—	4:24	4:43	—	—	—
—	—	—	4:40	4:59	—	—	—
4:10	4:23	—	4:41	5:00	5:22	—	—
—	—	—	5:10	5:29	—	—	—
4:50	—	5:06	5:18	5:37	6:03	—	—
5:20	5:31	—	5:47	6:04	6:26	—	—
5:35	—	5:47	5:57	6:17	—	—	—
5:50	6:01	—	6:17	6:34	6:56	—	—
w 5:59	—	6:15	6:27	—	—	—	—
6:05	—	6:17	6:27	6:47	—	—	—
w 6:30	—	6:39	6:48	—	—	—	—
w 6:33	6:46	—	7:01	—	—	—	—
6:35	—	6:47	6:57	7:12	—	—	—
w 6:59	—	7:08	7:17	—	—	—	—
w 7:00	7:11	—	7:25	—	—	—	—
7:15	—	7:24	7:33	7:47	8:07	—	—
w 7:25	7:36	—	7:50	—	—	—	—
w 7:38	—	7:47	7:56	—	—	—	—
8:15	—	8:24	8:33	8:47	9:07	—	—
9:15	—	9:24	9:33	9:47	10:07	—	—
10:15	—	10:24	10:33	10:47	11:07	—	—
11:15	—	11:24	11:33	11:47	12:07A	—	—
w 12:10A	—	12:19A	12:28A	—	—	—	—

Shaded trips are Routes 448 & 449 and serve Logan Airport, the Seaport District and Downtown Crossing. Running time to Logan Airport is approximate due to traffic conditions. Inbound trips bypass Lynn Central Square busway. Limited service between downtown Lynn and Seaport District, stopping ONLY at Wonderland Station and Logan Airport.

OUTBOUND

Leave Otis & Summer Sts	Arrive Logan Term C	Leave Haymarket Station	Lv/Arrive Wonderland	Lv/Arrive Central Square	Arrive Phillips Beach via Humphrey	Arrive Phillips Beach via Paradise	Arrive Marblehead
—	—	—	—	w 5:11A	5:26A	—	5:38A
—	—	—	—	w 5:41	—	5:56A	6:10
—	—	—	—	w 5:58	6:15	—	6:27
—	—	—	—	w 6:14	6:31	—	6:43
—	—	—	—	w 6:29	6:46	—	6:58
—	—	—	6:27A	6:40	—	—	—
—	—	—	—	w 6:43	—	6:58	7:12
—	—	—	6:35	6:48	7:06	—	—
—	—	—	—	w 6:58	—	7:13	7:27
—	—	6:45A	6:56	7:09	7:27	—	7:41
—	—	—	—	w 7:09	7:27	—	7:43
—	—	—	7:25	7:38	7:56	—	—
—	—	—	7:40	7:53	—	8:10	—
—	—	7:30	7:41	7:54	—	8:11	8:26
7:15A	7:33A	—	7:50	8:02	8:18	—	8:29
—	—	—	7:50	8:03	8:21	—	—
—	—	8:00	8:11	8:24	8:42	—	8:56
7:45	8:03	—	8:20	8:32	—	8:50	9:00
—	—	8:30	8:41	8:54	—	9:10	9:25
—	—	—	8:50	9:03	—	—	—
—	—	9:00	9:11	9:24	9:42	—	9:56
—	—	9:30	9:44	10:01	—	10:18	10:33
—	—	10:05	10:16	10:29	10:47	—	11:01
—	—	10:35	10:49	11:05	—	11:23	11:38
—	—	11:05	11:16	11:29	11:47	—	12:01P
—	—	11:35	11:49	12:06P	—	12:23P	12:38
—	—	12:05P	12:16P	12:29P	12:47P	—	1:01P
—	—	12:35	12:49	1:06	—	1:23P	1:38
—	—	1:05	1:16	1:29	1:47	—	2:01
—	—	1:35	1:49	2:06	—	2:23	2:38
—	—	2:00	2:14	2:32	2:51	—	3:06
—	—	2:30	2:44	3:01	—	3:18	3:33
—	—	—	2:59	3:18	—	—	—
—	—	3:00	3:14	3:32	3:51	—	4:06
—	—	—	3:30	3:49	—	—	—
—	—	—	3:44	4:03	—	—	—
—	—	3:35	3:49	4:06	—	4:24	4:41
—	—	—	4:10	4:29	—	—	—
—	—	4:05	4:21	4:40	4:58	—	5:14
—	—	4:20	4:36	4:55	—	5:13	5:30
—	—	—	4:44	5:03	—	—	—
—	—	4:35	4:51	5:10	5:28	—	5:44
—	—	—	5:00	5:19	—	—	—
—	—	4:50	5:06	5:25	—	5:43	6:00
a 4:45P	5:03P	—	5:20	5:32	5:48	—	5:59
—	—	5:05	5:21	5:40	5:58	—	6:08
—	—	—	5:30	5:49	—	—	—
—	—	5:20	5:36	5:55	—	6:12	6:27
a 5:15	5:33	—	5:50	6:02	—	6:20	6:30
—	—	5:35	5:51	6:08	6:25	—	6:35
—	—	5:50	6:05	6:22	—	6:39	6:54
a 5:45	6:03	—	6:20	6:32	6:48	—	6:59
—	—	6:05	6:17	6:33	6:50	—	7:00
—	—	—	6:17	6:36	—	—	—
a 6:15	6:33	—	6:50	7:02	—	7:16	7:25
—	—	6:35	6:49	7:06	—	7:23	7:38
—	—	—	7:12	7:27	—	—	—
—	—	7:15	7:27	7:43	8:00	—	8:10
—	—	—	7:47	8:02	—	—	—
—	—	8:15	8:27	8:43	9:00	—	9:10
—	—	9:15	9:27	9:43	10:00	—	10:10
—	—	10:15	10:27	10:43	11:00	—	11:09
—	—	11:15	11:25	11:40	11:52	—	12:01A
—	—	12:15A	12:25A	12:40A	12:52A	—	1:01

441/442W — SATURDAY

INBOUND

Leave Marblehead	Leave Central Square	Arrive Wonderland
p 6:30A	6:46A	7:06A
h 6:55	7:13	7:38
p 7:25	7:43	8:04
h 7:55	8:14	8:39
p 8:25	8:44	9:06
h 8:55	9:14	9:39
p 9:25	9:44	10:08
h 9:55	10:14	10:39
p 10:25	10:47	11:12
h 10:55	11:16	11:43
p 11:25	11:47	12:12P
h 11:55	12:15P	12:37
p 12:25P	12:47P	1:12P
h 12:55	1:15	1:41
p 1:25	1:47	2:12
h 1:55	2:16	2:42
p 2:25	2:47	3:12
h 2:55	3:14	3:36
p 3:25	3:47	4:12
h 3:55	4:14	4:36
p 4:25	4:47	5:12
h 4:55	5:14	5:36
p 5:25	5:47	6:07
h 5:55	6:14	6:36
p 6:25	6:42	7:01
h 6:55	7:14	7:36
h 7:25	7:44	8:05
h 8:25	8:42	9:03
h 9:25	9:42	10:03
h 10:25	10:42	11:03
h 11:25	11:42	12:03A
h 12:25A	12:42A	1:03

OUTBOUND

Leave Wonderland	Leave Central Square	Arrive Marblehead
—	wp 6:05A	6:28A
—	wh 6:30	6:53
p 6:45A	6:57	7:20
h 7:15	7:25	7:49
p 7:45	7:57	8:20
h 8:15	8:29	8:54
p 8:45	8:57	9:22
h 9:15	9:26	9:52
p 9:45	9:59	10:24
h 10:15	10:26	10:52
p 10:45	10:59	11:24
h 11:15	11:26	11:52
p 11:45	11:59	12:24P
h 12:15P	12:29P	12:55P
p 12:45	12:59	1:24
h 1:15	1:29	1:55
p 1:45	1:59	2:24
h 2:15	2:29	2:55
p 2:45	2:59	3:23
h 3:15	3:29	3:55
p 3:45	3:59	4:25
h 4:15	4:29	4:55
p 4:45	4:58	5:24
h 5:15	5:29	5:55
p 5:45	5:58	6:24
h 6:15	6:29	6:55
h 6:45	6:59	7:25
h 7:45	7:59	8:23
h 8:45	8:54	9:18
h 9:45	9:54	10:18
h 10:45	10:54	11:18
h 11:45	11:54	12:18A

SERVICE NOTE
WEEKEND SERVICE OMITS HAYMARKET SQUARE

a - Omits Point of Pines
h - Via Humphrey St
p - Via Paradise Rd

w - To or from W. Lynn & operates via Western Ave. and does not service Wonderland Station

Route 441/442 448/449
441W/442W
Marblehead - Haymarket, Downtown Crossing or Wonderland Sta. via Central Square, Lynn & Lynnway

441/442W — SUNDAY

INBOUND

Leave Marblehead	Leave Central Square	Arrive Wonderland
h 7:55A	8:13A	8:37A
h 8:55	9:13	9:37
p 9:25	9:43	10:04
h 9:55	10:15	10:41
p 10:25	10:43	11:05
h 10:55	11:15	11:39
p 11:25	11:44	12:08P
h 11:55	12:15P	12:39
p 12:25P	12:44P	1:08P
h 12:55	1:15	1:39
p 1:25	1:44	2:10
h 1:55	2:13	2:32
p 2:25	2:46	3:10
h 2:55	3:13	3:32
p 3:25	3:43	4:06
h 3:55	4:13	4:32
p 4:25	4:43	5:06
h 4:55	5:13	5:32
p 5:30	w 5:48	—
h 5:55	6:13	6:32
p 6:25	6:43	7:06
h 7:25	7:42	8:04
h 8:25	8:42	9:04
h 9:25	9:42	10:04
h 10:25	10:42	11:04
h 11:25	w 11:42	—
h 12:25A	12:42A	1:04A

OUTBOUND

Leave Wonderland	Leave Central Square	Arrive Marblehead
—	wh 7:30A	7:54A
—	wh 8:30	8:54
p 8:45A	9:00	9:23
h 9:15	9:25	9:49
p 9:45	10:00	10:25
h 10:15	10:25	10:49
p 10:45	10:59	11:24
h 11:15	11:25	11:49
p 11:45	11:59	12:24P
h 12:15P	12:26P	12:52P
p 12:45	12:59	1:25
h 1:15	1:26	1:52
p 1:45	2:00	2:24
h 2:15	2:26	2:52
p 2:45	2:59	3:23
h 3:15	3:28	3:54
p 3:45	3:59	4:23
h 4:15	4:26	4:47
p 4:45	4:59	5:23
h 5:15	5:27	5:52
p 5:45	5:59	6:23
h 6:45	6:57	7:21
h 7:45	7:55	8:19
h 8:45	8:55	9:19
h 9:45	9:55	10:19
h 10:45	10:55	11:19
h 11:45	11:55	12:19A

For additional service between Haymarket and Central Sq., Lynn, please refer to the Route 455/459 schedule card

ALL BUSES ARE ACCESSIBLE TO PERSONS WITH DISABILITIES

FARES

Paying with	Local	Inner X-Bus Trip	Inner X-Bus + Local Bus Trip	Inner X-Bus + Subway Trip
CharlieCard	$1.25	$2.80	$2.80	$2.80
CharlieTicket	$1.50	$3.50	$5.00	$5.50
Cash onboard	$1.50	$3.50	$5.00	$5.50
Student CharlieCard*	$0.60	$1.40	$1.40	$1.40
Senior/TAP CharlieCard**	$0.40	$1.40	$1.40	$1.40

Children 11 and under ride free when accompanied by an adult. Blind Access CharlieCard customers ride free. If accompanied by sighted guide, guide also rides free.

VALID PASSES: Inner Express Bus Pass ($89/mo.), Outer Express Bus Pass ($129/mo.), Commuter Boat Pass ($198/mo), and Commuter Rail Zone 1-8 passes

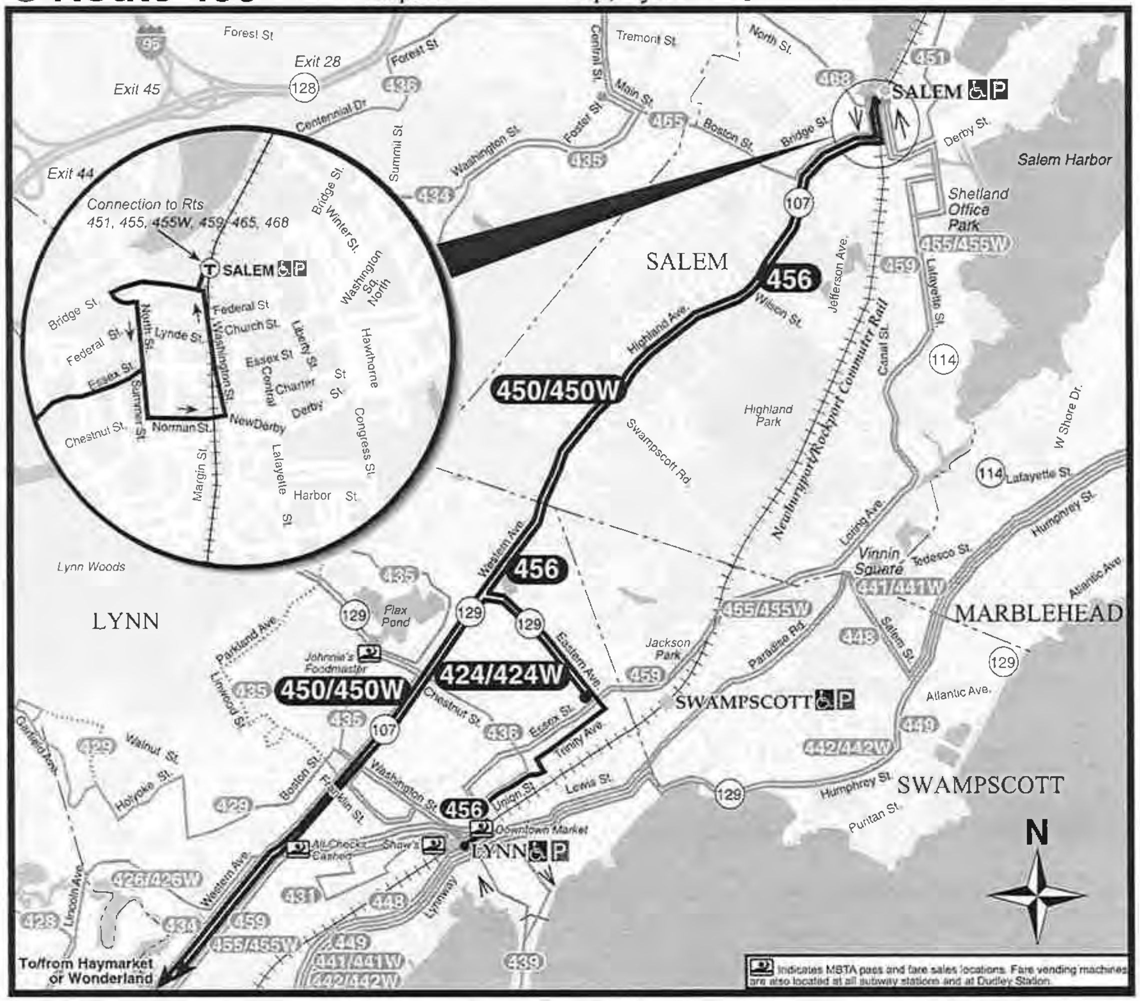
* Available to students through participating middle schools and high schools
** Available to Medicare cardholders, seniors 65+, and persons with disabilities

Local bus fare applies if your trip does not cross the Tobin Bridge or Boston Harbor

Spring 2012 Holidays

April 16: See Saturday   May 28: See Sunday

Route 424/424W Eastern Ave. & Essex St. - Haymarket Sta. or Wonderland
Route 450/450W Salem Depot - Haymarket Sta. or Wonderland
Route 456 Salem Depot - Central Sq., Lynn via Highland Ave.



424 424W
450 450W
456

SPRING March 24, 2012 - June 29, 2012

Salem Depot - Haymarket Sta. or Wonderland Sta.

Serving: Central Sq., Lynn, Salem & N.S. Children's Hospitals, Bell Circle, Eastern Ave. & Essex St. and connections to the Green & Orange Lines

Arrive times are approximate, subject to traffic.

Customer Service/Travel Info 617-222-3200
Toll Free..............................1-800-392-6100
Hearing Impaired (TTY)...........617-222-5146

For more schedule or travel information, visit:
www.mbta.com

Massachusetts Bay Transportation Authority
massDOT Massachusetts Department of Transportation

424/424W/450/450W/456 WEEKDAY

Rte.	Leave Salem Depot	Leave Eastern & Essex	Arrive Central Square	Arrive W Lynn Garage	Arrive Wonder-land	Arrive Haymarket Station
450	5:40A	.....	.....	6:03A	.....	6:33A
424W	.....	5:51A	.....	6:04	6:16A	.....
450	6:10	.....	.....	6:40	.....	7:10
424W	.....	6:31	.....	6:52	7:08	.....
450	6:40	.....	.....	7:10	.....	7:40
424W	.....	7:01	.....	7:22	7:38	.....
450	7:10	.....	.....	7:40	.....	8:10
424W	.....	7:31	.....	7:52	8:08	.....
450	7:40	.....	.....	8:10	.....	8:41
424W	.....	8:01	.....	8:22	8:37	.....
450	8:10	.....	.....	8:40	.....	9:08
450	8:40	.....	.....	9:09	.....	9:34
450	9:10	.....	.....	9:42	.....	10:07
456	9:40	9:58	10:07	.....	.....	.....
450	10:20	.....	.....	10:52	.....	11:17
456	11:00	11:19	11:28	.....	.....	.....
450	11:40	.....	.....	12:12P	.....	12:37P
456	12:20P	12:39P	12:48P	.....	.....	.....
450	1:00	.....	.....	1:32P	.....	1:57P
456	1:40	1:59	2:09	.....	.....	.....
450	2:20	.....	.....	2:52	.....	3:24
456	3:00	3:21	3:31	.....	.....	.....
450	3:40	.....	.....	4:12	.....	4:44
456	4:20	4:41	4:51	.....	.....	.....
450	4:50	.....	.....	5:22	.....	5:54
450	5:40	.....	.....	6:10	.....	6:37
450	6:10	.....	.....	6:36	.....	7:02
450	6:37	.....	.....	7:03	.....	.....
450	6:49	.....	.....	7:12	.....	.....
450W	7:01	.....	.....	7:24	7:35P	.....
450	7:31	.....	.....	7:52	.....	.....
450	7:57	.....	.....	8:16	.....	.....
450	8:10	.....	.....	8:33	.....	8:54
450	8:30	.....	.....	8:49	.....	.....
450	8:40	.....	.....	9:03	.....	9:24
450	9:10	.....	.....	9:33	.....	9:54
450	9:42	.....	.....	10:01	.....	.....
450	10:10	.....	.....	10:33	.....	10:54
450	10:43	.....	.....	11:02	.....	.....
450	11:15	.....	.....	11:38	.....	11:59
450	12:22A	.....	.....	12:41A	.....	.....
450	1:10	.....	.....	1:29	.....	.....

Route 456 indicated by shaded areas

ALL BUSES ARE ACCESSIBLE TO PERSONS WITH DISABILITIES.

Rte.	Leave Haymarket Station	Lv/Arrive W.Lynn Garage	Lv/Arrive Central Square	Arrive Salem Depot
450	.....	4:46A	.....	5:10A
450	.....	5:01	.....	5:25
450	.....	5:16	.....	5:40
450	.....	5:16	.....	5:40
450	.....	5:45	.....	6:10
450	.....	6:05	.....	6:30
450	.....	6:33	.....	7:01
450	6:40A	7:01	.....	7:35
456	.....	6:55	7:05A	7:33
450	7:10	7:31	.....	8:05
450	7:40	8:01	.....	8:35
450	8:10	8:31	.....	9:05
456	.....	8:30	8:40	9:08
456	.....	.....	9:00	9:31
450	9:10	9:31	.....	10:05
456	.....	.....	10:15	10:46
450	10:20	10:41	.....	11:15
456	.....	.....	11:35	12:05P
450	11:40	12:01P	.....	12:35
456	.....	.....	12:55P	1:25P
450	1:00P	1:21P	.....	1:55
456	.....	.....	2:15	2:50
450	2:20	2:43	.....	3:23
456	.....	.....	3:35	4:10
450	3:10	3:37	.....	4:18
450	3:40	4:07	.....	4:48
424 b	4:10	4:35	.....	.....
450	4:25	4:52	.....	5:33
424 b	4:40	5:10	.....	.....
450	4:55	5:22	.....	6:02
424 b	5:10	5:40	.....	.....
450	5:25	5:52	.....	6:27
424 b	5:40	6:08	.....	.....
450	5:55	6:15	.....	6:48
450	6:10	6:29	.....	7:02
450	6:40	6:59	.....	7:32
450	7:10	7:29	.....	8:02
450	8:20	8:39	.....	9:12
450	9:20	9:39	.....	10:12
450	10:20	10:39	.....	11:12
450	11:30	11:49	.....	12:22A

b- To Eastern Ave. & Essex St.

After 8:00PM all Route 450 trips travel via the Callahan/Sumner Tunnel

450W SATURDAY

Leave Salem Depot	Arrive W. Lynn Garage	Arrive Wonderland Station
6:30A	6:54A	7:11A
7:30	7:54	8:11
8:30	8:54	9:12
9:30	9:55	10:14
10:30	10:55	11:15
11:35	12:03P	12:23P
12:40P	1:08P	1:28P
1:50	2:18	2:38
3:00	3:28	3:48
4:10	4:38	4:58
5:15	5:43	6:03
6:25	6:53	7:12
6:30	6:47	.....
7:30	7:55	8:14
7:35	7:52	.....
8:30	8:55	9:12
9:30	9:51	10:07
10:30	10:51	11:07
11:30	11:51	12:07A
12:32A	12:49A	.....

Leave Wonderland Station	Arrive W. Lynn Garage	Arrive Salem Depot
.....	6:05A	6:22A
6:45A	6:54	7:23
.....	7:35	7:52
7:45	7:54	8:23
.....	8:05	8:22
8:45	8:54	9:28
9:45	9:54	10:29
10:45	10:54	11:30
11:45	11:56	12:32P
12:55P	1:06P	1:42P
2:05	2:16	2:52
3:15	3:26	4:02
4:25	4:36	5:12
5:35	5:46	6:22
6:40	6:51	7:27
7:45	7:54	8:29
8:45	8:54	9:24
9:45	9:54	10:23
10:45	10:54	11:23

450W SUNDAY

Leave Salem Depot	Arrive W. Lynn Garage	Arrive Wonderland Station
8:30A	8:55A	9:08A
9:30	9:55	10:08
10:30	10:55	11:08
11:30	11:55	12:08P
12:30P	12:55P	1:08P
1:30	1:55	2:08
2:30	2:55	3:08
3:30	3:55	4:08
4:30	4:55	5:08
5:30	5:55	6:08
6:30	6:55	7:08
7:30	7:55	8:08
8:30	8:55	9:08
9:30	9:55	10:08
10:30	10:55	11:08
11:50	12:15	.....

Leave Wonderland Station	Arrive W. Lynn Garage	Arrive Salem Depot
7:45A	8:00A	8:23A
8:45	9:00	9:23
9:45	10:00	10:23
10:45	11:00	11:23
11:45	12:00N	12:23P
12:45P	1:00P	1:23P
1:45	2:00	2:23
2:45	3:00	3:23
3:45	4:00	4:23
4:45	5:00	5:23
5:45	6:00	6:23
6:45	7:00	7:23
7:45	8:00	8:23
8:45	9:00	9:23
9:45	10:00	10:23
10:45	11:00	11:23

Route 424/424W
Eastern Ave. & Essex St. - Haymarket or Wonderland Sta.

Route 450/450W
Salem Depot - Haymarket or Wonderland Sta.

Route 456
Salem Depot - Central Sq., Lynn via Highland Avenue

ROUTE 424/424W/450/450W FARES

Paying with...	Local	Inner X-bus trip	Inner X-bus + local bus trip	Inner X-bus + subway trip
CharlieCard	$1.25	$2.80	$2.80	$2.80
CharlieTicket	$1.50	$3.50	$5.00	$5.50
Cash onboard	$1.50	$3.50	$5.00	$5.50
Student CharlieCard*	$0.60	$1.40	$1.40	$1.40
Senior/TAP CharlieCard**	$0.40	$1.40	$1.40	$1.40

Children 11 and under ride free when accompanied by an adult. Blind Access CharlieCard customers ride free. If accompanied by sighted guide, guide also rides free.

