EXPANDED PROJECT NOTIFICATION FORM (PNF)

2 H STREET RESIDENTIAL PROJECT

2 H Street, South Boston, MA

JANUARY 2012

Submitted to:
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Submitted & Prepared by:
H Street Partners, LLC
c/o Peter Zagorianakos & Jeff Carter
126 N. Washington Street #5
Boston, MA 02114
(617) 413-6795

In Association with:
Wadleigh & Asssociates, Inc.
McDermott, Quilty, & Miller
Howard/Stein-Hudson Associates, Inc.
Hayes & Asssociates
Geotechnical Consulting Inc.

Table of Contents

APPENDICES

List of Figures

List of Tables

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This Expanded Project Notification Form ("PNF") is being submitted by H Street Partners, LLC (the "Project Proponent") in accordance with the Article 80 Large Project Review requirements of the Boston Zoning Code. The proposal is for a multi-family residential development with 135 residential units and a small 1,600 square foot retail space with associated garage parking for 206 spaces to serve these uses (the "Proposed Project").

The Project Site sits on approximately 66,313 square feet of land (one parcel) at 2 H Street in the South Boston neighborhood of Boston. The Project Site is located within 1.0 mile of the Broadway and Andrew MBTA Stations and within 1/2 mile to the center of the Boston Harbor beaches. For purposes of this proposal, the Project Site will be referred to as 2 H Street.

The Proponent will commence "Large Project Review" under Article 80 of the Code with the simultaneous filing of a Letter of Intent to file an Expanded Project Notification Form and the Expanded PNF. The Proponent has outreached to City agencies, neighborhood representatives and groups, elected officials, and other interested parties over the past several months with respect to the Project. The principals of H Street Partners LLC have attended and participated in the East & West Street Planning and Zoning over the last 24 months and look forward to continuing their collaboration throughout the Article 80 review process.

1.2 Proposed Project

1.2.1 Project Site Description and Context

The Project Site is located in the South Boston neighborhood of Boston along 1st and 2nd Street with close proximity to the Seaport District. As referenced above, the Project Site is bordered by East 1st Street (North), Vicksburg Street (East), East 2nd Street (South), and H Street (West). The parcel is 66,313 square feet of land and is currently owned by Two H Street Corporation. The project Site has approximately 265 feet of frontage on East 1st and East 2nd Street and approximately 250 feet of frontage on Vicksburg and H Streets.

The parcel currently contains an undistinguished two-story masonry structure (approximately 23,700 square feet) along the west part of the property and a paved parking area along the Vicksburg Street part of the parcel. The existing building appears to have no architectural significance.

Directly across East 1st Street from the Project Site are commercial warehouse buildings and associated parking lots leased by Casey & Hayes Movers, and Robert N. Karpp Building Materials. The block across Vicksburg Street has a number of empty residential lots facing Vicksburg, and four to four and one-half story high residential row houses facing East 2nd Street. To the West of the parcel along H Street is the 6-story Distillery building housing a number of galleries, artist studios, and studio apartments. Facing the East 2nd Street side of the Project Site are 6 lots; 3 eastern lots have residential row houses three and one half stories high, and the 3 western lots have vacant and boarded up 2-story high properties. Several of these structures have wood clapboard exteriors and several have brick and masonry exteriors.

1.2.2 Surrounding Area

The Project Site is located 2 blocks north of the East Broadway retail corridor, 5 blocks from Telegraph Hill (Thomas Park) and Christopher Lee playground, within ½ mile of Carson Beach, and within one mile of the West Broadway and Andrew MBTA stations. The Project Site is located in the South Boston Neighborhood of the City of Boston within the First Street Neighborhood Development Area (NDA).

The MBTA Routes 9 and 10 bus stop is located on West Broadway approximately 700 feet south of the Site; the MBTA Route 7 bus-stop is located on L Street/Summer Street approximately 1,000 feet east of the Site; and 2 subway rail stops are located less than a 1 mile to the west and southwest of the Site.

The subway line provides frequent service to South Station (2-minute ride; a regular T-pass is accepted), to Park Street, to Downtown Crossing through Cambridge to Alewife, or in the other direction thru South Boston and Quincy to Braintree.

The immediate area is a dense urban neighborhood with gaps in the typical fabric due to various degrees of demolition over the years. The existing residential buildings on East Second Street are 2 to 4-1/2 story multi-family buildings, some of which are accented with bays. The context is denser to the south and east of the Site and less dense north and east of the site due to large areas of 1 to 2-story industrial warehouses and surface parking. Other amenities in the neighborhood include:

- Joe Moakley Park, a large neighborhood park 0.6 miles southwest of the Project Site;
- Castle Island Park, a neighborhood park 0.7 miles east of the Project Site;
- Medal of Honor Park, a neighborhood park 0.25 miles east of the Project Site;
- Thomas Park, 0.2 miles southeast of the Project Site;
- Institute of Contemporary Art and Bank of America Pavilion less than 1 mile from the Project Site;
- The Boston Convention and Exhibition Center;
- The Distillery Gallery and Lamontagne Gallery;
- South Boston Public Library;
- Various churches and schools and;
- The East Broadway commercial district with its many stores, restaurants and other services including banks, a super market, clothing stores, theater, pharmacy, health center, insurance agency, travel agency, real estate office, beauty salons and barbershops.