VALID PASSES: Inner Express Bus ($89/mo.), Outer Express Bus ($129/mo.), Commuter Boat Pass ($198/mo.), and Commuter Rail Zone 1-8 passes.

* Available to students through participating middle schools and high schools.

** Available to Medicare cardholders, seniors 65+, and persons with disabilities.

Local bus fare applies if your trip does not cross the Tobin Bridge or Boston Harbor.

ROUTE 456 FARES

Paying with...	1-bus trip	2-bus trip	Bus + subway trip
CharlieCard	$1.25	$1.25	$1.70
CharlieTicket	$1.50	$1.50	$3.50
Cash onboard	$1.50	$3.00	$3.50
Student CharlieCard*	60¢	60¢	85¢
Senior/TAP CharlieCard**	40¢	40¢	60¢

Children 11 and under ride free when accompanied by an adult. Blind Access CharlieCard customers ride free. If accompanied by sighted guide, guide also rides free.

VALID PASSES: Local Bus Pass ($40/mo.); LinkPass ($59/mo.); Student Pass* ($20/mo.); Senior/TAP Pass** ($20/mo.); and express bus, zoned, interzoned and boat passes.

* Available to students through participating middle schools and high schools

** Available to Medicare cardholders, seniors 65+, and persons with disabilities

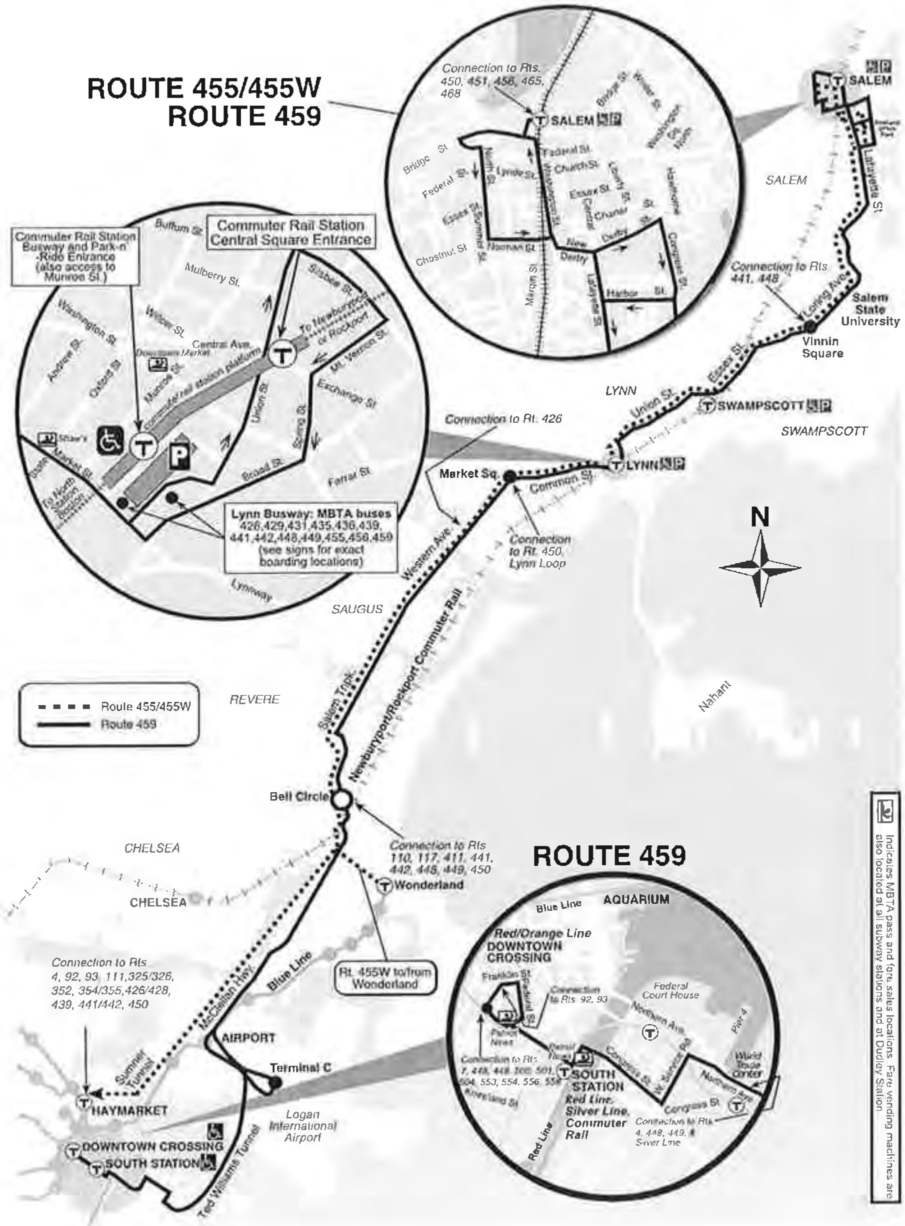
Spring 2012 Holidays

April 16: See Saturday
May 28: See Sunday

Route 455W *Salem Depot - Wonderland* via Central Square, Lynn

Route 455 *Salem Depot - Haymarket* via Loring Ave., Central Square, Lynn & Western Ave.

Route 459 *Salem Depot - Downtown* via Logan Airport & Central Square, Lynn



Route	Description
455W	Salem Depot - Wonderland, Central Sq., Lynn
455	Salem Depot - Haymarket, Central Sq., Lynn
459	Salem Depot - Downtown, via Logan Airport

SPRING March 24, 2012 - June 29, 2012

Serving: Vinnin Square, Salem State University, Shetland Office Park with connections to the Green, Blue, Red & Orange Lines & Newburyport/Rockport Commuter Rail

Arrive times are approximate, subject to traffic.

Customer Service/Travel Info 617-222-3200
Toll Free..........................1-800-392-6100
Hearing Impaired (TTY).........617-222-5146

For more schedule or travel information, visit: **www.mbta.com**

Massachusetts Bay Transportation Authority
massDOT Massachusetts Department of Transportation

455/455W/459 WEEKDAY

INBOUND

Leave Salem Depot	Arrive Vinnin Square	Lv/Arrive Central Square	Arrive West Lynn	Arrive Wonderland	Arrive Haymarket Station	Arrive Logan Term C	Arrive Downtown Crossing
.....	.....	5:00A	5:08A	5:18A	.....	.....	.....
.....	.....	5:15	5:23	.....	5:47A	.....	.....
5:10A	5:21A	5:30	5:38	.....	6:04	.....	.....
5:25	5:36	5:45	5:53	6:03	.....	.....	.....
5:40	5:52	6:02	6:11	.....	.....	6:27A	6:52A
5:55	6:07	6:19	6:29	6:39	.....	.....	.....
6:10	6:22	6:34	6:44	.....	7:18	.....	.....
6:25	6:37	6:49	6:59	7:09	.....	.....	.....
6:40	6:55	7:06	7:16	.....	.....	7:35	8:05
6:55	7:11	7:24	7:36	7:46	.....	.....	.....
7:10	7:27	7:40	7:52	.....	8:26	.....	.....
7:25	7:42	7:55	8:07	8:17	.....	.....	.....
7:40	7:57	8:09	8:19	.....	.....	8:38	9:06
7:55	8:12	8:25	8:37	8:47	.....	.....	.....
8:10	8:27	8:40	8:52	.....	9:26	.....	.....
8:45	9:02	9:15	9:27	.....	.....	9:42	10:06
9:15	9:32	9:45	9:57	.....	10:31	.....	.....
9:50	10:07	10:20	10:32	.....	.....	10:47	11:15
10:20	10:37	10:50	11:02	.....	11:36	.....	.....
10:55	11:11	11:25	11:35	.....	.....	11:50	12:19
11:25	11:42	11:55	12:07P	.....	12:41P	.....	.....
12:00N	**12:16P**	**12:30P**	**12:40P**	.....	.....	**12:55P**	**1:24P**
12:30P	**12:47**	**1:00**	**1:12**	.....	**1:46P**	.....	.....
1:05	**1:21**	**1:35**	**1:45**	.....	.....	**2:00**	**2:34**
1:40	**1:57**	**2:10**	**2:21**	.....	**2:49**	.....	.....
2:15	**2:32**	**2:46**	**2:57**	.....	.....	**3:13**	**3:47**
e 2:35	.....	**2:42**	**2:53**	.....	.....	.....	.....
2:45	**3:04**	**3:17**	**3:28**	.....	**3:56**	.....	.....
3:20	**3:37**	**3:51**	**4:02**	.....	.....	**4:18**	**4:52**
3:50	**4:09**	**4:21**	**4:32**	.....	**5:06**	.....	.....
4:25	**4:42**	**4:56**	**5:05**	.....	.....	**5:19**	**5:42**
5:00	**5:18**	**5:30**	**5:41**	.....	**6:15**	.....	.....
5:30	**5:46**	**5:59**	**6:07**	.....	.....	**6:21**	**6:44**
6:00	**6:18**	**6:30**	**6:41**	.....	**7:09**	.....	.....
7:00	**7:13**	**7:27**	**7:38**	.....	**8:03**	.....	.....
a 7:10	**7:23**	**7:37**	**7:48**	.....	.....	.....	.....
c 8:10	**8:25**	**8:37**	**8:46**	.....	**9:12**	.....	.....
c 9:10	**9:25**	**9:37**	**9:46**	.....	**10:12**	.....	.....
c10:10	**10:24**	**10:36**	**10:43**	.....	**11:07**	.....	.....
c11:15	**11:28**	**11:45**	**11:50**	12:08A	.....	.....	.....
c12:10A	12:23A	12:33A	12:41A	.....	1:10A	.....	.....

OUTBOUND

Leave Downtown Crossing	Arrive Logan Term C	Leave Haymarket Station	Lv/Arrive West Lynn	Arrive Central Square	Arrive Vinnin Square	Arrive Salem Depot
.....	.....	.....	5:16A	5:23A	5:34A	5:51A
.....	.....	.....	5:47	5:54	6:05	6:22
.....	.....	.....	6:05	6:12	6:23	6:40
.....	.....	5:55A	6:10	6:20	6:43	7:09
6:30A	6:46A	.....	7:01	7:11	7:26	7:49
.....	.....	.....	e7:10	7:20	.....	.....
7:20	7:36	.....	7:50	7:59	8:12	8:34
.....	.....	7:50	8:05	8:15	8:38	9:03
8:20	8:35	.....	8:49	8:58	9:11	9:33
.....	.....	8:55	9:12	9:20	9:39	10:01
9:25	9:40	.....	9:54	10:03	10:16	10:38
.....	.....	10:00	10:20	10:28	10:47	11:10
10:30	10:45	.....	10:59	11:08	11:21	11:43
.....	.....	11:05	11:25	11:34	11:53	12:17P
11:35	11:50	.....	12:04P	12:13P	12:26P	12:51
.....	.....	**12:10P**	**12:30P**	**12:39P**	**12:58P**	**1:22P**
12:40P	**12:56P**	—	**1:12**	**1:24**	**1:39**	**2:04**
.....	.....	**1:15**	**1:35**	**1:44**	**2:03**	**2:27**
1:45	**2:01**	—	**2:17**	**2:29**	**2:44**	**3:09**
.....	.....	**2:20**	**2:40**	**2:53**	**3:13**	**3:36**
2:50	**3:06**	—	**3:22**	**3:34**	**3:50**	**4:15**
.....	.....	**3:25**	**3:47**	**3:59**	**4:20**	**4:43**
3:55	**4:13**	.....	**4:33**	**4:43**	**4:58**	**5:14**
.....	.....	**4:30**	**4:52**	**5:04**	**5:25**	**5:48**
5:05	**5:26**	.....	**5:45**	**5:55**	**6:09**	**6:30**
.....	.....	**5:35**	**5:57**	**6:06**	**6:27**	**6:44**
6:05	**6:23**	—	**6:38**	**6:45**	**6:57**	**7:14**
.....	.....	**6:35**	**6:53**	**7:01**	**7:16**	**7:31**
7:10	**7:26**	—	**7:39**	**7:46**	**7:58**	**8:15**
.....	.....	**7:35**	**7:52**	**7:59**	**8:14**	**8:29**
.....	.....	**c 8:00**	**8:23**	**8:30**	**8:47**	**8:59**
.....	.....	**c 8:30**	**8:53**	**9:00**	**9:17**	**9:29**
.....	.....	**c 9:00**	**9:23**	**9:30**	**9:47**	**9:59**
.....	.....	**c 9:30**	**9:53**	**10:00**	**10:17**	**10:29**
.....	.....	**c10:00**	**10:23**	**10:30**	**10:47**	**10:59**
.....	.....	**c11:00**	**11:23**	**11:30**	**11:47**	**11:59**
.....	.....	c12:00M	12:23A	12:30A	12:47A	12:59A

a - To or from West Lynn Garage
c - Route 426 via Cliftondale Square
e - To or from Essex Street and Eastern Avenue and does NOT run during school vacation

Shaded area trips serve Logan Airport, World Trade Center and Downtown Crossing (Rte. 459).

WEEKDAY NOTE:
ALL TRIPS TO OR FROM SALEM DEPOT SERVE SHETLAND OFFICE PARK

EARLY MORNING TRIP TO LOGAN AIRPORT WEEKDAY & SAT.
Leaves Haymarket Sta. at 5:10AM, arrives Terminal C at 5:19AM.

455W SATURDAY

INBOUND

Leave Salem Depot	Arrive Vinnin Square	Leave Central Square	Arrive Wonderland
.....	.....	5:50A	6:17A
6:05A	6:19A	6:35	6:58
6:35	6:49	7:05	7:28
7:05	7:19	7:35	7:58
7:35	7:49	8:05	8:28
8:05	8:19	8:35	8:58
8:35	8:49	9:05	9:28
9:05	9:19	9:35	9:58
9:35	9:49	10:05	10:28
10:05	10:19	10:35	10:58
10:35	10:49	11:05	11:28
11:05	11:19	11:35	11:58
11:35	11:49	12:05P	12:28P
12:05P	**12:19P**	**12:35P**	**12:58P**
12:35	**12:49**	**1:05**	**1:28**
1:05	**1:19**	**1:35**	**1:58**
1:35	**1:49**	**2:05**	**2:28**
2:05	**2:19**	**2:35**	**2:58**
2:35	**2:49**	**3:05**	**3:28**
3:05	**3:19**	**3:35**	**3:58**
3:35	**3:49**	**4:05**	**4:28**
4:05	**4:19**	**4:35**	**4:58**
4:35	**4:49**	**5:05**	**5:28**
5:05	**5:19**	**5:35**	**5:58**
5:35	**5:49**	**6:05**	**6:28**
6:05	**6:19**	**6:35**	**6:58**
6:35	**6:49**	**7:05**	**7:28**
7:05	**7:19**	**a 7:30**	.....
7:35	**7:49**	**8:05**	**8:28**
8:35	**8:49**	**9:05**	**9:28**
9:35	**9:49**	**10:05**	**10:28**
10:35	**10:49**	**11:05**	**11:28**
11:35	**11:49**	12:05A	12:28A

OUTBOUND

Leave Wonderland	Leave Central Square	Arrive Vinnin Square	Arrive Salem Depot
.....	a 5:30A	5:44A	5:54A
.....	a 6:00	6:14	6:24
.....	a 6:30	6:44	6:54
6:35A	7:00	7:16	7:30
7:05	7:30	7:46	8:00
7:35	8:00	8:16	8:30
8:05	8:30	8:46	9:00
8:35	9:00	9:16	9:30
9:05	9:30	9:46	10:00
9:35	10:00	10:16	10:30
10:05	10:30	10:46	11:00
10:35	11:00	11:16	11:30
11:05	11:30	11:46	12:00N
11:35	12:00N	12:16P	12:30P
12:05P	**12:30P**	**12:46P**	**1:00P**
12:35	**1:00**	**1:16**	**1:30**
1:05	**1:30**	**1:46**	**2:00**
1:35	**2:00**	**2:16**	**2:30**
2:05	**2:30**	**2:46**	**3:00**
2:35	**3:00**	**3:16**	**3:30**
3:05	**3:30**	**3:46**	**4:00**
3:35	**4:00**	**4:16**	**4:30**
4:05	**4:30**	**4:46**	**5:00**
4:35	**5:00**	**5:16**	**5:30**
5:05	**5:30**	**5:46**	**6:00**
5:35	**6:00**	**6:16**	**6:30**
6:05	**6:30**	**6:46**	**7:00**
6:35	**7:00**	**7:16**	**7:30**
7:35	**8:00**	**8:16**	**8:30**
8:35	**9:00**	**9:16**	**9:30**
9:35	**10:00**	**10:16**	**10:30**
10:35	**11:00**	**11:16**	**11:30**
c 11:25	12:02A	12:18A	12:32A

WEEKEND NOTE:
THIS ROUTE DOES NOT SERVICE SHETLAND OFFICE PARK

ALL BUSES ARE ACCESSIBLE TO PERSONS WITH DISABILITIES.

Route 455/455W/459
Salem Depot - Haymarket, Downtown Crossing or Wonderland Sta. via Loring Ave., Central Sq., Lynn & Western Ave.

455W SUNDAY

INBOUND

Leave Salem Depot	Arrive Vinnin Square	Leave Central Square	Arrive Wonderland
7:05A	7:19A	7:35A	7:58A
8:05	8:19	8:35	8:58
9:05	9:19	9:35	9:58
10:05	10:19	10:35	10:58
11:05	11:19	11:35	11:58
12:05P	**12:19P**	**12:35P**	**12:58P**
1:05	**1:19**	**1:35**	**1:58**
2:05	**2:19**	**2:35**	**2:58**
3:05	**3:19**	**3:35**	**3:58**
4:05	**4:19**	**4:35**	**4:58**
5:05	**5:19**	**5:35**	**5:58**
6:05	**6:19**	**6:35**	**6:58**
7:05	**7:19**	**7:35**	**7:58**
8:05	**8:19**	**8:35**	**8:58**
9:05	**9:19**	**9:35**	**9:58**
10:05	**10:19**	**10:35**	**10:58**
a 11:05	**11:22**	**11:35**	.....
11:30	**11:44**	12:00M	12:23A

OUTBOUND

Leave Wonderland Station	Leave Central Square	Arrive Vinnin Square	Arrive Salem Depot
.....	a 6:30A	6:44A	6:54A
.....	a 7:00	7:14	7:24
8:05A	8:30	8:44	8:54
9:05	9:30	9:44	9:54
10:05	10:30	10:44	10:54
11:05	11:30	11:44	11:54
12:05P	**12:30P**	**12:44P**	**12:54P**
1:05	**1:30**	**1:44**	**1:54**
2:05	**2:30**	**2:44**	**2:54**
3:05	**3:30**	**3:44**	**3:54**
4:05	**4:30**	**4:44**	**4:54**
5:05	**5:30**	**5:44**	**5:54**
6:05	**6:30**	**6:44**	**6:54**
7:05	**7:30**	**7:44**	**7:54**
8:05	**8:30**	**8:44**	**8:54**
9:05	**9:30**	**9:44**	**9:54**
10:05	**10:30**	**10:44**	**10:54**
10:58	**11:23**	**11:37**	**11:47**

FARES

Paying with	Local	Inner X-bus trip	Inner X-bus + local bus trip	Inner X-bus + subway trip
CharlieCard	$1.25	**$2.80**	$2.80	$2.80
CharlieTicket	$1.50	**$3.50**	$5.00	$5.50
Cash onboard	$1.50	**$3.50**	$5.00	$5.50
Student CharlieCard*	$0.60	**$1.40**	$1.40	$1.40
Senior/TAP CharlieCard**	$0.40	**$1.40**	$1.40	$1.40

Children 11 and under ride free when accompanied by an adult.
Blind Access CharlieCard customers ride free. If accompanied by sighted guide guide also rides free

VALID PASSES: Inner Express Bus Pass ($89/mo.), Outer Express Bus Pass ($129/mo.), Commuter Boat Pass ($198/mo), and Commuter Rail Zone 1-6 passes.

* Available to students through participating middle schools and high schools.
** Available to Medicare cardholders, seniors 65+, and persons with disabilities

Local bus fare applies if your trip does not cross the Tobin Bridge or Boston Harbor.

Spring 2012 Holidays

April 16: See Saturday   May 28: See Sunday

FARES

Orange Line, Blue Line, Green Line, Red Line, Mattapan High Speed Line & Silver Line SL1 & SL2

Fares apply to all stops, inbound & outbound, including all surface stops.

PAYING WITH...	SUBWAY TRIP	LOCAL BUS + SUBWAY
CharlieCard	$1.70	$1.70
CharlieTicket	$2.00	$3.50
Cash onboard	$2.00	$3.50
T Pupil Badge*	85¢	85¢
Senior/TAP card**	60¢	60¢

VALID PASSES: LinkPass ($59/mo.); StudentPass* ($20/mo.); Senior/TAP Pass** ($20/mo.); and express bus, zoned, and boat passes

Local Bus and Silver Line SL4 &SL5

PAYING WITH...	1-BUS TRIP	2-BUS TRIP	BUS + SUBWAY TRIP
CharlieCard	$1.25	$1.25	$1.70
CharlieTicket	$1.50	$1.50	$3.50***
Cash onboard	$1.50	$3.00	$3.50***
T Pupil Badge*	60¢	60¢	85¢
Senior/TAP card**	40¢	40¢	60¢

VALID PASSES: Local Bus Pass ($40/mo.); LinkPass ($59/mo.); StudentPass* ($20/mo.) Senior/TAP Pass** ($20/mo.); and express bus zoned interzoned and boat passes

FREE FARES

Children 11 and under ride free when accompanied by an adult.
Blind persons ride free with MBTA Blind Access card or Mass. Comm. for the Blind ID card.

TRANSFERS

If paying with a CharlieTicket or CharlieCard, discounted transfers that are available are automatic — just use the same ticket or card throughout your trip. If paying with cash onboard a vehicle, free transfers are only allowed between rapid transit lines, *and* in either of the following cases you must ask for a transfer ticket from the operator before paying your fare:

- Boarding Silver Line SL4 or SL5 and transferring to other rapid transit.
- Boarding at a surface stop on the Green Line or Silver Line, or at Science Park station; *and* transferring to Silver Line SL4 or SL5 later in your trip.

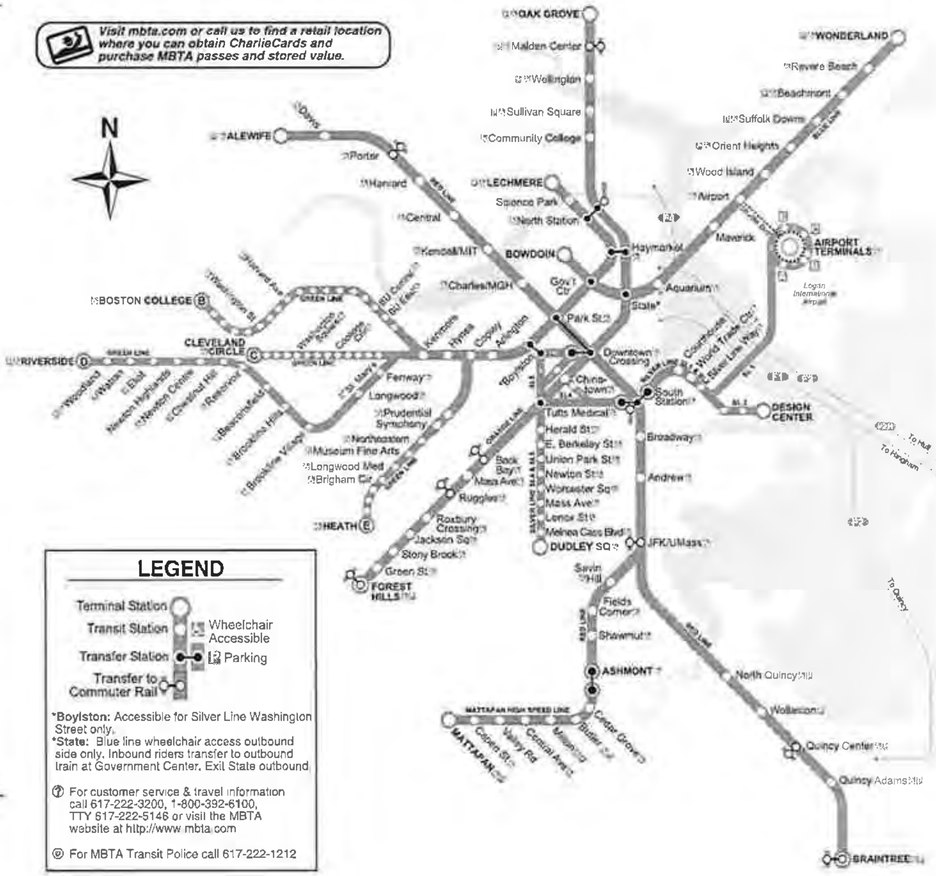
Free transfers between the Mattapan High Speed Line and the Red Line at Ashmont.

* Available to students through participating middle schools and high schools
** Available to Medicare cardholders, seniors 65+, and persons with disabilities
*** For Silver Line SL4 or SL5 with subway transfer, pay $2.00. Also see "transfers."

SCHEDULES

Schedules are available at the following stations: Park Street, Airport, Malden, Harvard, Government Center (Green Line Level), Back Bay, Downtown Crossing (Orange Line Level), and Quincy Center, or ask a Customer Service Agent. Schedules are also available at Boston City Hall, the State Transportation Building Library (10 Park Plaza), 45 High St, and online at mbta.com.

Visit mbta.com or call us to find a retail location where you can obtain CharlieCards and purchase MBTA passes and stored value.



LEGEND

Terminal Station
Transit Station
Transfer Station
Transfer to Commuter Rail
Wheelchair Accessible
Parking

*Boylston: Accessible for Silver Line Washington Street only.
*State: Blue line wheelchair access outbound side only. Inbound riders transfer to outbound train at Government Center. Exit State outbound.

For customer service & travel information call 617-222-3200, 1-800-392-6100, TTY 617-222-5146 or visit the MBTA website at http://www.mbta.com

For MBTA Transit Police call 617-222-1212

RAPID TRANSIT

SUMMER June 26, 2010 - September 3, 2010

Customer Service/Travel Info 617-222-3200
Toll Free............................1-800-392-6100
Hearing Impaired (TTY)..........617-222-5146

For more schedule or travel information, visit: **www.mbta.com**

Richard A. Davey, General Manager and Rail & Transit Administrator

Massachusetts Bay Transportation Authority

massDOT

RAPID TRANSIT LINE

WEEKDAY

RAPID TRANSIT LINE	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
RED LINE						
LV ALEWIFE LV BRAINTREE	5:24AM 5:15AM	9 MINS 9 MINS	13 MINS 13 MINS	12 MINS 12 MINS	12 MINS 12 MINS	12:15AM 12:18AM
LV ALEWIFE LV ASHMONT	5:16AM 5:16AM	9 MINS 9 MINS	13 MINS 13 MINS	12 MINS 12 MINS	12 MINS 12 MINS	12:22AM 12:30AM
"M" LV ASHMONT LV MATTAPAN	5:17AM 5:05AM	5 MINS 5 MINS	8 MINS 8 MINS	12 MINS 12 MINS	12 MINS 12 MINS	1:05AM 12:53AM
BLUE LINE LV WONDERLAND LV ORIENT HEIGHTS LV GOV'T CENTER	5:13AM 5:13AM 5:30AM	5 MINS 5 MINS 5 MINS	9 MINS 9 MINS 9 MINS	9 MINS 9 MINS 9 MINS	13 MINS 13 MINS 13 MINS	12:26AM 12:31AM 12:49AM
ORANGE LINE LV OAK GROVE LV FOREST HILLS	5:16AM 5:16AM	5 MINS 5 MINS	8 MINS 8 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:30AM 12:35AM
GREEN LINE						
"B" LV BOSTON COLLEGE LV GOVERNMENT CTR.	5:01AM 5:39AM	6 MINS 6 MINS	9 MINS 9 MINS	10 MINS 10 MINS	11 MINS 11 MINS	12:10AM 12:52AM
"C" LV CLEVELAND CIR. LV NORTH STATION	5:01AM* 5:55AM	7 MINS 7 MINS	10 MINS 10 MINS	7 MINS 7 MINS	14 MINS 14 MINS	12:10AM 12:46AM
"D" LV RIVERSIDE LV GOVERNMENT CTR.	4:56AM 5:34AM	6 MINS 6 MINS	11 MINS 11 MINS	10 MINS 10 MINS	13 MINS 13 MINS	12:05AM 12:47AM
"E" LV LECHMERE LV HEATH STREET	5:01AM 5:30AM	6 MINS 6 MINS	8 MINS 8 MINS	10 MINS 10 MINS	14 MINS 14 MINS	12:30AM 12:45AM

SATURDAY

RAPID TRANSIT LINE	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
RED LINE						
LV ALEWIFE LV BRAINTREE	5:24AM 5:15AM	14 MINS 14 MINS	14 MINS 14 MINS	14 MINS 14 MINS	14 MINS 14 MINS	12:15AM 12:18AM
LV ALEWIFE LV ASHMONT	5:16AM 5:16AM	14 MINS 14 MINS	14 MINS 14 MINS	14 MINS 14 MINS	14 MINS 14 MINS	12:22AM 12:30AM
"M" LV ASHMONT LV MATTAPAN	5:15AM 5:05AM	11 MINS 11 MINS	11 MINS 11 MINS	11 MINS 11 MINS	11 MINS 11 MINS	1:05AM 12:50AM
BLUE LINE LV WONDERLAND LV ORIENT HEIGHTS LV GOV'T CENTER	5:25AM 5:13AM 5:28AM	9 MINS 9 MINS 9 MINS	9 MINS 9 MINS 9 MINS	9 MINS 9 MINS 9 MINS	13 MINS 13 MINS 13 MINS	12:26AM 12:31AM 12:49AM
ORANGE LINE LV OAK GROVE LV FOREST HILLS	5:16AM 5:16AM	10 MINS 10 MINS	8 MINS 8 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:30AM 12:35AM
GREEN LINE						
"B" LV BOSTON COLLEGE LV GOVERNMENT CTR.	4:45AM* 5:35AM	7 MINS 7 MINS	6 MINS 6 MINS	7 MINS 7 MINS	11 MINS 11 MINS	12:10AM 12:50AM
"C" LV CLEVELAND CIR. LV NORTH STATION	4:50AM* 5:30AM	10 MINS 10 MINS	8 MINS 8 MINS	8 MINS 8 MINS	10 MINS 10 MINS	12:10AM 12:50AM
"D" LV RIVERSIDE LV GOVERNMENT CTR.	4:55AM 5:34AM	10 MINS 10 MINS	8 MINS 8 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:00AM 12:47AM
"E" LV LECHMERE LV HEATH STREET	5:01AM 5:30AM	10 MINS 10 MINS	7 MINS 7 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:30AM 12:45AM

SUNDAY

RAPID TRANSIT LINE	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
RED LINE						
LV ALEWIFE LV BRAINTREE	6:08AM 6:00AM	16 MINS 16 MINS	16 MINS 16 MINS	16 MINS 16 MINS	16 MINS 16 MINS	12:14AM 12:18AM
LV ALEWIFE LV ASHMONT	6:00AM 6:00AM	16 MINS 16 MINS	16 MINS 16 MINS	16 MINS 16 MINS	16 MINS 16 MINS	12:22AM 12:30AM
"M" LV ASHMONT LV MATTAPAN	5:59AM 5:51AM	11 MINS 11 MINS	11 MINS 11 MINS	11 MINS 11 MINS	11 MINS 11 MINS	1:05AM 12:53AM
BLUE LINE LV WONDERLAND LV ORIENT HEIGHTS LV GOV'T CENTER	5:58AM 6:03AM 6:21AM	13 MINS 13 MINS 13 MINS	9 MINS 9 MINS 9 MINS	9 MINS 9 MINS 9 MINS	13 MINS 13 MINS 13 MINS	12:26AM 12:31AM 12:49AM
ORANGE LINE LV OAK GROVE LV FOREST HILLS	6:00AM 6:00AM	13 MINS 13 MINS	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:30AM 12:35AM
GREEN LINE						
"B" LV BOSTON COLLEGE LV GOVERNMENT CTR.	5:20AM* 6:06AM	10 MINS 10 MINS	9 MINS 9 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:10AM 12:48AM
"C" LV CLEVELAND CIR. LV NORTH STATION	5:30AM* 6:06AM	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:10AM 12:48AM
"D" LV RIVERSIDE LV GOVERNMENT CTR.	5:25AM 6:04AM	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:00AM 12:45AM
"E" LV LECHMERE LV HEATH STREET	5:35AM 6:15AM	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12:30AM 12:47AM

★ The first 2 "C" Line AM inbound trips run through to Lechmere Station on Weekdays ★ The first "B" Line and the second "C" Line AM inbound trips run through to Lechmere Station on Saturday and Sunday

SILVER LINE — WEEKDAY

SILVER LINE	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
SL1 LV LOGAN AIRPORT LV SOUTH STATION	5:38AM 5:40AM	10 MINS 10 MINS	10 MINS 10 MINS	10 MINS 10 MINS	12 MINS 12 MINS	12:45AM 12:30AM
SL2 LV DESIGN CENTER LV SOUTH STATION	6:03AM 5:45AM	5 MINS 5 MINS	10 MINS 10 MINS	9 MINS 9 MINS	15 MINS 15 MINS	12:30AM 12:50AM
Additional Waterfront-only service LV SILVER LINE WAY LV SOUTH STATION	5:28AM 5:35AM	5 MINS 5 MINS	Use SL1/SL2			12:55AM
SL4 LV DUDLEY STATION LV SOUTH STATION	5:20AM 5:40AM	10 MINS 10 MINS	15 MINS 15 MINS	15 MINS 15 MINS	20 MINS 20 MINS	12:20AM 12:40AM
SL5 LV DUDLEY STATION DOWNTOWN CROSSING	5:15AM 5:30AM	7 MINS 7 MINS	10 MINS 10 MINS	8 MINS 8 MINS	15 MINS 15 MINS	12:46AM 1:02AM

SILVER LINE — SATURDAY

SILVER LINE	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
SL1 LV LOGAN AIRPORT LV SOUTH STATION	5:33AM 5:35AM	12 MINS 12 MINS	12 MINS 12 MINS	12 MINS 12 MINS	12 MINS 12 MINS	12:45AM 12:30AM
SL2 LV DESIGN CENTER LV SOUTH STATION	6:10AM 5:50AM	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	12:35AM 12:48AM
Additional Waterfront-only service LV SILVER LINE WAY LV SOUTH STATION	5:28AM	Use SL1/SL2				12:52AM
SL4 LV DUDLEY STATION LV SOUTH STATION	5:20AM 5:40AM	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	20 MINS 20 MINS	12:20AM 12:40AM
SL5 LV DUDLEY STATION DOWNTOWN CROSSING	5:19AM 5:34AM	9 MINS 9 MINS	9 MINS 9 MINS	11 MINS 11 MINS	11 MINS 11 MINS	12:46AM 1:00AM

SILVER LINE — SUNDAY

SILVER LINE	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
SL1 LV LOGAN AIRPORT LV SOUTH STATION	5:50AM 6:12AM	12 MINS 12 MINS	8 MINS 8 MINS	8 MINS 8 MINS	8 MINS 8 MINS	12:45AM 12:30AM
SL2 LV DESIGN CENTER LV SOUTH STATION	6:50AM 6:35AM	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	12:34AM 12:48AM
Additional Waterfront-only service LV SILVER LINE WAY LV SOUTH STATION	6:05AM	Use SL1/SL2				1:00AM
SL4 LV DUDLEY STATION LV SOUTH STATION	6:00AM 6:20AM	15 MINS 15 MINS	15 MINS 15 MINS	15 MINS 15 MINS	20 MINS 20 MINS	12:20AM 12:40AM
SL5 LV DUDLEY STATION DOWNTOWN CROSSING	6:00AM 6:15AM	10 MINS 10 MINS	8 MINS 8 MINS	9 MINS 9 MINS	9 MINS 9 MINS	12:25AM 12:47AM

Blue Line Note:
Weekdays the Last train to Bowdoin Station arrives at 6:12PM and the Last train departs Bowdoin Station at 6:18PM.
NO service to/from Bowdoin Station all day Saturday and Sunday.

Schedule Periods Note:

Rush Hour AM: approx. 6:30AM - 9:00AM

Midday: approx. 9:00AM - 3:30PM

Rush Hour PM: approx. 3:30PM - 6:30PM

Evening: approx. 6:30PM - 8:00PM

Late Night: approx. 8:00PM - Close

Winter 2012 Holidays

January 2 - See Sunday
January 16 - See Saturday
February 20 - See Saturday

RAPID TRANSIT LINE	WEEKDAY						SATURDAY						SUNDAY					
	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
RED LINE																		
LV ALEWIFE LV BRAINTREE	5:24AM 5:15AM	9 MINS. 9 MINS.	13 MINS. 13 MINS.	12 MINS. 12 MINS.	12 MINS. 12 MINS.	12:15AM 12:18AM	5:24AM 5:15AM	14 MINS. 14 MINS.	14 MINS. 14 MINS.	14 MINS. 14 MINS.	14 MINS. 14 MINS.	12:15AM 12:13AM	6:08AM 6:00AM	16 MINS. 16 MINS.	16 MINS. 16 MINS.	16 MINS. 16 MINS.	16 MINS. 16 MINS.	12:14AM 12:18AM
LV ALEWIFE LV ASHMONT	5:16AM 5:16AM	9 MINS. 9 MINS.	13 MINS. 13 MINS.	12 MINS. 12 MINS.	12 MINS. 12 MINS.	12:22AM 12:30AM	5:16AM 5:16AM	14 MINS. 14 MINS.	14 MINS. 14 MINS.	14 MINS. 14 MINS.	14 MINS. 14 MINS.	12:22AM 12:30AM	6:00AM 6:00AM	16 MINS. 16 MINS.	16 MINS. 16 MINS.	16 MINS. 16 MINS.	16 MINS. 16 MINS.	12:22AM 12:30AM
"M" LV ASHMONT LV MATTAPAN	5:17AM 5:05AM	5 MINS. 5 MINS.	8 MINS. 8 MINS.	12 MINS. 12 MINS.	12 MINS. 12 MINS.	1:05AM 12:53AM	5:15AM 5:05AM	11 MINS. 11 MINS.	11 MINS. 11 MINS.	11 MINS. 11 MINS.	11 MINS. 11 MINS.	1:05AM 12:50AM	5:59AM 5:51AM	11 MINS. 11 MINS.	11 MINS. 11 MINS.	11 MINS. 11 MINS.	11 MINS. 11 MINS.	1:05AM 12:53AM
BLUE LINE																		
LV WONDERLAND LV ORIENT HEIGHTS LV GOV'T CENTER	5:13AM 5:13AM 5:30AM	5 MINS. 5 MINS. 5 MINS.	9 MINS. 9 MINS. 9 MINS.	9 MINS. 9 MINS. 9 MINS.	13 MINS. 13 MINS. 13 MINS.	12:26AM 12:31AM 12:49AM	5:25AM 5:13AM 5:29AM	9 MINS. 9 MINS. 9 MINS.	9 MINS. 9 MINS. 9 MINS.	9 MINS. 9 MINS. 9 MINS.	13 MINS. 13 MINS. 13 MINS.	12:26AM 12:31AM 12:49AM	5:58AM 6:03AM 6:21AM	13 MINS. 13 MINS. 13 MINS.	9 MINS. 9 MINS. 9 MINS.	9 MINS. 9 MINS. 9 MINS.	13 MINS. 13 MINS. 13 MINS.	12:26AM 12:31AM 12:49AM
ORANGE LINE																		
LV OAK GROVE LV FOREST HILLS	5:16AM 5:16AM	5 MINS. 5 MINS.	8 MINS. 8 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:30AM 12:35AM	5:16AM 5:16AM	10 MINS. 10 MINS.	8 MINS. 8 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:30AM 12:35AM	6:00AM 6:00AM	13 MINS. 13 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:30AM 12:35AM
GREEN LINE																		
"B" LV BOSTON COLLEGE LV GOVERNMENT CTR.	5:01AM 5:39AM	6 MINS. 6 MINS.	9 MINS. 9 MINS.	10 MINS. 10 MINS.	11 MINS. 11 MINS.	12:10AM 12:52AM	4:45AM* 5:35AM	7 MINS. 7 MINS.	6 MINS. 6 MINS.	7 MINS. 7 MINS.	11 MINS. 11 MINS.	12:10AM 12:50AM	5:20AM* 6:06AM	10 MINS. 10 MINS.	9 MINS. 9 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:10AM 12:48AM
"C" LV CLEVELAND CIR. LV NORTH STATION	5:01AM* 5:55AM	7 MINS. 7 MINS.	10 MINS. 10 MINS.	7 MINS. 7 MINS.	14 MINS. 14 MINS.	12:10AM 12:46AM	4:50AM* 5:30AM	10 MINS. 10 MINS.	8 MINS. 8 MINS.	8 MINS. 8 MINS.	10 MINS. 10 MINS.	12:10AM 12:50AM	5:30AM* 6:06AM	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:10AM 12:48AM
"D" LV RIVERSIDE LV GOVERNMENT CTR.	4:56AM 5:34AM	6 MINS. 6 MINS.	11 MINS. 11 MINS.	10 MINS. 10 MINS.	13 MINS. 13 MINS.	12:05AM 12:47AM	4:55AM 5:34AM	10 MINS. 10 MINS.	8 MINS. 8 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:00AM 12:47AM	5:25AM 6:04AM	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:00AM 12:45AM
"E" LV LECHMERE LV HEATH STREET	5:01AM 5:30AM	6 MINS. 6 MINS.	8 MINS. 8 MINS.	10 MINS. 10 MINS.	14 MINS. 14 MINS.	12:30AM 12:45AM	5:01AM 5:30AM	10 MINS. 10 MINS.	7 MINS. 7 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:30AM 12:45AM	5:35AM 6:15AM	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12:30AM 12:47AM

* The first 2 "C" Line AM inbound trips run through to Lechmere Station on Weekdays * The first "B" Line and the second "C" Line AM inbound trips run through to Lechmere Station on Saturday and Sunday

SILVER LINE	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
SL1 LV LOGAN AIRPORT LV SOUTH STATION	5:38AM 5:40AM	10 MINS. 10 MINS.	10 MINS. 10 MINS.	10 MINS. 10 MINS.	12 MINS. 12 MINS.	12:45AM 12:30AM	5:33AM 5:35AM	12 MINS. 12 MINS.	12 MINS. 12 MINS.	12 MINS. 12 MINS.	12 MINS. 12 MINS.	12:45AM 12:30AM	5:50AM 6:12AM	12 MINS. 12 MINS.	8 MINS. 8 MINS.	8 MINS. 8 MINS.	8 MINS. 8 MINS.	12:45AM 12:30AM
SL2 LV DESIGN CENTER LV SOUTH STATION	6:03AM 5:45AM	5 MINS. 5 MINS.	10 MINS. 10 MINS.	9 MINS. 9 MINS.	15 MINS. 15 MINS.	12:30AM 12:50AM	6:10AM 5:50AM	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	12:35AM 12:48AM	6:50AM 6:35AM	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	12:34AM 12:48AM
Additional Waterfront-only service LV SILVER LINE WAY LV SOUTH STATION	5:28AM 5:35AM	5 MINS. 5 MINS.	Use SL1/SL2			12:55AM	5:26AM		Use SL1/SL2			12:52AM	6:05AM		Use SL1/SL2			1:00AM
SL4 LV DUDLEY STATION LV SOUTH STATION	5:20AM 5:40AM	10 MINS. 10 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	20 MINS. 20 MINS.	12:20AM 12:40AM	5:20AM 5:40AM	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	20 MINS. 20 MINS.	12:20AM 12:40AM	6:00AM 6:20AM	15 MINS. 15 MINS.	15 MINS. 15 MINS.	15 MINS. 15 MINS.	20 MINS. 20 MINS.	12:20AM 12:40AM
SL5 LV DUDLEY STATION DOWNTOWN CROSSING	5:15AM 5:30AM	7 MINS. 7 MINS.	10 MINS. 10 MINS.	8 MINS. 8 MINS.	15 MINS. 15 MINS.	12:48AM 1:02AM	5:19AM 5:34AM	9 MINS. 9 MINS.	9 MINS. 9 MINS.	11 MINS. 11 MINS.	11 MINS. 11 MINS.	12:46AM 1:00AM	6:00AM 6:15AM	10 MINS. 10 MINS.	8 MINS. 8 MINS.	9 MINS. 9 MINS.	9 MINS. 9 MINS.	12:25AM 12:47AM

Blue Line Note:

Weekdays the Last train to Bowdoin Station arrives at 6:12PM and the Last train departs Bowdoin Station at 6:18PM.
NO service to/from Bowdoin Station all day Saturday and Sunday.

Schedule Periods Note:

Rush Hour AM: approx. 6:30AM - 9:00AM

Midday: approx. 9:00AM - 3:30PM

Rush Hour PM: approx. 3:30PM - 6:30PM

Evening: approx. 6:30PM - 8:00PM

Late Night: approx. 8:00PM - Close

Winter 2012 Holidays

January 2 - See Sunday
January 16 - See Saturday
February 20 - See Saturday

SPEED DATA

Vanasse & Associates, Inc.
Transportation Engineers & Planners

Job	E. Boston	Job #	6172
Location	At site drive	Date	2/9/2012
Calculated By:	S.R.F.		
Checked By:			

Street: Boardman Street
Direction: Eastbound

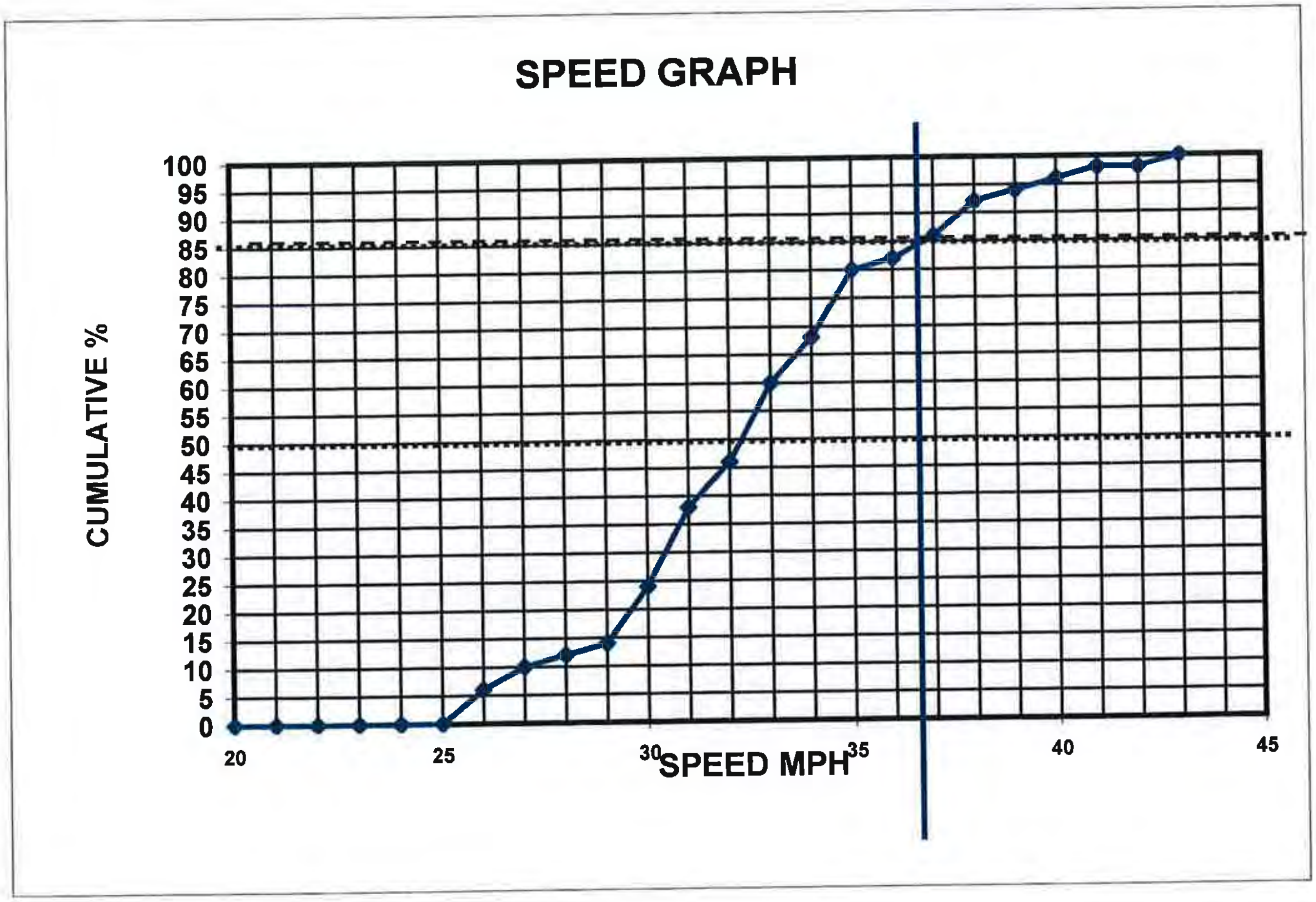
Speed Limit: not posted
Time of Day 1:15 p.m.
Observations 50

Speed	# of Observation	CUM. # Of OBS	% OF TOTAL OBS	CUM %
55				
54				
53				
52				
51				
50				
49				
48				
47				
46				
45				
44				
43	1	1	2	100
42	0	1	0	98
41	1	2	2	98
40	1	3	2	96
39	1	4	2	94
38	3	7	6	92
37	2	9	4	86
36	1	10	2	82
35	6	16	12	80
34	4	20	8	68
33	7	27	14	60
32	4	31	8	46
31	7	38	14	38
30	5	43	10	24
29	1	44	2	14
28	1	45	2	12
27	2	47	4	10
26	3	50	6	6
25				
24				
23				
22				
21				
20				

Average: 32.96
Comments: 85% = 36.8 m.p.h.

Street: Boardman Street
Direction: Eastbound

Job # 6172
Date 2/9/2012



Vanasse & Associates, Inc.
Transportation Engineers & Planners

Job	E. Boston	Job #	6172
Location	At site drive	Date	2/9/2012
Calculated By:	S.R.F.		
Checked By:			

Street: Boardman Street
Direction: Westbound

Speed Limit: not posted
Time of Day 1:15 p.m.
Observations 50

Speed	# of Observation	CUM. # Of OBS	% OF TOTAL OBS	CUM %
55				
54				
53				
52				
51				
50				
49				
48				
47				
46				
45				
44				
43				
42	1	1	2	100
41	0	1	0	98
40	1	2	2	98
39	0	2	0	96
38	0	2	0	96
37	6	8	12	96
36	6	14	12	84
35	4	18	8	72
34	3	21	6	64
33	6	27	12	58
32	5	32	10	46
31	4	36	8	36
30	5	41	10	28
29	4	45	8	18
28	2	47	4	10
27	0	47	0	6
26	0	47	0	6
25	2	49	4	6
24	1	50	2	2
23				
22				
21				
20				

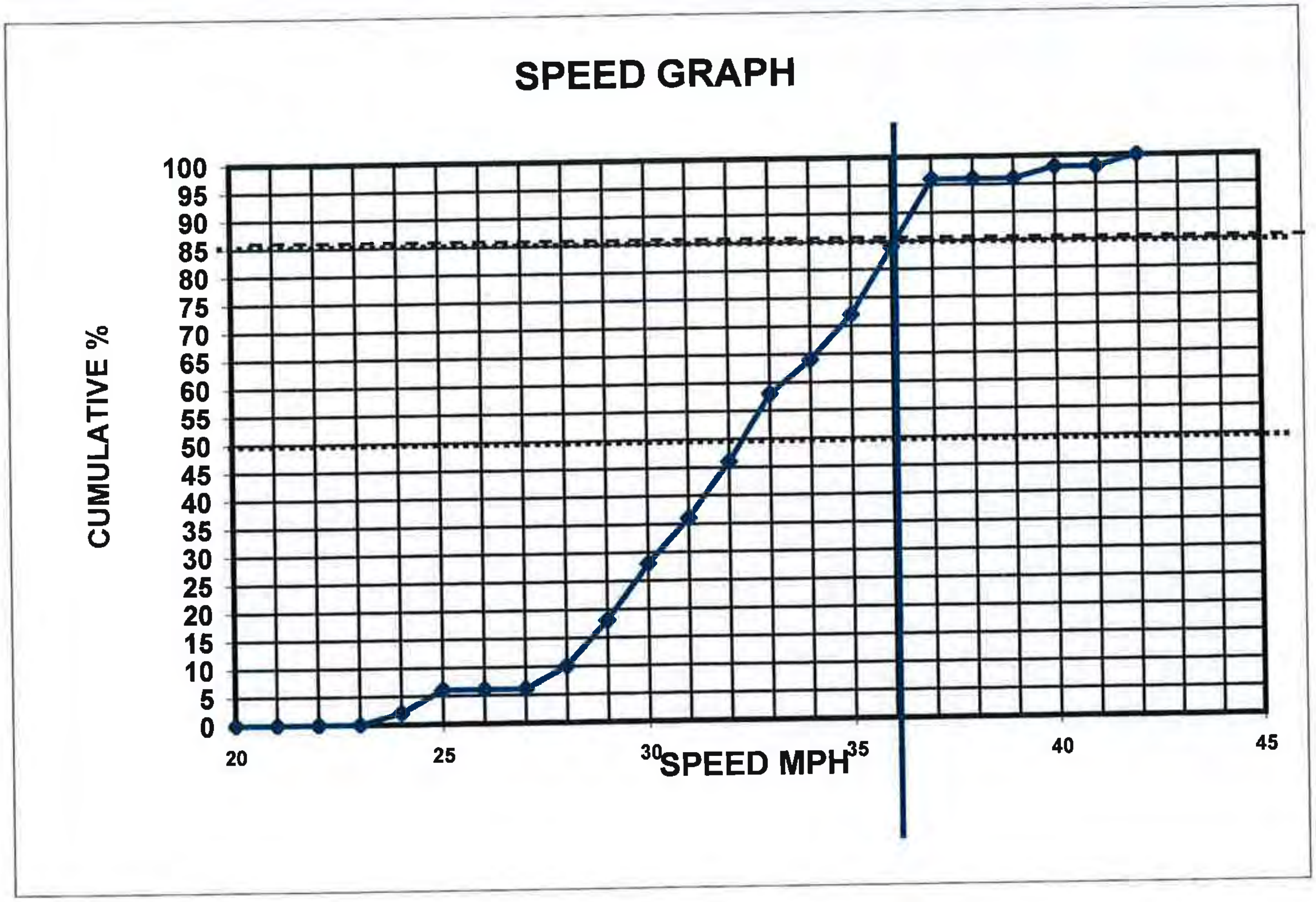
Average: 32.8
Comments: 85% = 36.1 m.p.h.

Street: Boardman Street

Direction: Westbound

Job # 6172

Date 2/9/2012



617201wb

Vanasse & Associates, Inc.
Transportation Engineers & Planners

Job	E. Boston	Job #	6172
Location	At site drive	Date	2/15/2011
Calculated By:	S.R.F.		
Checked By:			

Street: Route 1A
Direction: Northbound

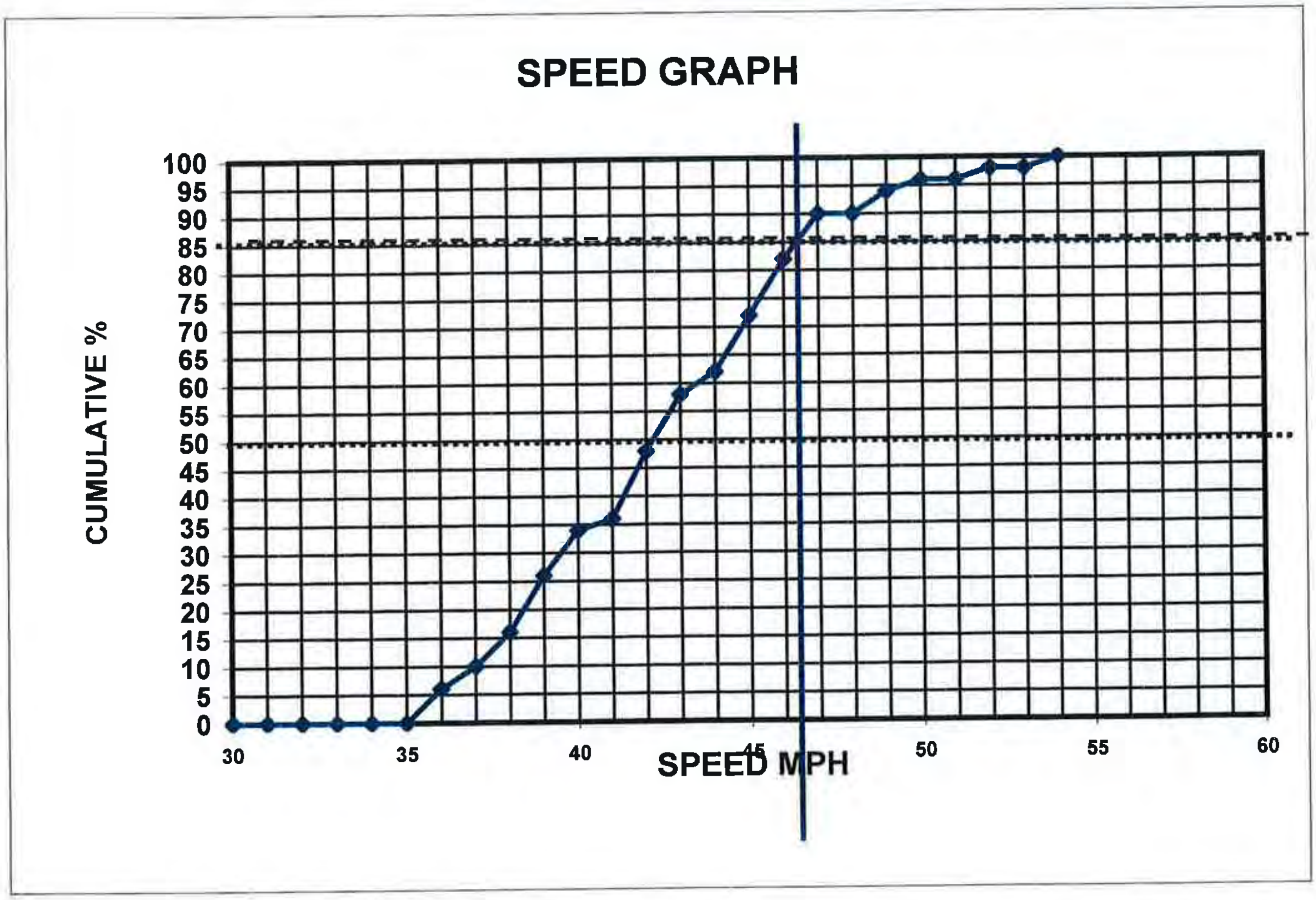
Speed Limit: 45
Time of Day 1:00 p.m.
Observations 50

Speed	# of Observation	CUM. # Of OBS	% OF TOTAL OBS	CUM %
55				
54	1	1	2	100
53	0	1	0	98
52	1	2	2	98
51	0	2	0	96
50	1	3	2	96
49	2	5	4	94
48	0	5	0	90
47	4	9	8	90
46	5	14	10	82
45	5	19	10	72
44	2	21	4	62
43	5	26	10	58
42	6	32	12	48
41	1	33	2	36
40	4	37	8	34
39	5	42	10	26
38	3	45	6	16
37	2	47	4	10
36	3	50	6	6
35				
34				
33				
32				
31				
30				
29				
28				
27				
26				
25				
24				
23				
22				
21				
20				

Average: 42.88
Comments: 85% = 46.4 m.p.h.

Street: Route 1A
Direction: Northbound

Job # 6172
Date 2/15/2011



Vanasse & Associates, Inc.
Transportation Engineers & Planners

Job	E. Boston	**Job #**	6172
Location	At site drive	**Date**	2/15/2012
Calculated By:	S.R.F.		
Checked By:			

Street:	Route 1A	**Speed Limit:**	40
Direction:	Southbound	**Time of Day**	1:00 p.m.
		Observations	50

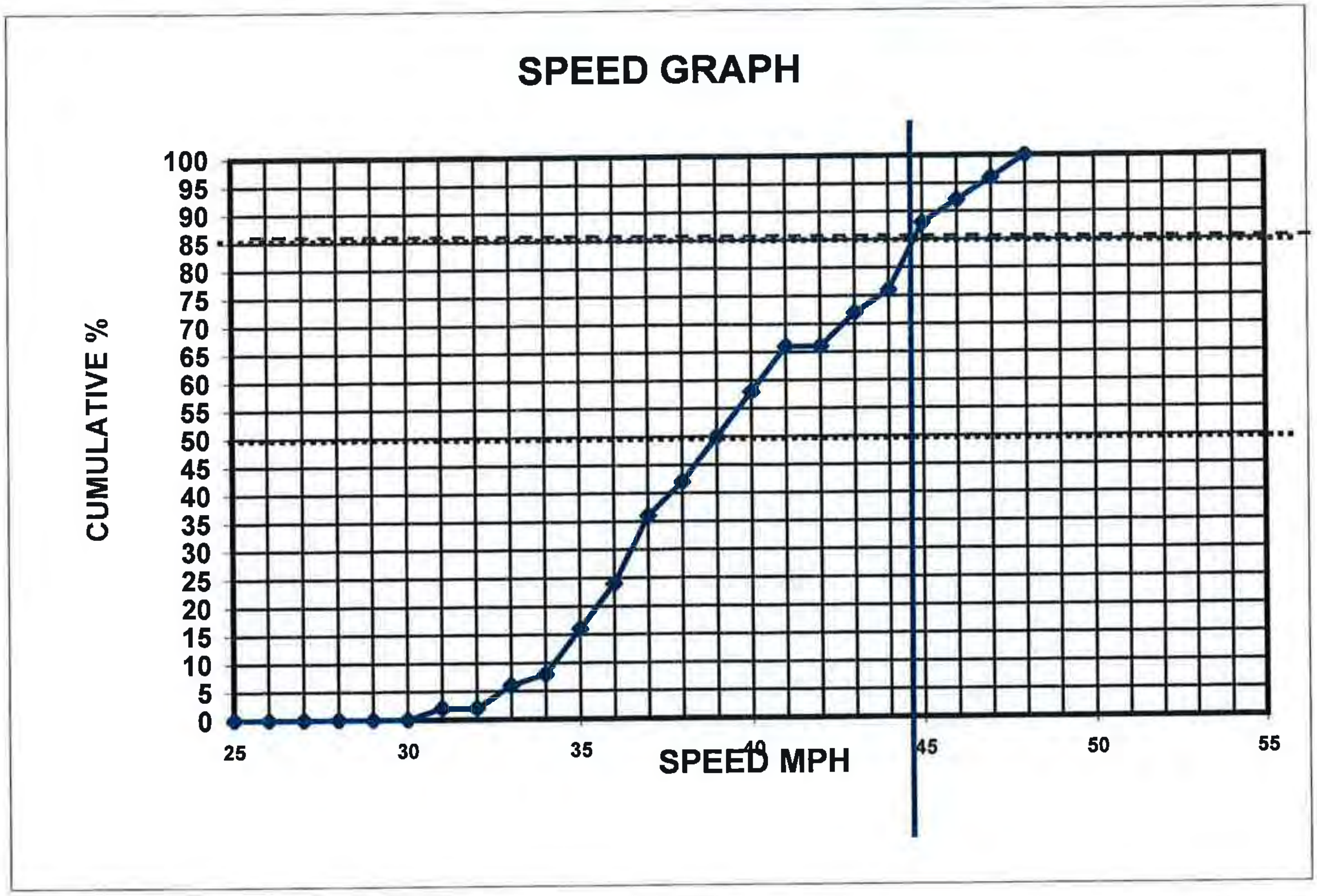
Speed	# of Observation	CUM. # Of OBS	% OF TOTAL OBS	CUM %
55				
54				
53				
52				
51				
50				
49				
48	2	2	4	100
47	2	4	4	96
46	2	6	4	92
45	6	12	12	88
44	2	14	4	76
43	3	17	6	72
42	0	17	0	66
41	4	21	8	66
40	4	25	8	58
39	4	29	8	50
38	3	32	6	42
37	6	38	12	36
36	4	42	8	24
35	4	46	8	16
34	1	47	2	8
33	2	49	4	6
32	0	49	0	2
31	1	50	2	2
30				
29				
28				
27				
26				
25				
24				
23				
22				
21				
20				

Average: 40

Comments: 85% = 44.8 m.p.h.

Street: Route 1A
Direction: Southbound

Job # 6172
Date 2/15/2012



MASSDOT CRASH RATE WORKSHEETS

Moving Massachusetts Forward.
massDOT
Highway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : **Boston** COUNT DATE : Feb-12

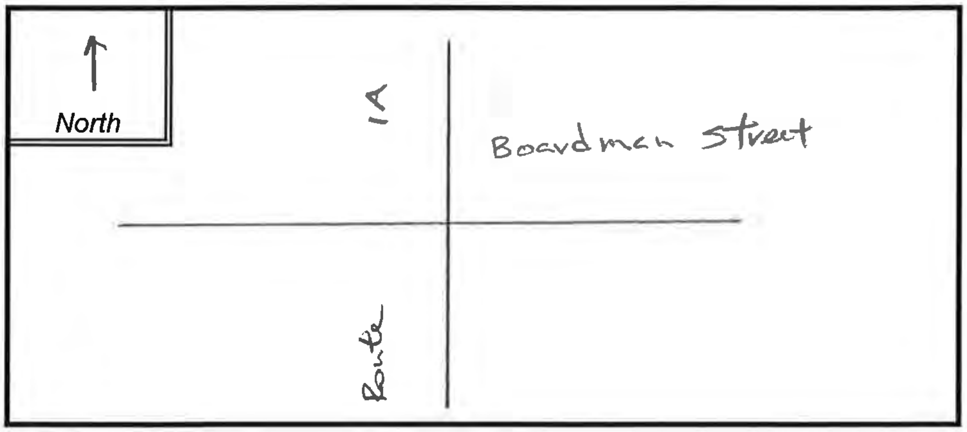
DISTRICT : 6 UNSIGNALIZED : SIGNALIZED : **X**

~ INTERSECTION DATA ~

MAJOR STREET : Route 1A

MINOR STREET(S) : Boardman Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	210	438	2,017	1,624		4,289

"K" FACTOR : **0.090** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **47,656**

TOTAL # OF CRASHES : 10 # OF YEARS : 3 AVERAGE # OF CRASHES PER YEAR (**A**) : **3.33**

CRASH RATE CALCULATION : 0.19 RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 crash rate

Project Title & Date: Proposed Commerical Development - 3/22/12

Moving Massachusetts Forward.
massDOT Highway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : **Boston** COUNT DATE : Feb-12

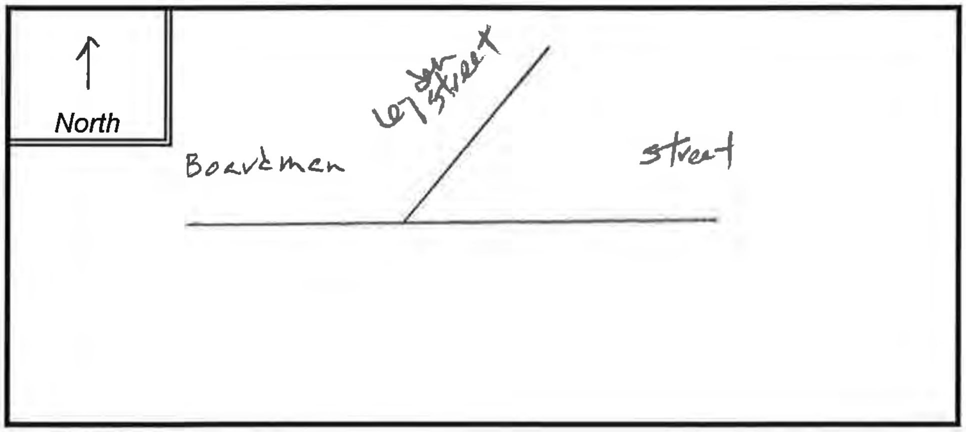
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Boardman Street

MINOR STREET(S) : Leyden Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	316	406		37		**759**

" K " FACTOR : **0.090** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **8,433**

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 crash rate

Project Title & Date: Proposed Commrical Development - 3/22/12 massDOT Highway — Moving Massachusetts Forward.

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Boston

COUNT DATE : Feb-12

DISTRICT : 6

UNSIGNALIZED : X

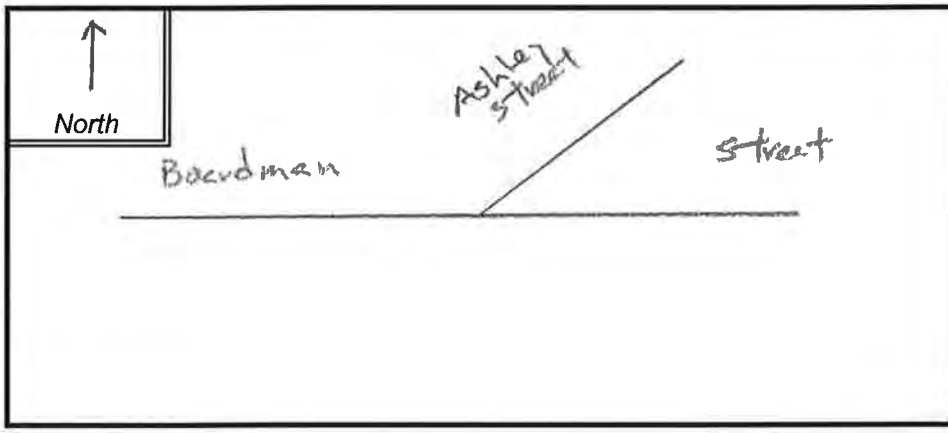
SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Boardman Street

MINOR STREET(S) : Ashley Street

INTERSECTION DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	419	333		27		779

"K" FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **8,656**

TOTAL # OF CRASHES : 1

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.11**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : Below District 6 crash rate

Project Title & Date: Proposed Commerical Development - 3/22/12

Moving Massachusetts Forward. massDOT Highway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : **Boston** COUNT DATE : Feb-12

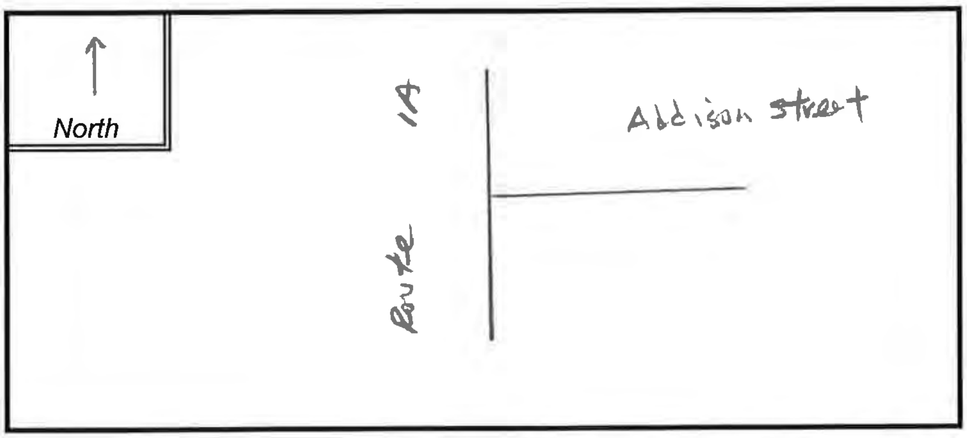
DISTRICT : 6 UNSIGNALIZED : **X** SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Route 1A

MINOR STREET(S) : Addision Street

INTERSECTION DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :		16	2,185			2,201

" K " FACTOR : **0.090** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **24,456**

TOTAL # OF CRASHES : 1 # OF YEARS : 3 AVERAGE # OF CRASHES PER YEAR (**A**) : **0.33**

CRASH RATE CALCULATION : **0.04** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below District 6 crash rate

Project Title & Date: Proposed Commerical Development - 3/22/12

GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth

STA.	CITY/TOWN	ROUTE/STREET	LOCATION	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Annual Growth Rate
8008	BOSTON (EAST BOSTON)	PORTER ST.	BTWN. BREMEN AND ORLEANS STS.		7,200	7,300		6,500			6,000			-2.85%
8009	BOSTON (EAST BOSTON)	SARATOGA ST.	WEST OF BOARDMAN ST.			8,700			6,600			5,900		-6.24%
														-4.55%

TRIP-GENERATION CALCULATIONS

Institute of Transportation Engineers (ITE)
Trip Generation, 8th Edition
Land Use Code (LUC) 311 - All Suites Hotel

Average Vehicle Trips Ends vs: Occupied Rooms
Independent Variable (X): 177

AVERAGE WEEKDAY DAILY

T = 6.24 * (X)
T = 6.24 * 177
T = 1104.48
T = 1,104 vehicle trips
with 50% (552 vpd) entering and 50% (552 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.48 * (X)
T = 0.48 * 177
T = 84.96
T = 85 vehicle trips
with 67% (57 vph) entering and 33% (28 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.55 * (X)
T = 0.55 * 177
T = 97.35
T = 97 vehicle trips
with 42% (41 vph) entering and 58% (56 vph) exiting.

SATURDAY DAILY

$$\frac{\text{ITE LUC 310 Saturday Daily Trip Rate}}{\text{ITE LUC 310 Weekday Daily Trip Rate}} = \frac{\text{ITE LUC 311 Saturday Daily Trip Rate}}{\text{ITE LUC 311 Weekday Daily Trip Rate}}$$

$$\frac{10.50}{8.92} = \frac{(Y)}{6.24} \qquad Y = 7.34529148$$

T = Y * 177.00
T = 1300
T = 1,300 vehicle trips
with 50% (650 vph) entering and 50% (650 vph) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$$\frac{\text{ITE LUC 310 Saturday Midday Trip Rate}}{\text{ITE LUC 310 Saturday Daily Trip Rate}} = \frac{\text{ITE LUC 311 Saturday Midday Trip Rate}}{\text{ITE LUC 311 Saturday Daily Trip Rate}}$$

$$\frac{0.87}{10.50} = \frac{(Y)}{7.35} \qquad Y = 0.609$$

T = Y * 177.00
T = 107.8
T = 108 vehicle trips
with 56% (60 vph) entering and 44% (48 vph) exiting.

(same distribution split as ITE LUC 310 during the Saturday Midday peak hour of generator)

Institute of Transportation Engineers (ITE)
***Trip Generation*, 8th Edition**
Land Use Code (LUC) 932 - High-Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: 1000 Square Feet Gross Floor Area
Independent Variable (X): 10.03

AVERAGE WEEKDAY DAILY

T = 127.15 * (X)
T = 127.15 * 10
T = 1275.31
T = 1,276 vehicle trips
with 50% (638 vpd) entering and 50% (638 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 11.52 * (X)
T = 11.52 * 10
T = 115.55
T = 116 vehicle trips
with 52% (60 vph) entering and 48% (56 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 11.15 * (X)
T = 11.15 * 10
T = 111.83
T = 112 vehicle trips
with 59% (66 vph) entering and 41% (46 vph) exiting.

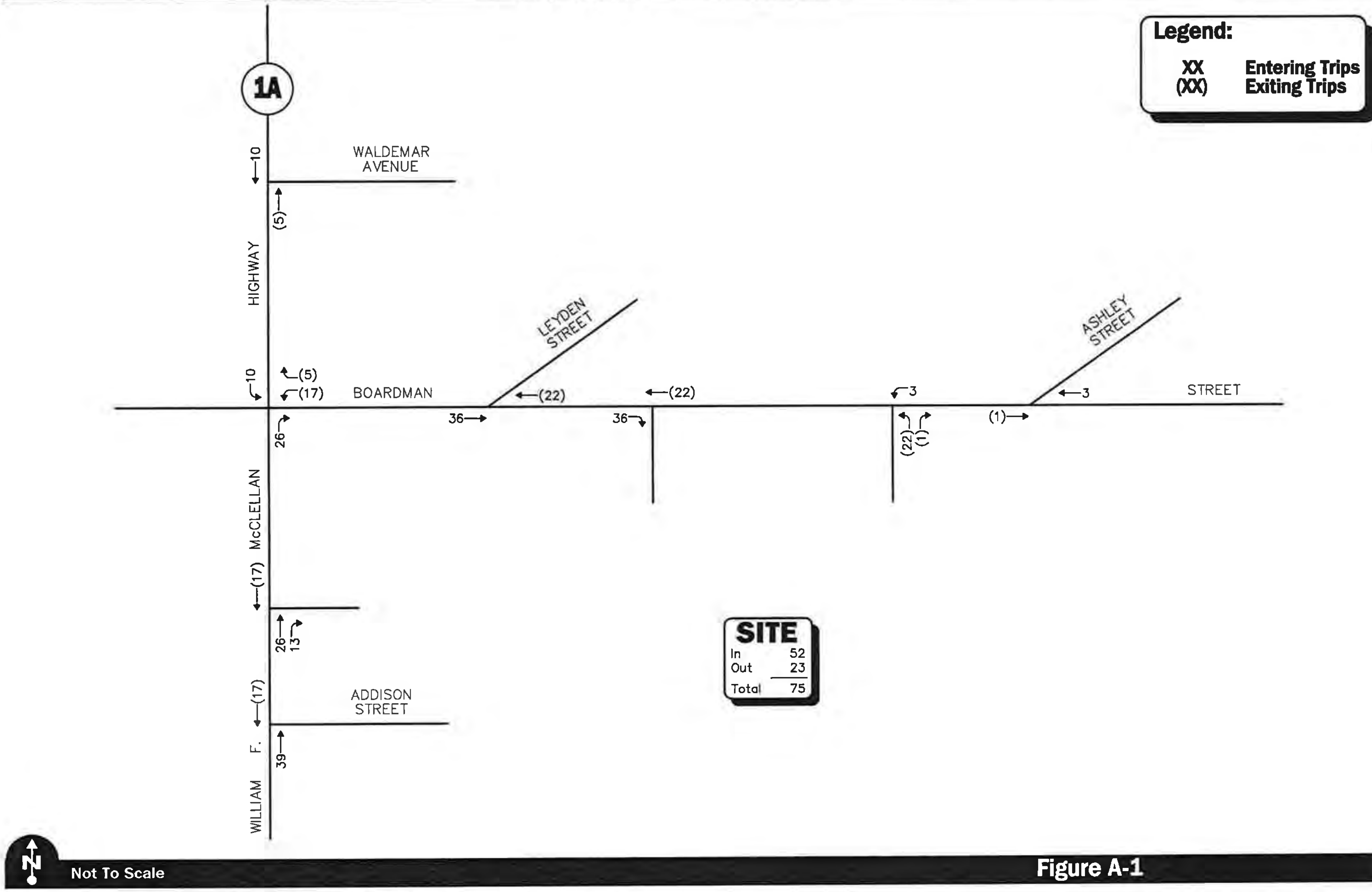
SATURDAY DAILY

T = 158.37 * (X)
T = 158.37 * 10
T = 1588.45
T = 1,588 vehicle trips
with 50% (794 vpd) entering and 50% (794 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 14.07 * (X)
T = 14.07 * 10
T = 141.12
T = 141 vehicle trips
with 53% (75 vph) entering and 47% (66 vph) exiting.

PROJECT-GENERATED PEAK-HOUR TRAFFIC-VOLUME NETWORKS



Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-1

Project-Generated
Weekday Morning
Peak Hour Traffic Volumes
Hotel Component

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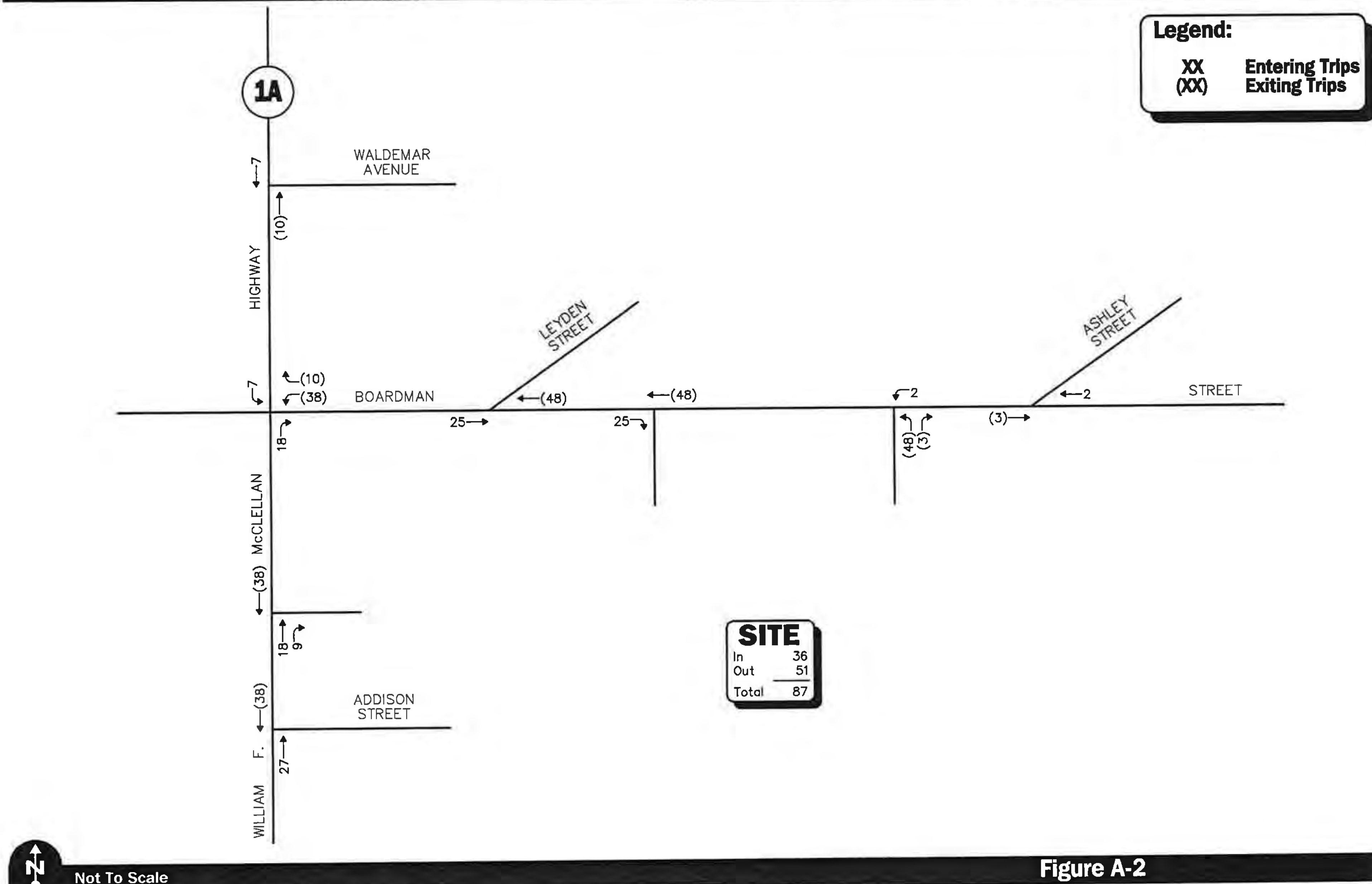

Figure A-2

Project-Generated
Weekday Evening
Peak Hour Traffic Volumes
Hotel Component

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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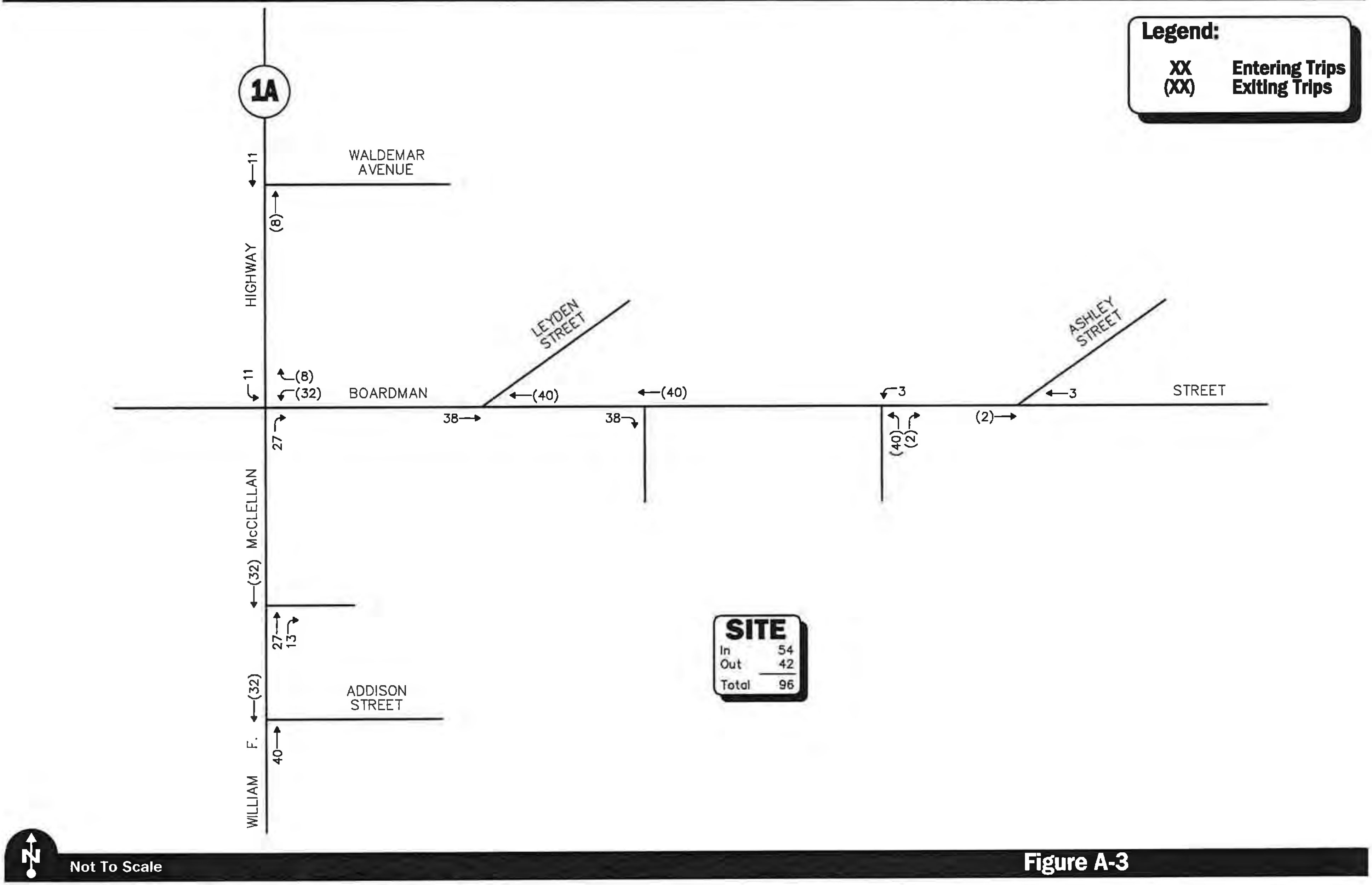

Figure A-3

Project-Generated Saturday Midday Peak Hour Traffic Volumes Hotel Component

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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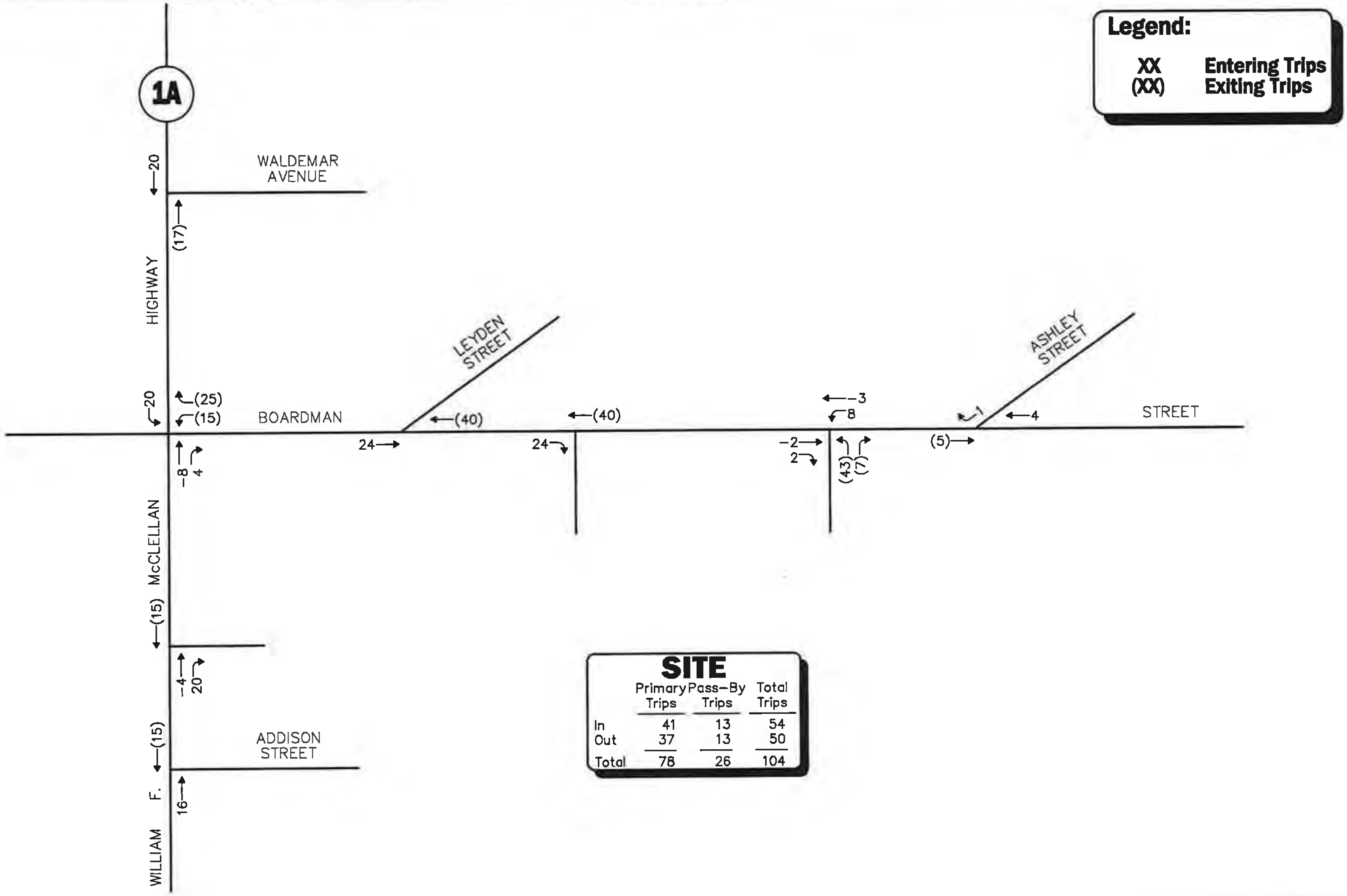

	Primary Trips	Pass-By Trips	Total Trips
In	41	13	54
Out	37	13	50
Total	78	26	104

Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-4

Project-Generated Weekday Morning Peak Hour Traffic Volumes Restaurant Component

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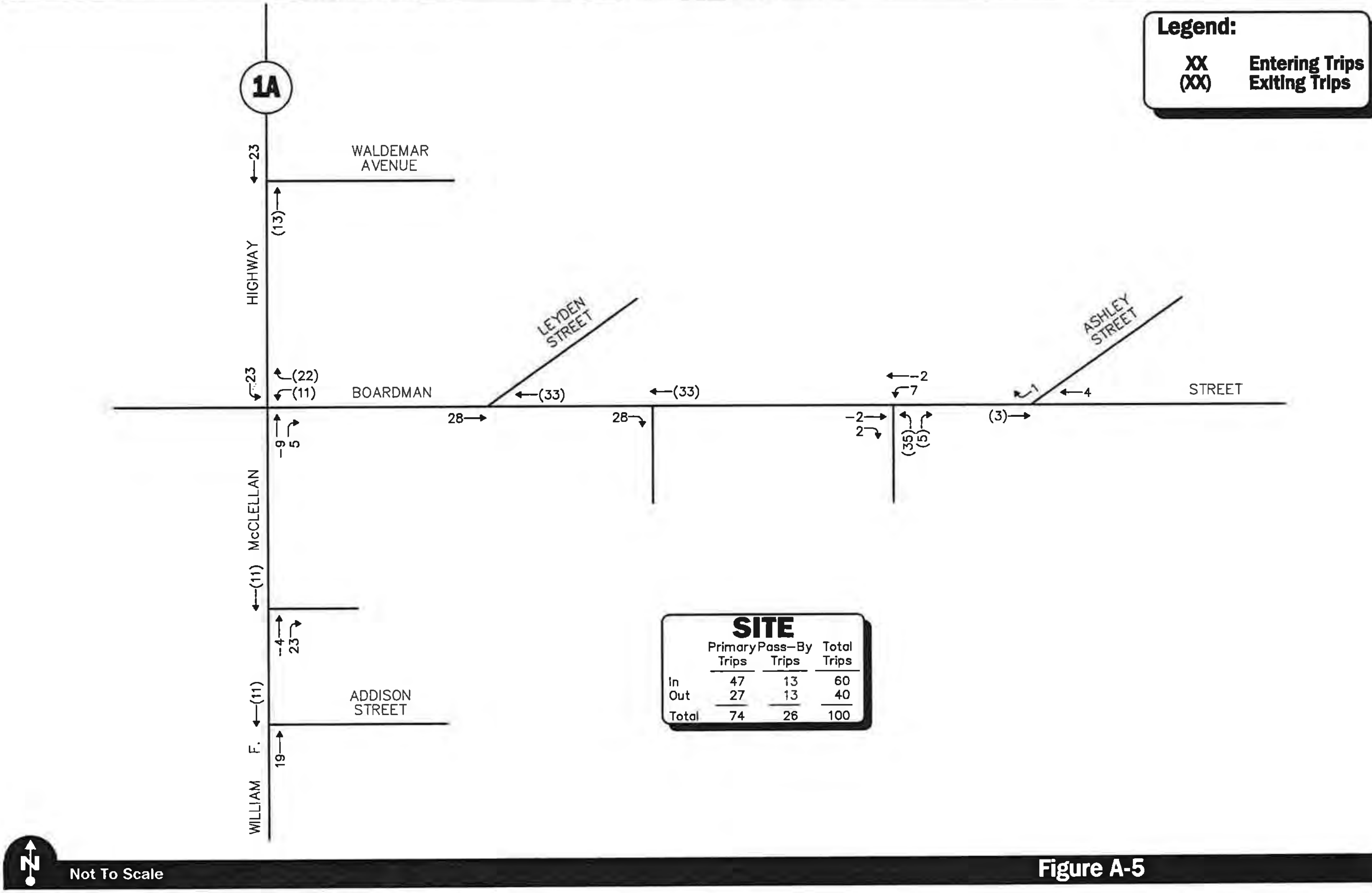

SITE	Primary Trips	Pass–By Trips	Total Trips
In	47	13	60
Out	27	13	40
Total	74	26	100

Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-5

Project-Generated Weekday Evening Peak Hour Traffic Volumes Restaurant Component

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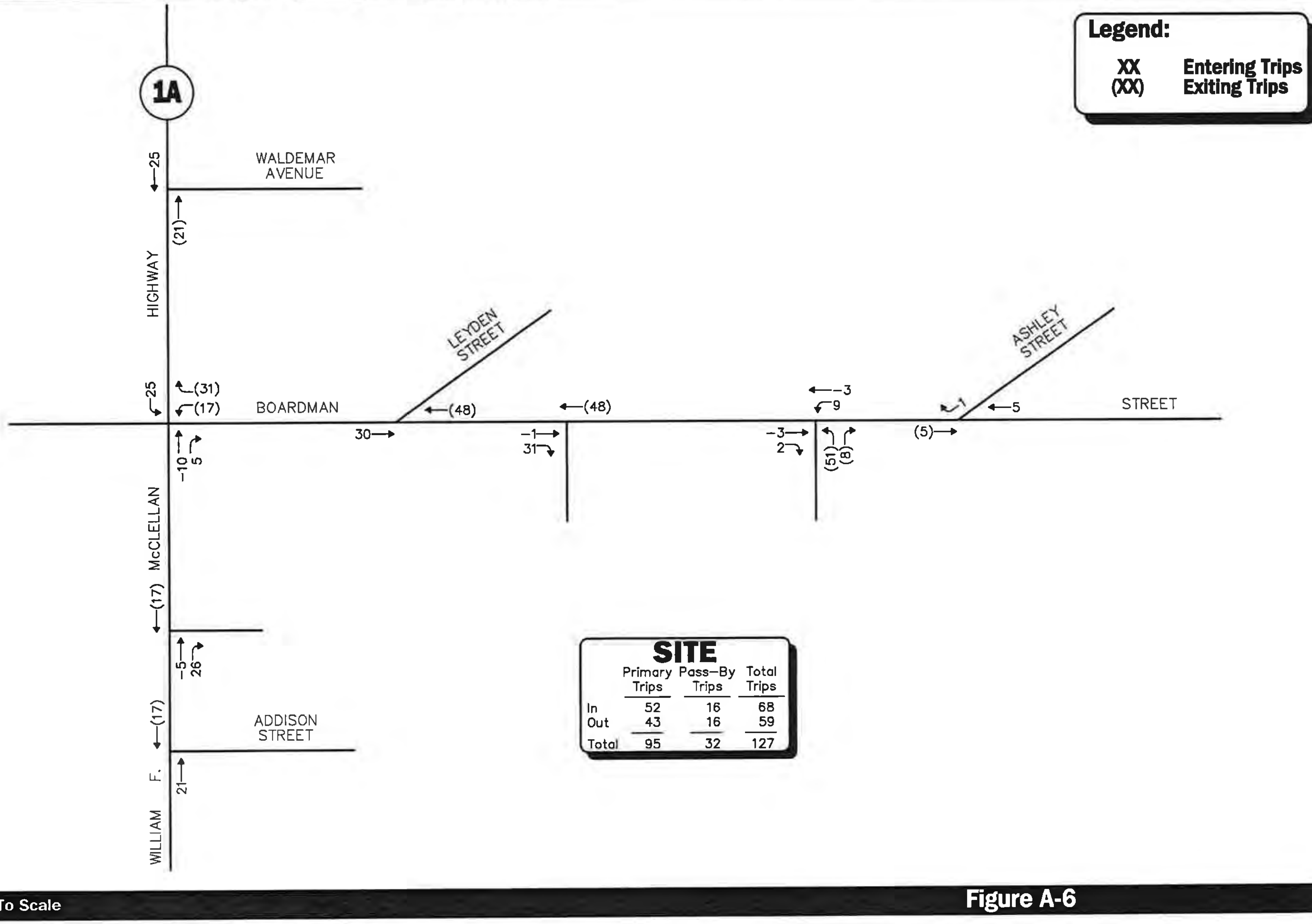

SITE

	Primary Trips	Pass-By Trips	Total Trips
In	52	16	68
Out	43	16	59
Total	95	32	127

Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-6

Project-Generated Saturday Midday Peak Hour Traffic Volumes Restaurant Component

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CAPACITY ANALYSIS WORKSHEETS

Route 1A at Boardman Street
Boardman Street at Leyden Street
Boardman Street at Ashley Street
Route 1A at Waldemar Avenue
Route 1A at Addison Street
Boardman Street at the East Site Driveway
Boardman Street at the West Site Driveway
Route 1A at the South Site Driveway

Route 1A at Boardman Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.87			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1588			1683	1436	1641	3374	1463	1770	3383	
Flt Permitted	0.21	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	391	1588			1318	1436	1641	3374	1463	1770	3383	
Volume (vph)	27	11	87	373	47	128	126	1004	87	107	2062	17
Peak-hour factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	33	13	106	410	52	141	137	1091	95	110	2126	18
RTOR Reduction (vph)	0	83	0	0	0	17	0	0	0	0	1	0
Lane Group Flow (vph)	33	36	0	0	462	124	137	1091	95	110	2143	0
Heavy Vehicles (%)	2%	0%	8%	1%	0%	5%	10%	7%	3%	2%	3%	6%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	27.5	27.5			38.0	51.3	13.7	62.4	128.7	13.3	62.0	
Effective Green, g (s)	28.5	28.5			39.0	53.3	14.7	63.4	128.7	14.3	63.0	
Actuated g/C Ratio	0.22	0.22			0.30	0.41	0.11	0.49	1.00	0.11	0.49	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	87	352			418	639	187	1662	1463	197	1656	
v/s Ratio Prot		0.02			c0.06	0.02	c0.08	0.32		0.06	c0.63	
v/s Ratio Perm	0.08				c0.28	0.06			c0.06			
v/c Ratio	0.38	0.10			1.11	0.19	0.73	0.66	0.06	0.56	1.29	
Uniform Delay, d1	42.6	39.9			44.8	24.0	55.1	24.5	0.0	54.2	32.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.1			75.7	0.1	13.8	0.9	0.1	3.4	137.1	
Delay (s)	45.3	40.1			120.5	24.2	68.9	25.4	0.1	57.6	169.9	
Level of Service	D	D			F	C	E	C	A	E	F	
Approach Delay (s)		41.2			98.0			28.1			164.5	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	109.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	128.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱		↰	↱	↰	↑↑	↱	↰	↑↱
Volume (vph)	27	11	373	47	128	126	1004	87	107	2062
Lane Group Flow (vph)	33	119	0	462	141	137	1091	95	110	2144
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.36	0.27		1.11	0.22	0.73	0.66	0.06	0.56	1.29
Control Delay	56.3	11.6		117.0	17.6	72.3	27.4	0.1	56.5	167.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	11.6		117.0	17.6	72.3	27.4	0.1	56.5	167.1
Queue Length 50th (ft)	24	9		~433	56	112	350	0	89	~1226
Queue Length 95th (ft)	54	48		#659	95	#198	462	0	146	#1364
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	91	434		418	681	202	1662	1463	328	1657
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.27		1.11	0.21	0.68	0.66	0.06	0.34	1.29

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 128.7

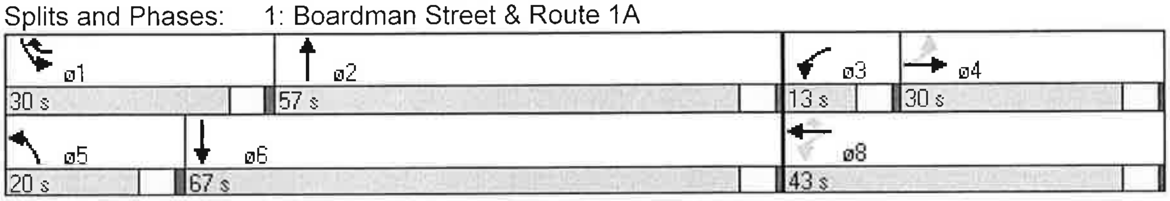
Natural Cycle: 130

Control Type: Actuated-Uncoordinated

~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.88			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	1586			1606	1463	1626	3505	1507	1787	3371	
Flt Permitted	0.63	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1135	1586			1260	1463	1626	3505	1507	1787	3371	
Volume (vph)	110	22	78	172	14	252	105	1813	99	223	1381	20
Peak-hour factor, PHF	0.86	0.86	0.86	0.94	0.94	0.94	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	128	26	91	183	15	268	107	1850	101	237	1469	21
RTOR Reduction (vph)	0	77	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	128	40	0	0	198	266	107	1850	101	237	1490	0
Heavy Vehicles (%)	6%	0%	12%	6%	0%	3%	11%	3%	0%	1%	3%	25%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	18.7	18.7			29.2	49.7	12.3	62.4	127.1	20.5	70.6	
Effective Green, g (s)	19.7	19.7			30.2	51.7	13.3	63.4	127.1	21.5	71.6	
Actuated g/C Ratio	0.15	0.15			0.24	0.41	0.10	0.50	1.00	0.17	0.56	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	246			317	641	170	1748	1507	302	1899	
v/s Ratio Prot		0.03			c0.03	0.07	0.07	c0.53		c0.13	0.44	
v/s Ratio Perm	c0.11				0.12	0.11			0.07			
v/c Ratio	0.73	0.16			0.62	0.41	0.63	1.06	0.07	0.78	0.78	
Uniform Delay, d1	51.1	46.6			43.4	26.9	54.5	31.8	0.0	50.6	21.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.9	0.3			3.8	0.4	7.1	38.9	0.1	12.5	2.2	
Delay (s)	65.1	46.9			47.2	27.3	61.6	70.7	0.1	63.1	23.9	
Level of Service	E	D			D	C	E	E	A	E	C	
Approach Delay (s)		56.4			35.8			66.8			29.3	
Approach LOS		E			D			E			C	

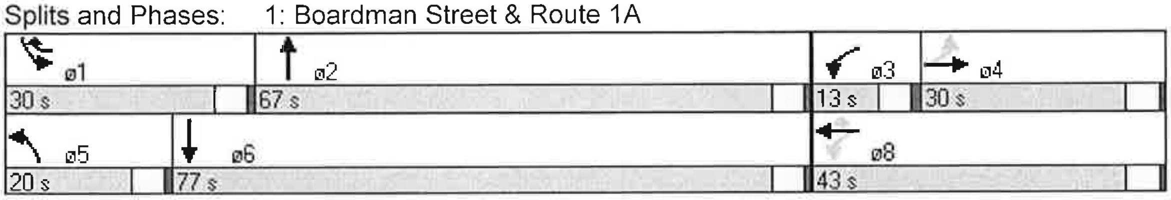
Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	127.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	110	22	172	14	252	105	1813	99	223	1381
Lane Group Flow (vph)	128	117	0	198	268	107	1850	101	237	1490
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	67.0	0.0	30.0	77.0
Total Split (%)	21.4%	21.4%	9.3%	30.7%	21.4%	14.3%	47.9%	0.0%	21.4%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.73	0.36		0.62	0.42	0.63	1.06	0.07	0.78	0.79
Control Delay	62.4	16.7		48.6	25.7	66.3	71.1	0.1	61.4	26.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	16.7		48.6	25.7	66.3	71.1	0.1	61.4	26.8
Queue Length 50th (ft)	103	19		145	146	87	~916	0	190	507
Queue Length 95th (ft)	169	68		228	217	159	#1175	0	299	690
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	224	385		379	646	201	1748	1507	354	1917
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.30		0.52	0.41	0.53	1.06	0.07	0.67	0.78

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 127.3
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.89			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1662			1683	1492	1719	3539	1507	1787	3414	
Flt Permitted	0.62	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1186	1662			1318	1492	1719	3539	1507	1787	3414	
Volume (vph)	47	20	55	173	22	325	63	1434	119	333	1373	23
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	49	21	58	190	24	357	66	1509	125	347	1430	24
RTOR Reduction (vph)	0	51	0	0	0	4	0	0	0	0	1	0
Lane Group Flow (vph)	49	28	0	0	214	353	66	1509	125	347	1453	0
Heavy Vehicles (%)	0%	0%	7%	1%	0%	1%	5%	2%	0%	1%	2%	0%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	12.4	12.4			24.7	49.5	8.4	53.3	117.8	24.8	69.7	
Effective Green, g (s)	13.4	13.4			25.7	51.5	9.4	54.3	117.8	25.8	70.7	
Actuated g/C Ratio	0.11	0.11			0.22	0.44	0.08	0.46	1.00	0.22	0.60	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	135	189			313	703	137	1631	1507	391	2049	
v/s Ratio Prot		0.02			c0.05	0.11	0.04	c0.43		c0.19	0.43	
v/s Ratio Perm	0.04				c0.10	0.13			0.08			
v/c Ratio	0.36	0.15			0.68	0.50	0.48	0.93	0.08	0.89	0.71	
Uniform Delay, d1	48.3	47.0			42.3	23.9	51.9	29.8	0.0	44.6	16.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.4			6.1	0.6	2.7	9.3	0.1	20.8	1.1	
Delay (s)	49.9	47.4			48.4	24.5	54.5	39.2	0.1	65.4	17.5	
Level of Service	D	D			D	C	D	D	A	E	B	
Approach Delay (s)		48.4			33.4			36.9			26.8	
Approach LOS		D			C			D			C	

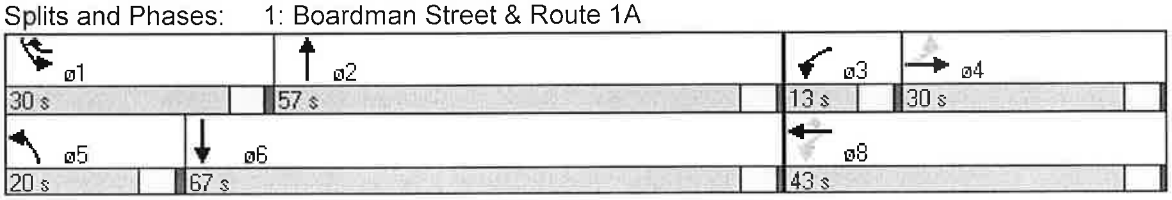
Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	117.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	47	20	173	22	325	63	1434	119	333	1373
Lane Group Flow (vph)	49	79	0	214	357	66	1509	125	347	1454
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.33	0.31		0.70	0.51	0.42	0.93	0.08	0.87	0.70
Control Delay	47.3	17.9		45.8	23.4	54.3	41.3	0.1	66.0	20.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	17.9		45.8	23.4	54.3	41.3	0.1	66.0	20.5
Queue Length 50th (ft)	34	14		145	175	47	546	0	251	384
Queue Length 95th (ft)	72	58		223	258	97	#832	0	#472	635
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	240	382		419	696	224	1630	1507	402	2089
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.21		0.51	0.51	0.29	0.93	0.08	0.86	0.70

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 115.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.87			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1592			1683	1436	1641	3374	1463	1770	3383	
Flt Permitted	0.17	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	321	1592			1318	1436	1641	3374	1463	1770	3383	
Volume (vph)	28	12	91	392	49	135	112	1055	91	112	2167	18
Peak-hour factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	34	15	111	431	54	148	122	1147	99	115	2234	19
RTOR Reduction (vph)	0	86	0	0	0	14	0	0	0	0	1	0
Lane Group Flow (vph)	34	40	0	0	485	134	122	1147	99	115	2252	0
Heavy Vehicles (%)	2%	0%	8%	1%	0%	5%	10%	7%	3%	2%	3%	6%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	27.5	27.5			38.0	51.6	13.2	61.6	128.2	13.6	62.0	
Effective Green, g (s)	28.5	28.5			39.0	53.6	14.2	62.6	128.2	14.6	63.0	
Actuated g/C Ratio	0.22	0.22			0.30	0.42	0.11	0.49	1.00	0.11	0.49	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	71	354			419	645	182	1648	1463	202	1662	
v/s Ratio Prot		0.02			c0.06	0.02	c0.07	0.34		0.06	c0.67	
v/s Ratio Perm	0.11				c0.29	0.07			c0.07			
v/c Ratio	0.48	0.11			1.16	0.21	0.67	0.70	0.07	0.57	1.36	
Uniform Delay, d1	43.4	39.8			44.6	23.8	54.8	25.4	0.0	53.8	32.6	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	0.1			94.5	0.2	9.3	1.3	0.1	3.7	163.9	
Delay (s)	48.4	39.9			139.1	23.9	64.1	26.7	0.1	57.5	196.5	
Level of Service	D	D			F	C	E	C	A	E	F	
Approach Delay (s)		41.7			112.2			28.1			189.8	
Approach LOS		D			F			C			F	

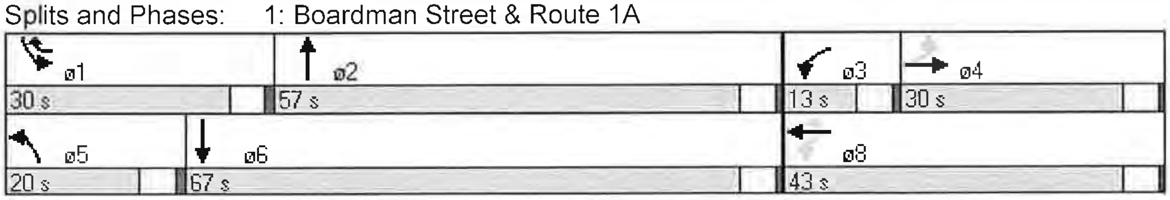
Intersection Summary			
HCM Average Control Delay	124.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	128.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	28	12	392	49	135	112	1055	91	112	2167
Lane Group Flow (vph)	34	126	0	485	148	122	1147	99	115	2253
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.47	0.29		1.15	0.22	0.67	0.70	0.07	0.57	1.35
Control Delay	67.0	11.7		133.9	18.4	67.9	28.9	0.1	56.3	192.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	11.7		133.9	18.4	67.9	28.9	0.1	56.3	192.6
Queue Length 50th (ft)	25	10		~486	62	99	380	0	93	~1327
Queue Length 95th (ft)	58	50		#702	102	167	500	0	151	#1464
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	73	441		420	682	202	1647	1463	330	1664
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.29		1.15	0.22	0.60	0.70	0.07	0.35	1.35

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 128.2
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↰	↱	↰	↑↑	↱	↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.88			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	1586			1606	1463	1626	3505	1507	1787	3371	
Flt Permitted	0.63	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1124	1586			1260	1463	1626	3505	1507	1787	3371	
Volume (vph)	116	23	82	181	15	265	110	1905	104	234	1451	21
Peak-hour factor, PHF	0.86	0.86	0.86	0.94	0.94	0.94	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	135	27	95	193	16	282	112	1944	106	249	1544	22
RTOR Reduction (vph)	0	80	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	135	42	0	0	209	280	112	1944	106	249	1566	0
Heavy Vehicles (%)	6%	0%	12%	6%	0%	3%	11%	3%	0%	1%	3%	25%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	19.8	19.8			30.3	51.6	12.6	62.4	129.0	21.3	71.1	
Effective Green, g (s)	20.8	20.8			31.3	53.6	13.6	63.4	129.0	22.3	72.1	
Actuated g/C Ratio	0.16	0.16			0.24	0.42	0.11	0.49	1.00	0.17	0.56	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	181	256			323	653	171	1723	1507	309	1884	
v/s Ratio Prot		0.03			c0.03	0.07	0.07	c0.55		c0.14	0.46	
v/s Ratio Perm	c0.12				0.12	0.12			0.07			
v/c Ratio	0.75	0.17			0.65	0.43	0.65	1.13	0.07	0.81	0.83	
Uniform Delay, d1	51.6	46.6			43.9	26.8	55.4	32.8	0.0	51.3	23.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.3	0.3			4.4	0.5	8.7	65.8	0.1	14.1	3.3	
Delay (s)	66.9	46.9			48.3	27.3	64.1	98.6	0.1	65.4	26.7	
Level of Service	E	D			D	C	E	F	A	E	C	
Approach Delay (s)		57.4			36.2			92.0			32.0	
Approach LOS		E			D			F			C	

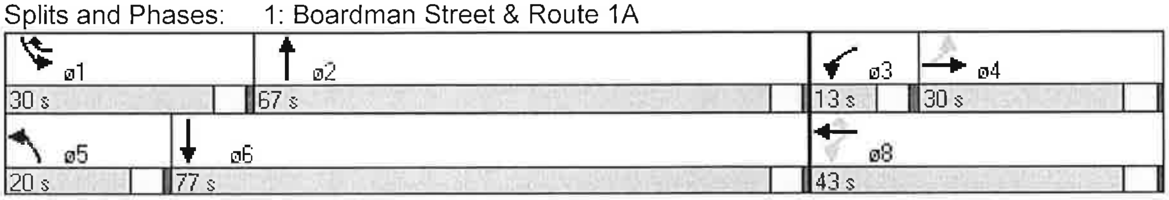
Intersection Summary			
HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	116	23	181	15	265	110	1905	104	234	1451
Lane Group Flow (vph)	135	122	0	209	282	112	1944	106	249	1566
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	67.0	0.0	30.0	77.0
Total Split (%)	21.4%	21.4%	9.3%	30.7%	21.4%	14.3%	47.9%	0.0%	21.4%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.75	0.36		0.65	0.43	0.65	1.13	0.07	0.81	0.83
Control Delay	64.3	16.5		49.8	25.9	68.6	98.3	0.1	63.9	29.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	16.5		49.8	25.9	68.6	98.3	0.1	63.9	29.6
Queue Length 50th (ft)	111	20		157	156	93	~1043	0	204	576
Queue Length 95th (ft)	178	69		241	230	166	#1285	0	#335	770
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	222	389		377	652	199	1721	1507	351	1897
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.31		0.55	0.43	0.56	1.13	0.07	0.71	0.83

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 129.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.89			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1661			1683	1492	1719	3539	1507	1787	3414	
Flt Permitted	0.62	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1174	1661			1318	1492	1719	3539	1507	1787	3414	
Volume (vph)	49	21	58	182	23	341	66	1507	125	350	1443	24
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	52	22	61	200	25	375	69	1586	132	365	1503	25
RTOR Reduction (vph)	0	54	0	0	0	3	0	0	0	0	1	0
Lane Group Flow (vph)	52	29	0	0	225	372	69	1586	132	365	1527	0
Heavy Vehicles (%)	0%	0%	7%	1%	0%	1%	5%	2%	0%	1%	2%	0%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	13.4	13.4			25.9	51.0	8.7	53.4	119.4	25.1	69.8	
Effective Green, g (s)	14.4	14.4			26.9	53.0	9.7	54.4	119.4	26.1	70.8	
Actuated g/C Ratio	0.12	0.12			0.23	0.44	0.08	0.46	1.00	0.22	0.59	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	142	200			323	712	140	1612	1507	391	2024	
v/s Ratio Prot		0.02			c0.05	0.11	0.04	c0.45		c0.20	0.45	
v/s Ratio Perm	0.04				c0.11	0.14			0.09			
v/c Ratio	0.37	0.15			0.70	0.52	0.49	0.98	0.09	0.93	0.75	
Uniform Delay, d1	48.3	47.0			42.5	24.0	52.5	32.1	0.0	45.8	17.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.3			6.4	0.7	2.7	18.5	0.1	29.1	1.6	
Delay (s)	49.9	47.3			48.9	24.7	55.2	50.6	0.1	74.9	19.5	
Level of Service	D	D			D	C	E	D	A	E	B	
Approach Delay (s)		48.3			33.8			47.1			30.2	
Approach LOS		D			C			D			C	

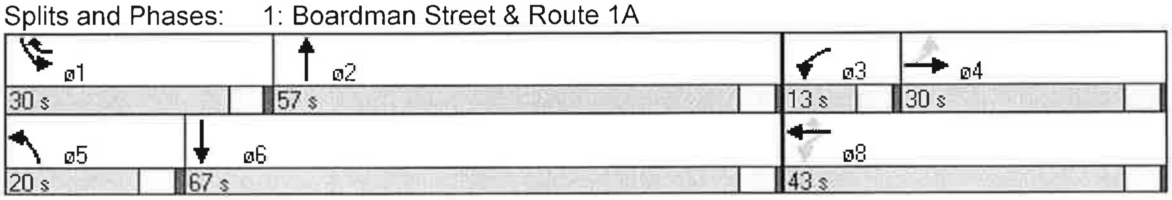
Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	119.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	49	21	182	23	341	66	1507	125	350	1443
Lane Group Flow (vph)	52	83	0	225	375	69	1586	132	365	1528
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.34	0.30		0.71	0.52	0.43	0.99	0.09	0.92	0.74
Control Delay	47.2	17.4		46.3	23.7	55.2	52.1	0.1	74.4	22.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	17.4		46.3	23.7	55.2	52.1	0.1	74.4	22.7
Queue Length 50th (ft)	36	15		153	189	50	607	0	271	433
Queue Length 95th (ft)	76	59		233	276	102	#921	0	#515	716
Internal Link Dist (ft)		1817		875			4216			3352
Turn Bay Length (ft)										
Base Capacity (vph)	238	385		419	715	222	1608	1507	398	2063
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22		0.54	0.52	0.31	0.99	0.09	0.92	0.74

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 117.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.87			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1592			1682	1436	1641	3374	1463	1770	3383	
Flt Permitted	0.14	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	261	1592			1318	1436	1641	3374	1463	1770	3383	
Volume (vph)	28	12	91	424	49	165	112	1047	121	142	2167	18
Peak-hour factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	34	15	111	466	54	181	122	1138	132	146	2234	19
RTOR Reduction (vph)	0	86	0	0	0	14	0	0	0	0	1	0
Lane Group Flow (vph)	34	40	0	0	520	167	122	1138	132	146	2252	0
Heavy Vehicles (%)	2%	0%	8%	1%	0%	5%	10%	7%	3%	2%	3%	6%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	27.5	27.5			38.0	53.8	13.2	59.4	128.2	15.8	62.0	
Effective Green, g (s)	28.5	28.5			39.0	55.8	14.2	60.4	128.2	16.8	63.0	
Actuated g/C Ratio	0.22	0.22			0.30	0.44	0.11	0.47	1.00	0.13	0.49	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	58	354			419	670	182	1590	1463	232	1662	
v/s Ratio Prot		0.02			c0.06	0.03	0.07	0.34		c0.08	c0.67	
v/s Ratio Perm	0.13				c0.31	0.08			c0.09			
v/c Ratio	0.59	0.11			1.24	0.25	0.67	0.72	0.09	0.63	1.36	
Uniform Delay, d1	44.6	39.8			44.6	22.9	54.8	27.0	0.0	52.8	32.6	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.2	0.1			127.3	0.2	9.3	1.6	0.1	5.3	163.9	
Delay (s)	58.8	39.9			171.9	23.1	64.1	28.6	0.1	58.0	196.5	
Level of Service	E	D			F	C	E	C	A	E	F	
Approach Delay (s)		43.9			133.5			29.0			188.1	
Approach LOS		D			F			C			F	

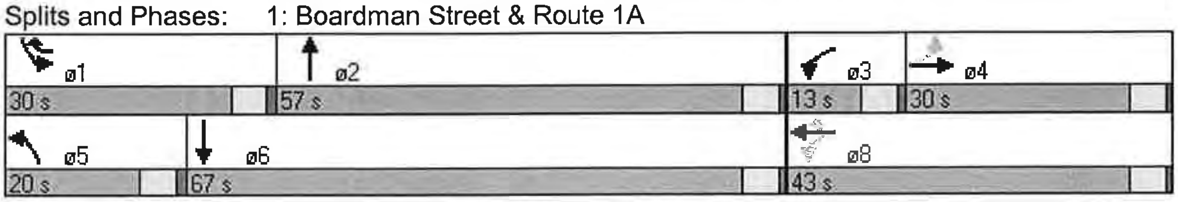
Intersection Summary			
HCM Average Control Delay	127.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	128.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	109.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	28	12	424	49	165	112	1047	121	142	2167
Lane Group Flow (vph)	34	126	0	520	181	122	1138	132	146	2253
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.53	0.29		1.24	0.26	0.67	0.72	0.09	0.63	1.35
Control Delay	76.7	11.7		164.5	18.4	67.9	31.0	0.1	56.4	192.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	11.7		164.5	18.4	67.9	31.0	0.1	56.4	192.6
Queue Length 50th (ft)	26	10		~548	78	99	389	0	118	~1327
Queue Length 95th (ft)	#66	50		#767	119	167	516	0	182	#1464
Internal Link Dist (ft)		1817		875			624			1508
Turn Bay Length (ft)										
Base Capacity (vph)	64	441		420	693	202	1588	1463	335	1664
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.29		1.24	0.26	0.60	0.72	0.09	0.44	1.35

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 128.2
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.88			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	1586			1604	1463	1626	3505	1507	1787	3371	
Flt Permitted	0.53	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	958	1586			1259	1463	1626	3505	1507	1787	3371	
Volume (vph)	116	23	82	230	15	297	110	1896	127	264	1451	21
Peak-hour factor, PHF	0.86	0.86	0.86	0.94	0.94	0.94	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	135	27	95	245	16	316	112	1935	130	281	1544	22
RTOR Reduction (vph)	0	79	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	135	43	0	0	261	314	112	1935	130	281	1566	0
Heavy Vehicles (%)	6%	0%	12%	6%	0%	3%	11%	3%	0%	1%	3%	25%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	21.1	21.1			31.6	54.6	12.8	62.3	131.9	23.0	72.5	
Effective Green, g (s)	22.1	22.1			32.6	56.6	13.8	63.3	131.9	24.0	73.5	
Actuated g/C Ratio	0.17	0.17			0.25	0.43	0.10	0.48	1.00	0.18	0.56	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	266			328	672	170	1682	1507	325	1878	
v/s Ratio Prot		0.03			c0.04	0.09	0.07	c0.55		c0.16	0.46	
v/s Ratio Perm	0.14				c0.16	0.13			0.09			
v/c Ratio	0.84	0.16			0.80	0.47	0.66	1.15	0.09	0.86	0.83	
Uniform Delay, d1	53.2	47.0			46.5	26.9	56.8	34.3	0.0	52.4	24.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	29.9	0.3			12.5	0.5	8.9	75.1	0.1	20.5	3.3	
Delay (s)	83.1	47.3			59.1	27.4	65.7	109.4	0.1	72.9	27.5	
Level of Service	F	D			E	C	E	F	A	E	C	
Approach Delay (s)		66.1			41.7			100.6			34.4	
Approach LOS		E			D			F			C	

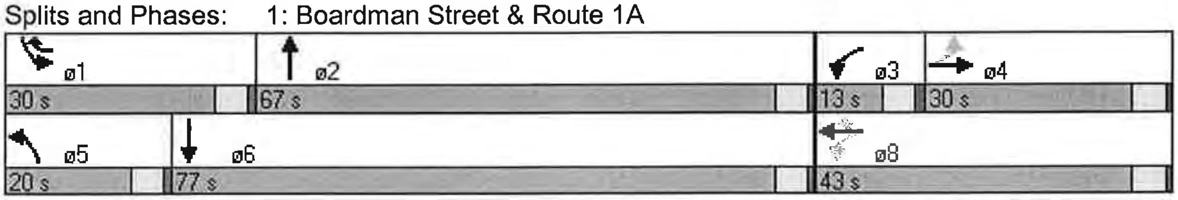
Intersection Summary			
HCM Average Control Delay	66.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	131.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	116	23	230	15	297	110	1896	127	264	1451
Lane Group Flow (vph)	135	122	0	261	316	112	1935	130	281	1566
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	67.0	0.0	30.0	77.0
Total Split (%)	21.4%	21.4%	9.3%	30.7%	21.4%	14.3%	47.9%	0.0%	21.4%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.76	0.35		0.80	0.47	0.66	1.15	0.09	0.86	0.83
Control Delay	67.0	16.3		57.0	26.6	70.4	108.1	0.1	71.4	30.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	16.3		57.0	26.6	70.4	108.1	0.1	71.4	30.6
Queue Length 50th (ft)	113	20		206	180	95	~1071	0	239	594
Queue Length 95th (ft)	180	69		302	262	166	#1276	0	#403	770
Internal Link Dist (ft)		1817		875			624			796
Turn Bay Length (ft)										
Base Capacity (vph)	211	389		372	669	195	1681	1507	348	1880
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.31		0.70	0.47	0.57	1.15	0.09	0.81	0.83

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 132
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	10	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.89			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1661			1681	1492	1719	3539	1507	1787	3414	
Flt Permitted	0.59	1.00			0.75	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1118	1661			1318	1492	1719	3539	1507	1787	3414	
Volume (vph)	49	21	58	231	23	380	66	1497	157	386	1443	24
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	52	22	61	254	25	418	69	1576	165	402	1503	25
RTOR Reduction (vph)	0	52	0	0	0	3	0	0	0	0	1	0
Lane Group Flow (vph)	52	31	0	0	279	415	69	1576	165	402	1527	0
Heavy Vehicles (%)	0%	0%	7%	1%	0%	1%	5%	2%	0%	1%	2%	0%
Turn Type	Perm			pm+pt		pm+ov	Prot		Free	Prot		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8			Free			
Actuated Green, G (s)	17.2	17.2			30.5	55.6	8.9	53.3	123.9	25.1	69.5	
Effective Green, g (s)	18.2	18.2			31.5	57.6	9.9	54.3	123.9	26.1	70.5	
Actuated g/C Ratio	0.15	0.15			0.25	0.46	0.08	0.44	1.00	0.21	0.57	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	244			362	742	137	1551	1507	376	1943	
v/s Ratio Prot		0.02			c0.06	0.12	0.04	c0.45		c0.22	0.45	
v/s Ratio Perm	0.05				c0.14	0.16			0.11			
v/c Ratio	0.32	0.13			0.77	0.56	0.50	1.02	0.11	1.07	0.79	
Uniform Delay, d1	47.3	45.9			42.9	24.0	54.6	34.8	0.0	48.9	20.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.2			9.7	0.9	2.9	26.9	0.1	66.0	2.2	
Delay (s)	48.4	46.2			52.6	24.9	57.5	61.7	0.1	114.9	23.0	
Level of Service	D	D			D	C	E	E	A	F	C	
Approach Delay (s)		47.0			36.0			56.0			42.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	123.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	49	21	231	23	380	66	1497	157	386	1443
Lane Group Flow (vph)	52	83	0	279	418	69	1576	165	402	1528
Turn Type	Perm		pm+pt		pm+ov	Prot		Free	Prot	
Protected Phases		4	3	8	1	5	2		1	6
Permitted Phases	4		8		8			Free		
Detector Phases	4	4	3	8	1	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	9.0	21.0		9.0	21.0
Total Split (s)	30.0	30.0	13.0	43.0	30.0	20.0	57.0	0.0	30.0	67.0
Total Split (%)	23.1%	23.1%	10.0%	33.1%	23.1%	15.4%	43.8%	0.0%	23.1%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	Min	None	None	None	None		None	None
v/c Ratio	0.29	0.26		0.78	0.56	0.44	1.02	0.11	1.05	0.77
Control Delay	46.0	16.7		50.0	24.2	57.5	62.7	0.1	106.6	26.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	16.7		50.0	24.2	57.5	62.7	0.1	106.6	26.0
Queue Length 50th (ft)	36	15		198	219	53	~705	0	~351	495
Queue Length 95th (ft)	75	59		292	316	103	#927	0	#594	#746
Internal Link Dist (ft)		1817		875			464			1106
Turn Bay Length (ft)										
Base Capacity (vph)	228	388		421	744	214	1546	1507	383	1979
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.21		0.66	0.56	0.32	1.02	0.11	1.05	0.77

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 121.8

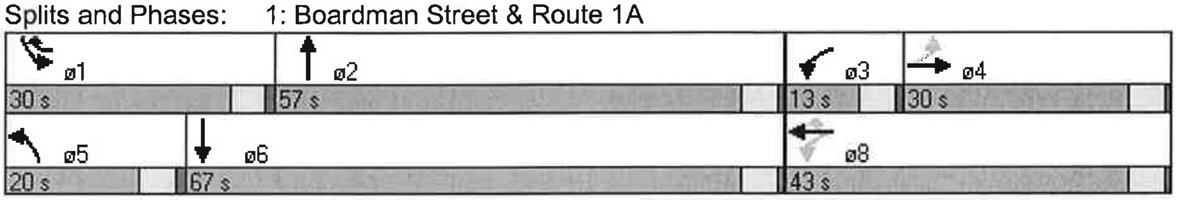
Natural Cycle: 110

Control Type: Actuated-Uncoordinated

~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	11	11	11	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.98	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1592		1684	1688	1487	1641	3374	1463	1770	3383	
Flt Permitted	0.95	1.00		0.98	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1592		1684	1731	1487	1641	3374	1463	1770	3383	
Volume (vph)	28	12	91	424	49	165	112	1047	121	142	2167	18
Peak-hour factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	34	15	111	466	54	181	122	1138	132	146	2234	19
RTOR Reduction (vph)	0	104	0	0	0	99	0	0	0	0	0	0
Lane Group Flow (vph)	34	22	0	259	261	82	122	1138	132	146	2253	0
Heavy Vehicles (%)	2%	0%	8%	1%	0%	5%	10%	7%	3%	2%	3%	6%
Turn Type	Split			Split		custom	Prot		Free	Prot		
Protected Phases	4	4		8	8	1 8	5	2		1	6	
Permitted Phases						8			Free			
Actuated Green, G (s)	7.2	7.2		22.7	22.7	42.0	11.3	61.2	125.4	14.3	64.2	
Effective Green, g (s)	8.2	8.2		23.7	23.7	43.0	12.3	62.2	125.4	15.3	65.2	
Actuated g/C Ratio	0.07	0.07		0.19	0.19	0.34	0.10	0.50	1.00	0.12	0.52	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	104		318	319	510	161	1674	1463	216	1759	
v/s Ratio Prot	c0.02	0.01		0.15	c0.15	0.06	0.07	0.34		c0.08	c0.67	
v/s Ratio Perm									0.09			
v/c Ratio	0.29	0.21		0.81	0.82	0.16	0.76	0.68	0.09	0.68	1.28	
Uniform Delay, d1	55.8	55.5		48.7	48.8	28.7	55.1	24.0	0.0	52.7	30.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	1.0		14.7	14.9	0.1	18.3	1.1	0.1	8.1	130.8	
Delay (s)	57.2	56.6		63.4	63.7	28.8	73.4	25.1	0.1	60.8	160.9	
Level of Service	E	E		E	E	C	E	C	A	E	F	
Approach Delay (s)		56.7			54.6			27.0			154.8	
Approach LOS		E			D			C			F	

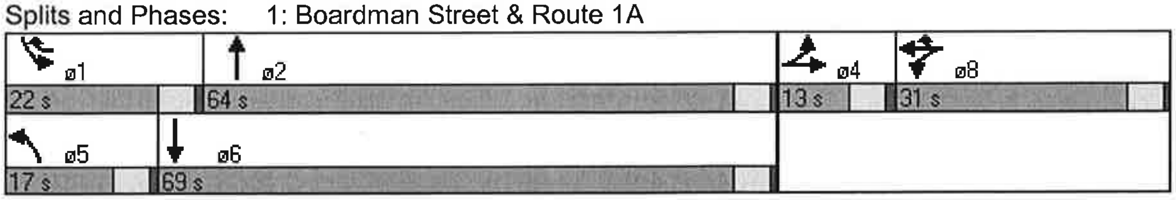
Intersection Summary			
HCM Average Control Delay	98.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	125.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	28	12	424	49	165	112	1047	121	142	2167
Lane Group Flow (vph)	34	126	259	261	181	122	1138	132	146	2253
Turn Type	Split		Split		custom	Prot		Free	Prot	
Protected Phases	4	4	8	8	1 8	5	2		1	6
Permitted Phases					8			Free		
Detector Phases	4	4	8	8	1 8	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	13.0	13.0	21.0	21.0		9.0	21.0		9.0	21.0
Total Split (s)	13.0	13.0	31.0	31.0	53.0	17.0	64.0	0.0	22.0	69.0
Total Split (%)	10.0%	10.0%	23.8%	23.8%	40.8%	13.1%	49.2%	0.0%	16.9%	53.1%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.29	0.61	0.81	0.82	0.30	0.76	0.68	0.09	0.68	1.28
Control Delay	63.0	25.3	61.9	62.1	7.8	79.6	28.0	0.1	63.3	159.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	25.3	61.9	62.1	7.8	79.6	28.0	0.1	63.3	159.7
Queue Length 50th (ft)	28	12	216	218	17	101	394	0	118	~1302
Queue Length 95th (ft)	57	60	#337	#342	67	#199	486	0	191	#1440
Internal Link Dist (ft)		1817		875			1164			3352
Turn Bay Length (ft)										
Base Capacity (vph)	127	217	354	355	649	169	1673	1463	249	1758
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.58	0.73	0.74	0.28	0.72	0.68	0.09	0.59	1.28

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 125.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	11	11	11	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.95	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.98	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	1586		1621	1632	1694	1626	3505	1507	1787	3371	
Flt Permitted	0.95	1.00		0.98	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	1586		1621	1574	1694	1626	3505	1507	1787	3371	
Volume (vph)	116	23	82	230	15	297	110	1896	127	264	1451	21
Peak-hour factor, PHF	0.86	0.86	0.86	0.94	0.94	0.94	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	135	27	95	245	16	316	112	1935	130	281	1544	22
RTOR Reduction (vph)	0	87	0	0	0	205	0	0	0	0	0	0
Lane Group Flow (vph)	135	35	0	127	134	111	112	1935	130	281	1566	0
Heavy Vehicles (%)	6%	0%	12%	6%	0%	3%	11%	3%	0%	1%	3%	25%
Turn Type	Split			Split		custom	Prot		Free	Prot		
Protected Phases	4	4		8	8	1 8	5	2		1	6	
Permitted Phases						8			Free			
Actuated Green, G (s)	10.0	10.0		16.5	16.5	40.5	13.2	66.1	131.6	19.0	71.9	
Effective Green, g (s)	11.0	11.0		17.5	17.5	41.5	14.2	67.1	131.6	20.0	72.9	
Actuated g/C Ratio	0.08	0.08		0.13	0.13	0.32	0.11	0.51	1.00	0.15	0.55	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	142	133		216	217	534	175	1787	1507	272	1867	
v/s Ratio Prot	c0.08	0.02		0.08	c0.08	0.07	0.07	c0.55		c0.16	0.46	
v/s Ratio Perm									0.09			
v/c Ratio	0.95	0.26		0.59	0.62	0.21	0.64	1.08	0.09	1.03	0.84	
Uniform Delay, d1	60.0	56.5		53.7	53.9	33.0	56.3	32.2	0.0	55.8	24.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	60.4	1.1		4.0	5.1	0.2	7.7	47.6	0.1	63.4	3.5	
Delay (s)	120.4	57.6		57.7	59.0	33.2	64.0	79.8	0.1	119.2	27.9	
Level of Service	F	E		E	E	C	E	E	A	F	C	
Approach Delay (s)		90.6			44.6			74.3			41.8	
Approach LOS		F			D			E			D	

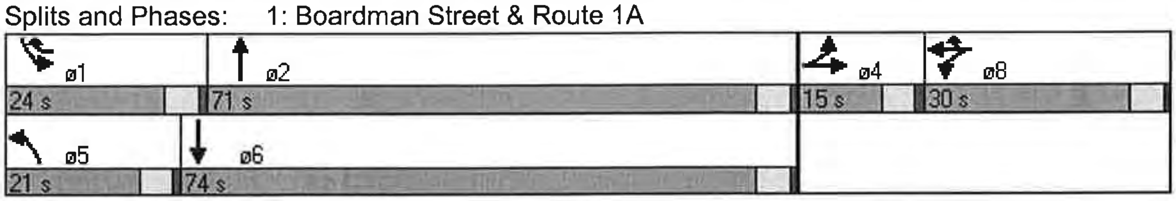
Intersection Summary			
HCM Average Control Delay	59.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	131.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	116	23	230	15	297	110	1896	127	264	1451
Lane Group Flow (vph)	135	122	127	134	316	112	1935	130	281	1566
Turn Type	Split		Split		custom	Prot		Free	Prot	
Protected Phases	4	4	8	8	1 8	5	2		1	6
Permitted Phases					8			Free		
Detector Phases	4	4	8	8	1 8	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	14.0	14.0	21.0	21.0		9.0	21.0		9.0	21.0
Total Split (s)	15.0	15.0	30.0	30.0	54.0	21.0	71.0	0.0	24.0	74.0
Total Split (%)	10.7%	10.7%	21.4%	21.4%	38.6%	15.0%	50.7%	0.0%	17.1%	52.9%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.95	0.55	0.59	0.62	0.43	0.64	1.08	0.09	1.03	0.84
Control Delay	122.8	28.2	57.8	58.3	5.8	67.0	79.5	0.1	117.6	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.8	28.2	57.8	58.3	5.8	67.0	79.5	0.1	117.6	31.0
Queue Length 50th (ft)	116	22	108	115	9	92	~964	0	~255	568
Queue Length 95th (ft)	#251	81	178	188	75	164	#1222	0	#473	#821
Internal Link Dist (ft)		1817		875			624			796
Turn Bay Length (ft)										
Base Capacity (vph)	142	220	301	303	798	206	1787	1507	272	1868
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.55	0.42	0.44	0.40	0.54	1.08	0.09	1.03	0.84

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 131.6
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	11	11	11	12	12	10	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.98	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1661		1702	1705	1546	1719	3539	1507	1787	3414	
Flt Permitted	0.95	1.00		0.98	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1661		1702	1644	1546	1719	3539	1507	1787	3414	
Volume (vph)	49	21	58	231	23	380	66	1497	157	386	1443	24
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	52	22	61	254	25	418	69	1576	165	402	1503	25
RTOR Reduction (vph)	0	58	0	0	0	115	0	0	0	0	1	0
Lane Group Flow (vph)	52	25	0	139	140	303	69	1576	165	402	1527	0
Heavy Vehicles (%)	0%	0%	7%	1%	0%	1%	5%	2%	0%	1%	2%	0%
Turn Type	Split			Split		custom	Prot		Free	Prot		
Protected Phases	4	4		8	8	1 8	5	2		1	6	
Permitted Phases						8			Free			
Actuated Green, G (s)	6.0	6.0		18.2	18.2	51.5	6.8	50.6	123.1	28.3	72.1	
Effective Green, g (s)	7.0	7.0		19.2	19.2	52.5	7.8	51.6	123.1	29.3	73.1	
Actuated g/C Ratio	0.06	0.06		0.16	0.16	0.43	0.06	0.42	1.00	0.24	0.59	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	103	94		265	266	659	109	1483	1507	425	2027	
v/s Ratio Prot	c0.03	0.02		0.08	c0.08	0.20	0.04	c0.45		c0.22	0.45	
v/s Ratio Perm									0.11			
v/c Ratio	0.50	0.27		0.52	0.53	0.46	0.63	1.06	0.11	0.95	0.75	
Uniform Delay, d1	56.4	55.6		47.8	47.8	25.2	56.3	35.7	0.0	46.1	18.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	1.6		1.9	1.9	0.5	11.4	42.0	0.1	30.0	1.6	
Delay (s)	60.2	57.2		49.6	49.6	25.7	67.7	77.8	0.1	76.1	20.0	
Level of Service	E	E		D	D	C	E	E	A	E	C	
Approach Delay (s)		58.3			35.3			70.3			31.7	
Approach LOS		E			D			E			C	

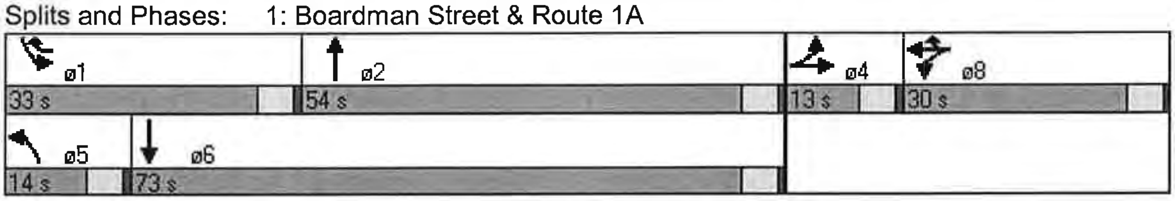
Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	49	21	231	23	380	66	1497	157	386	1443
Lane Group Flow (vph)	52	83	139	140	418	69	1576	165	402	1528
Turn Type	Split		Split		custom	Prot		Free	Prot	
Protected Phases	4	4	8	8	1 8	5	2		1	6
Permitted Phases					8			Free		
Detector Phases	4	4	8	8	1 8	5	2		1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	13.0	13.0	21.0	21.0		9.0	21.0		9.0	21.0
Total Split (s)	13.0	13.0	30.0	30.0	63.0	14.0	54.0	0.0	33.0	73.0
Total Split (%)	10.0%	10.0%	23.1%	23.1%	48.5%	10.8%	41.5%	0.0%	25.4%	56.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		None	None		None	None
v/c Ratio	0.42	0.49	0.51	0.52	0.53	0.53	1.07	0.11	0.93	0.74
Control Delay	66.2	30.3	50.3	50.3	14.9	69.3	78.9	0.1	75.4	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	30.3	50.3	50.3	14.9	69.3	78.9	0.1	75.4	23.6
Queue Length 50th (ft)	41	17	108	109	124	55	~770	0	325	506
Queue Length 95th (ft)	87	72	177	178	219	109	#965	0	#558	663
Internal Link Dist (ft)		1817		875			464			1106
Turn Bay Length (ft)										
Base Capacity (vph)	132	178	348	349	825	139	1477	1507	433	2066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.47	0.40	0.40	0.51	0.50	1.07	0.11	0.93	0.74

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 120.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
~ 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: 1: Boardman Street & Route 1A



Boardman Street at Leyden Street

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	201	439	0	9	109
Peak Hour Factor	0.93	0.93	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	0	216	462	0	11	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	462				678	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	462				678	462
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	79
cM capacity (veh/h)	1110				421	604

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	216	462	140
Volume Left	0	0	11
Volume Right	0	0	130
cSH	1700	1700	584
Volume to Capacity	0.13	0.27	0.24
Queue Length 95th (ft)	0	0	23
Control Delay (s)	0.0	0.0	13.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	316	406	0	5	32
Peak Hour Factor	0.77	0.77	0.88	0.88	0.77	0.77
Hourly flow rate (vph)	0	410	461	0	6	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	461				872	461
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	461				872	461
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				98	93
cM capacity (veh/h)	1110				324	604

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	410	461	48
Volume Left	0	0	6
Volume Right	0	0	42
cSH	1700	1700	541
Volume to Capacity	0.24	0.27	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.0	12.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.3
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	443	477	0	8	43
Peak Hour Factor	0.80	0.80	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	0	554	636	0	9	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	636				1190	636
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636				1190	636
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				96	90
cM capacity (veh/h)	957				209	481

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	554	636	55
Volume Left	0	0	9
Volume Right	0	0	46
cSH	1700	1700	400
Volume to Capacity	0.33	0.37	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	15.4
Lane LOS			C
Approach Delay (s)	0.0	0.0	15.4
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	211	461	0	9	115
Peak Hour Factor	0.93	0.93	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	0	227	485	0	11	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	485				712	485
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	485				712	485
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	77
cM capacity (veh/h)	1088				402	586

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	227	485	148
Volume Left	0	0	11
Volume Right	0	0	137
cSH	1700	1700	567
Volume to Capacity	0.13	0.29	0.26
Queue Length 95th (ft)	0	0	26
Control Delay (s)	0.0	0.0	13.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.6
Approach LOS			B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	332	427	0	5	34
Peak Hour Factor	0.77	0.77	0.88	0.88	0.77	0.77
Hourly flow rate (vph)	0	431	485	0	6	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	485				916	485
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	485				916	485
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				98	92
cM capacity (veh/h)	1088				305	586

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	431	485	51
Volume Left	0	0	6
Volume Right	0	0	44
cSH	1700	1700	524
Volume to Capacity	0.25	0.29	0.10
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	12.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	466	501	0	8	45
Peak Hour Factor	0.80	0.80	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	0	582	668	0	9	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	668				1250	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668				1250	668
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				96	90
cM capacity (veh/h)	931				192	462

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	582	668	57
Volume Left	0	0	9
Volume Right	0	0	48
cSH	1700	1700	381
Volume to Capacity	0.34	0.39	0.15
Queue Length 95th (ft)	0	0	13
Control Delay (s)	0.0	0.0	16.1
Lane LOS			C
Approach Delay (s)	0.0	0.0	16.1
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	271	523	0	9	115
Peak Hour Factor	0.93	0.93	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	0	291	551	0	11	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	551				842	551
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	551				842	551
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	75
cM capacity (veh/h)	1029				337	538

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	291	551	148
Volume Left	0	0	11
Volume Right	0	0	137
cSH	1700	1700	516
Volume to Capacity	0.17	0.32	0.29
Queue Length 95th (ft)	0	0	29
Control Delay (s)	0.0	0.0	14.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.7
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	385	508	0	5	34
Peak Hour Factor	0.77	0.77	0.88	0.88	0.77	0.77
Hourly flow rate (vph)	0	500	577	0	6	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	577				1077	577
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577				1077	577
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	92
cM capacity (veh/h)	1006				244	520

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	500	577	51
Volume Left	0	0	6
Volume Right	0	0	44
cSH	1700	1700	454
Volume to Capacity	0.29	0.34	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	13.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	534	589	0	8	45
Peak Hour Factor	0.80	0.80	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	0	668	785	0	9	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		955				
pX, platoon unblocked						
vC, conflicting volume	785				1453	785
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	785				1453	785
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				94	88
cM capacity (veh/h)	842				145	396

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	668	785	57
Volume Left	0	0	9
Volume Right	0	0	48
cSH	1700	1700	314
Volume to Capacity	0.39	0.46	0.18
Queue Length 95th (ft)	0	0	16
Control Delay (s)	0.0	0.0	19.0
Lane LOS			C
Approach Delay (s)	0.0	0.0	19.0
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Boardman Street at Ashley Street

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	174	448	0	8	31
Peak Hour Factor	0.89	0.89	0.90	0.90	0.75	0.75
Hourly flow rate (vph)	0	196	498	0	11	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	498				693	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	498				693	498
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				97	93
cM capacity (veh/h)	1077				393	576

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	196	498	52
Volume Left	0	0	11
Volume Right	0	0	41
cSH	1700	1700	526
Volume to Capacity	0.12	0.29	0.10
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	12.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	419	333	0	2	25
Peak Hour Factor	0.88	0.88	0.91	0.91	0.61	0.61
Hourly flow rate (vph)	0	476	366	0	3	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	366				842	366
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	366				842	366
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				99	94
cM capacity (veh/h)	1204				337	684

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	476	366	44
Volume Left	0	0	3
Volume Right	0	0	41
cSH	1700	1700	635
Volume to Capacity	0.28	0.22	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	11.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	454	442	0	12	41
Peak Hour Factor	0.80	0.80	0.98	0.98	0.78	0.78
Hourly flow rate (vph)	0	568	451	0	15	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	451				1019	451
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				1019	451
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				94	91
cM capacity (veh/h)	1120				265	613

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	568	451	68
Volume Left	0	0	15
Volume Right	0	0	53
cSH	1700	1700	472
Volume to Capacity	0.33	0.27	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	13.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	183	471	0	8	33
Peak Hour Factor	0.89	0.89	0.90	0.90	0.75	0.75
Hourly flow rate (vph)	0	206	523	0	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	523				729	523
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	523				729	523
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				97	92
cM capacity (veh/h)	1053				374	558

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	206	523	55
Volume Left	0	0	11
Volume Right	0	0	44
cSH	1700	1700	509
Volume to Capacity	0.12	0.31	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	12.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.9
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	440	350	0	2	26
Peak Hour Factor	0.88	0.88	0.91	0.91	0.61	0.61
Hourly flow rate (vph)	0	500	385	0	3	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	385				885	385
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	385				885	385
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				99	94
cM capacity (veh/h)	1185				318	667

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	500	385	46
Volume Left	0	0	3
Volume Right	0	0	43
cSH	1700	1700	619
Volume to Capacity	0.29	0.23	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	11.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		⅄	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	477	465	0	13	43
Peak Hour Factor	0.80	0.80	0.98	0.98	0.78	0.78
Hourly flow rate (vph)	0	596	474	0	17	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	474				1071	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	474				1071	474
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				93	91
cM capacity (veh/h)	1098				247	594

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	596	474	72
Volume Left	0	0	17
Volume Right	0	0	55
cSH	1700	1700	448
Volume to Capacity	0.35	0.28	0.16
Queue Length 95th (ft)	0	0	14
Control Delay (s)	0.0	0.0	14.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.6
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	189	478	0	8	34
Peak Hour Factor	0.89	0.89	0.90	0.90	0.75	0.75
Hourly flow rate (vph)	0	212	531	0	11	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	531				743	531
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531				743	531
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				97	92
cM capacity (veh/h)	1047				367	552

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	212	531	56
Volume Left	0	0	11
Volume Right	0	0	45
cSH	1700	1700	504
Volume to Capacity	0.12	0.31	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	13.0
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.0
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	446	356	0	2	27
Peak Hour Factor	0.88	0.88	0.91	0.91	0.61	0.61
Hourly flow rate (vph)	0	507	391	0	3	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391				898	391
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391				898	391
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				99	93
cM capacity (veh/h)	1178				312	662

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	507	391	48
Volume Left	0	0	3
Volume Right	0	0	44
cSH	1700	1700	614
Volume to Capacity	0.30	0.23	0.08
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	11.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Volume (veh/h)	0	484	473	0	13	44
Peak Hour Factor	0.80	0.80	0.98	0.98	0.78	0.78
Hourly flow rate (vph)	0	605	483	0	17	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	483				1088	483
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	483				1088	483
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				93	90
cM capacity (veh/h)	1091				241	588

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	605	483	73
Volume Left	0	0	17
Volume Right	0	0	56
cSH	1700	1700	443
Volume to Capacity	0.36	0.28	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.0	0.0	14.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.7
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

Route 1A at Waldemar Avenue

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	117	1128	69	0	2186
Peak Hour Factor	0.91	0.91	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	129	1163	71	0	2376
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2386	617			1234	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2386	617			1234	
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	70			100	
cM capacity (veh/h)	29	430			572	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	129	775	459	1188	1188
Volume Left	0	0	0	0	0
Volume Right	129	0	71	0	0
cSH	430	1700	1700	1700	1700
Volume to Capacity	0.30	0.46	0.27	0.70	0.70
Queue Length 95th (ft)	31	0	0	0	0
Control Delay (s)	16.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	16.9	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	112	2107	122	0	1624
Peak Hour Factor	0.93	0.93	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	120	2195	127	0	1765
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			1266			
pX, platoon unblocked	0.52	0.52			0.52	
vC, conflicting volume	3141	1161			2322	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4178	398			2614	
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	62			100	
cM capacity (veh/h)	1	315			87	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	120	1463	859	883	883
Volume Left	0	0	0	0	0
Volume Right	120	0	127	0	0
cSH	315	1700	1700	1700	1700
Volume to Capacity	0.38	0.86	0.51	0.52	0.52
Queue Length 95th (ft)	43	0	0	0	0
Control Delay (s)	23.3	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	23.3	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	147	1848	130	0	1729
Peak Hour Factor	0.94	0.94	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	156	1925	135	0	1879
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			1212			
pX, platoon unblocked	0.59	0.59			0.59	
vC, conflicting volume	2932	1030			2060	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3580	356			2102	
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	59			100	
cM capacity (veh/h)	3	381			156	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	156	1283	777	940	940
Volume Left	0	0	0	0	0
Volume Right	156	0	135	0	0
cSH	381	1700	1700	1700	1700
Volume to Capacity	0.41	0.75	0.46	0.55	0.55
Queue Length 95th (ft)	49	0	0	0	0
Control Delay (s)	20.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	20.9	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	123	1186	72	0	2297
Peak Hour Factor	0.91	0.91	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	135	1223	74	0	2497
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2508	648			1297	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2508	648			1297	
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	67			100	
cM capacity (veh/h)	24	410			541	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	135	815	482	1248	1248
Volume Left	0	0	0	0	0
Volume Right	135	0	74	0	0
cSH	410	1700	1700	1700	1700
Volume to Capacity	0.33	0.48	0.28	0.73	0.73
Queue Length 95th (ft)	35	0	0	0	0
Control Delay (s)	18.0	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.0	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	118	2214	128	0	1706
Peak Hour Factor	0.93	0.93	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	127	2306	133	0	1854
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			876			
pX, platoon unblocked	0.52	0.52			0.52	
vC, conflicting volume	3300	1220			2440	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4480	512			2839	
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	52			100	
cM capacity (veh/h)	1	266			71	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	127	1538	902	927	927
Volume Left	0	0	0	0	0
Volume Right	127	0	133	0	0
cSH	266	1700	1700	1700	1700
Volume to Capacity	0.48	0.90	0.53	0.55	0.55
Queue Length 95th (ft)	60	0	0	0	0
Control Delay (s)	30.3	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	30.3	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	154	1942	137	0	2007
Peak Hour Factor	0.94	0.94	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	164	2023	143	0	2182
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			1186			
pX, platoon unblocked	0.57	0.57			0.57	
vC, conflicting volume	3185	1083			2166	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4069	398			2289	
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	53			100	
cM capacity (veh/h)	1	347			128	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	164	1349	817	1091	1091
Volume Left	0	0	0	0	0
Volume Right	164	0	143	0	0
cSH	347	1700	1700	1700	1700
Volume to Capacity	0.47	0.79	0.48	0.64	0.64
Queue Length 95th (ft)	61	0	0	0	0
Control Delay (s)	24.3	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	24.3	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	123	1208	72	0	2327
Peak Hour Factor	0.91	0.91	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	135	1245	74	0	2529
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2547	660			1320	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2547	660			1320	
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	66			100	
cM capacity (veh/h)	23	403			530	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	135	830	489	1265	1265
Volume Left	0	0	0	0	0
Volume Right	135	0	74	0	0
cSH	403	1700	1700	1700	1700
Volume to Capacity	0.34	0.49	0.29	0.74	0.74
Queue Length 95th (ft)	36	0	0	0	0
Control Delay (s)	18.4	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.4	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	118	2237	128	0	1736
Peak Hour Factor	0.93	0.93	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	127	2330	133	0	1887
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			876			
pX, platoon unblocked	0.54	0.54			0.54	
vC, conflicting volume	3340	1232			2464	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4503	565			2866	
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	49			100	
cM capacity (veh/h)	0	251			71	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	127	1553	910	943	943
Volume Left	0	0	0	0	0
Volume Right	127	0	133	0	0
cSH	251	1700	1700	1700	1700
Volume to Capacity	0.51	0.91	0.54	0.55	0.55
Queue Length 95th (ft)	66	0	0	0	0
Control Delay (s)	33.2	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	33.2	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	154	1971	137	0	2043
Peak Hour Factor	0.94	0.94	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	164	2053	143	0	2221
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			1186			
pX, platoon unblocked	0.58	0.58			0.58	
vC, conflicting volume	3235	1098			2196	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4121	450			2336	
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	50			100	
cM capacity (veh/h)	1	327			125	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	164	1369	827	1110	1110
Volume Left	0	0	0	0	0
Volume Right	164	0	143	0	0
cSH	327	1700	1700	1700	1700
Volume to Capacity	0.50	0.81	0.49	0.65	0.65
Queue Length 95th (ft)	67	0	0	0	0
Control Delay (s)	26.6	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.6	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Route 1A at Addison Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	30	1266	50	0	2557
Peak Hour Factor	0.58	0.58	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	52	1376	54	0	2779
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2793	715			1430	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2793	715			1430	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	15	362			481	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	52	917	513	1390	1390
Volume Left	0	0	0	0	0
Volume Right	52	0	54	0	0
cSH	362	1700	1700	1700	1700
Volume to Capacity	0.14	0.54	0.30	0.82	0.82
Queue Length 95th (ft)	12	0	0	0	0
Control Delay (s)	16.6	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	16.6	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	16	2132	53	0	1648
Peak Hour Factor	0.50	0.50	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	32	2198	55	0	1791
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3121	1126			2253	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3121	1126			2253	
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	84			100	
cM capacity (veh/h)	9	202			232	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	32	1465	787	896	896
Volume Left	0	0	0	0	0
Volume Right	32	0	55	0	0
cSH	202	1700	1700	1700	1700
Volume to Capacity	0.16	0.86	0.46	0.53	0.53
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	26.1	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	26.1	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	32	1551	73	0	1626
Peak Hour Factor	0.53	0.53	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	0	60	1633	77	0	1767
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2555	855			1709	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2555	855			1709	
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	80			100	
cM capacity (veh/h)	22	306			376	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	1088	621	884	884
Volume Left	0	0	0	0	0
Volume Right	60	0	77	0	0
cSH	306	1700	1700	1700	1700
Volume to Capacity	0.20	0.64	0.37	0.52	0.52
Queue Length 95th (ft)	18	0	0	0	0
Control Delay (s)	19.6	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	19.6	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	32	1331	52	0	2666
Peak Hour Factor	0.58	0.58	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	1447	57	0	2898
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2924	752			1503	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2924	752			1503	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	84			100	
cM capacity (veh/h)	12	342			452	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	55	964	539	1449	1449
Volume Left	0	0	0	0	0
Volume Right	55	0	57	0	0
cSH	342	1700	1700	1700	1700
Volume to Capacity	0.16	0.57	0.32	0.85	0.85
Queue Length 95th (ft)	14	0	0	0	0
Control Delay (s)	17.5	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	17.5	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	17	2241	56	0	1732
Peak Hour Factor	0.50	0.50	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	34	2310	58	0	1883
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3280	1184			2368	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3280	1184			2368	
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	82			100	
cM capacity (veh/h)	7	185			203	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	1540	828	941	941
Volume Left	0	0	0	0	0
Volume Right	34	0	58	0	0
cSH	185	1700	1700	1700	1700
Volume to Capacity	0.18	0.91	0.49	0.55	0.55
Queue Length 95th (ft)	16	0	0	0	0
Control Delay (s)	28.8	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	28.8	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	34	1630	77	0	1709
Peak Hour Factor	0.53	0.53	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	0	64	1716	81	0	1858
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						1184
pX, platoon unblocked	0.64					
vC, conflicting volume	2685	898			1797	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3071	898			1797	
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	78			100	
cM capacity (veh/h)	6	286			348	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	1144	653	929	929
Volume Left	0	0	0	0	0
Volume Right	64	0	81	0	0
cSH	286	1700	1700	1700	1700
Volume to Capacity	0.22	0.67	0.38	0.55	0.55
Queue Length 95th (ft)	21	0	0	0	0
Control Delay (s)	21.2	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	21.2	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	32	1386	52	0	2698
Peak Hour Factor	0.58	0.58	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	1507	57	0	2933
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3001	782			1563	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3001	782			1563	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	83			100	
cM capacity (veh/h)	11	327			428	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	55	1004	559	1466	1466
Volume Left	0	0	0	0	0
Volume Right	55	0	57	0	0
cSH	327	1700	1700	1700	1700
Volume to Capacity	0.17	0.59	0.33	0.86	0.86
Queue Length 95th (ft)	15	0	0	0	0
Control Delay (s)	18.2	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.2	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	17	2287	56	0	1781
Peak Hour Factor	0.50	0.50	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	0	34	2358	58	0	1936
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3355	1208			2415	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3355	1208			2415	
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	81			100	
cM capacity (veh/h)	6	178			194	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	1572	844	968	968
Volume Left	0	0	0	0	0
Volume Right	34	0	58	0	0
cSH	178	1700	1700	1700	1700
Volume to Capacity	0.19	0.92	0.50	0.57	0.57
Queue Length 95th (ft)	17	0	0	0	0
Control Delay (s)	29.9	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	29.9	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	34	1691	77	0	1758
Peak Hour Factor	0.53	0.53	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	0	64	1780	81	0	1911
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						1184
pX, platoon unblocked	0.62					
vC, conflicting volume	2776	931			1861	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3250	931			1861	
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	76			100	
cM capacity (veh/h)	5	272			329	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	1187	674	955	955
Volume Left	0	0	0	0	0
Volume Right	64	0	81	0	0
cSH	272	1700	1700	1700	1700
Volume to Capacity	0.24	0.70	0.40	0.56	0.56
Queue Length 95th (ft)	22	0	0	0	0
Control Delay (s)	22.2	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	22.2	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

Boardman Street at the East Site Driveway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	218	2	11	458	65	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	237	2	12	498	71	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			239		760	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			239		760	238
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		81	99
cM capacity (veh/h)			1328		371	801

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	239	510	79
Volume Left	0	12	71
Volume Right	2	0	9
cSH	1700	1328	394
Volume to Capacity	0.14	0.01	0.20
Queue Length 95th (ft)	0	1	19
Control Delay (s)	0.0	0.3	16.4
Lane LOS		A	C
Approach Delay (s)	0.0	0.3	16.4
Approach LOS			C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	335	2	9	425	83	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	364	2	10	462	90	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			366		847	365
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			366		847	365
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		73	99
cM capacity (veh/h)			1192		330	680

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	366	472	99
Volume Left	0	10	90
Volume Right	2	0	9
cSH	1700	1192	345
Volume to Capacity	0.22	0.01	0.29
Queue Length 95th (ft)	0	1	29
Control Delay (s)	0.0	0.3	19.6
Lane LOS		A	C
Approach Delay (s)	0.0	0.3	19.6
Approach LOS			C

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	471	2	12	498	91	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	512	2	13	541	99	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			514		1080	513
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			514		1080	513
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		58	98
cM capacity (veh/h)			1051		238	561

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	514	554	110
Volume Left	0	13	99
Volume Right	2	0	11
cSH	1700	1051	253
Volume to Capacity	0.30	0.01	0.43
Queue Length 95th (ft)	0	1	52
Control Delay (s)	0.0	0.3	29.8
Lane LOS		A	D
Approach Delay (s)	0.0	0.3	29.8
Approach LOS			D

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Boardman Street at the West Site Driveway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	220	60	0	523	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	239	65	0	568	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			304		840	272
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			304		840	272
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		100	100
cM capacity (veh/h)			1256		335	767

Direction, Lane #	EB 1	WB 1
Volume Total	304	568
Volume Left	0	0
Volume Right	65	0
cSH	1700	1700
Volume to Capacity	0.18	0.33
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	337	53	0	508	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	366	58	0	552	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			424		947	395
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			424		947	395
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		100	100
cM capacity (veh/h)			1135		290	654

Direction, Lane #	EB 1	WB 1
Volume Total	424	552
Volume Left	0	0
Volume Right	58	0
cSH	1700	1700
Volume to Capacity	0.25	0.32
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↑		
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	473	69	0	589	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	514	75	0	640	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			589		1192	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			589		1192	552
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		100	100
cM capacity (veh/h)			986		207	534

Direction, Lane #	EB 1	WB 1
Volume Total	589	640
Volume Left	0	0
Volume Right	75	0
cSH	1700	1700
Volume to Capacity	0.35	0.38
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Route 1A at the South Site Driveway

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	1280	33	0	2698
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1391	36	0	2933
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						704
pX, platoon unblocked	0.53					
vC, conflicting volume	2876	714			1427	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3667	714			1427	
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)	2	374			472	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	928	500	1466	1466
Volume Left	0	0	0	0
Volume Right	0	36	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.55	0.29	0.86	0.86
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	2133	32	0	1781
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	2318	35	0	1936
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						704
pX, platoon unblocked	0.60					
vC, conflicting volume	3304	1177			2353	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4186	1177			2353	
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)	1	184			205	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	1546	808	968	968
Volume Left	0	0	0	0
Volume Right	0	35	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.91	0.48	0.57	0.57
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↱			↑↑
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	1720	39	0	1758
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1870	42	0	1911
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						544
pX, platoon unblocked	0.64					
vC, conflicting volume	2846	956			1912	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3331	956			1912	
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)	4	258			306	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	1246	666	955	955
Volume Left	0	0	0	0
Volume Right	0	42	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.73	0.39	0.56	0.56
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEED Project Checklist

APPENDIX C - LEED Project Checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

Y	?	N	Sustainable Sites		Possible Points: 26
14	2	10			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
		1	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
		3	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
		2	Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
	1		Credit 6.2	Stormwater Design—Quality Control	1
	1		Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
		1	Credit 8	Light Pollution Reduction	1

5		1	Water Efficiency		Possible Points: 10
Y			Prereq 1	Water Use Reduction—20% Reduction	
2			Credit 1	Water Efficient Landscaping	2 to 4
		1	Credit 2	Innovative Wastewater Technologies	2
3			Credit 3	Water Use Reduction	2 to 4

8	2	25	Energy and Atmosphere		Possible Points: 35
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
8	2	9	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
		2	Credit 3	Enhanced Commissioning	2
		2	Credit 4	Enhanced Refrigerant Management	2
		3	Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

5		9	Materials and Resources		Possible Points: 14
Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
1		1	Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

11 2 2 Indoor Environmental Quality — Possible Points: 15

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
	1		Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
	1		Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

3 3 Innovation and Design Process — Possible Points: 6

Y	?	N			
1			Credit 1.1	Innovation in Design: Specific Title	1
1			Credit 1.2	Innovation in Design: Specific Title	1
	1		Credit 1.3	Innovation in Design: Specific Title	1
	1		Credit 1.4	Innovation in Design: Specific Title	1
	1		Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

4 Regional Priority Credits — Possible Points: 4

Y	?	N			
	1		Credit 1.1	Regional Priority: Specific Credit	1
	1		Credit 1.2	Regional Priority: Specific Credit	1
	1		Credit 1.3	Regional Priority: Specific Credit	1
	1		Credit 1.4	Regional Priority: Specific Credit	1

46 13 47 Total — Possible Points: 110

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