The immediate site context along East Second Street has seen moderate level new development in the last several years. This overall project offers enormous potential for a transit-oriented development that can take a major step in weaving back together a more sustainable and invigorated neighborhood.

1.2.3 Project Description

The Proposed Project calls for the development of 135 residential units and garage parking for 206 spaces within the building. Six foot setbacks will be provided at East 2nd and H Streets, and a continuous ten foot setback along the north end of the site extending the length of East 1st Street. Open space for the building residents has been provided in the form of an interior courtyard, balconies, and terraces. A south-facing garden will also be provided.

The existing 2-story warehouse building will be demolished to make space for the new three story building, and the site will be subject to any necessary remediation.

The parking garage, level with East 1st Street and facing the industrial side of the neighborhood, will be entered from East 1st Street and will accommodate approximately 206 parking spaces and a trash/loading zone. There is also a 1,600 square foot retail component at the corner of East 1st Street and Vicksburg Street. In addition, a bike storage area and associated mechanical and storage spaces will be provided at the garage level.

A three-story structure will be built on top of the garage with its entrance and primary access from East 2nd Street. The A-shaped building will follow the setbacks of the property on the north, east

and west streets, and create a courtyard/open air atrium in the middle of the property to bring light and air into the interior apartments. Along East 2nd Street, a semi-private garden will be provided mid-block of East 2nd Street to break the massing of the building's face to the community.

The building will be equipped with 3 elevators, a two-elevator bank at the lobby entrance from East 2nd Street, and a service elevator directly accessible from the East 1st Street for loading, trash, and tenant moving. All elevators will be accessible from the parking garage with no more than one required for roof deck access. The building will be equipped with addressable fire alarm and full sprinkler systems.

Figure 1-1 Project Locus Map

1.3 Summary of Project Impacts and Mitigation

1.3.1 Wind Impacts

The Project is not expected to have any adverse wind impacts on adjacent buildings or open space areas since the proposed building heights are consistent with the buildings within the neighborhood. A wind analysis therefore for the proposed Project was not conducted. The Proposed Project's Street Elevations are depicted clearly in Figures 3-11 and 3-12.

1.3.2 Air Quality Impacts

Given the proposed Project's small scale, no adverse air quality impacts are expected. The proximity of the overall Project Site to public transportation and within 1 ½ mile of the Financial District further decreases the number of vehicle trips added to the nearby intersections. As discussed in Section 5.0 Transportation Component, existing bus and MBTA Commuter Rail line capacities are more than sufficient to handle the number of trips expected to be generated by the proposed Project.

1.3.3 Noise Analysis

The Proposed Project will not have a large-scale noise producing HVAC or other potential noise producing equipment. Each unit will be served by high-efficiency HVAC equipment that will fully comply with sound level limits set by the DEP Noise Policy and the City of Boston Noise Regulations at all times of the day.

1.3.4 Shadow Impacts

A shadow impact analysis was conducted to investigate shadow impacts from the proposed Project. The study tracked the sun and resulting shadow during three time periods (9:00 am, 12:00 noon and 5:00 pm) during the vernal equinox (March 21st), summer solstice (June 21st), autumnal equinox (September 21st), and three time periods (9:00 am, 12:00 noon and 3:00 pm) during the winter solstice (December 21st).

The shadow analysis presents new shadows from the Project, as well as shadows of the existing neighborhood, and illustrates the impact of the Project (see Figures 1-2 to 1-13). The analysis primarily focuses on the impact to the surrounding streets as no existing public spaces or major pedestrian areas exist adjacent to and in the vicinity of the site. New shadows from the proposed Project are generally limited to the streets and sidewalks surrounding the Project site. No new shadow is anticipated to be cast on East 2nd Street (south of the Proposed Building) except during June after 5:00 pm. Minimal shadow impact from the Project will fall on the fronts of neighboring residential buildings.

During the vernal and autumnal equinox (March 21st and September 21st) net new shadow will partially extend into H Street to the East at 9:00 am. At noon, the shadows will extend onto East 1st Street and a portion of the proposed building's internal courtyard. At 5:00 pm in the afternoon, new shadow will extend across Vicksburg Street to the east. No new shadow will be cast on existing open spaces in the vicinity of the Project site.

In June, during the summer solstice, the building's new morning (9:00 am) shadows will partially fall across H Street. At noon, when the sun is at its peak, shadows will be contained within a few feet of the project site. By 5:00 pm, new shadows will reach across Vicksburg Street as well as into the project's internal courtyard.

During winter solstice (December 21st) the sun angle is at its lowest and the days are at their shortest. Daylight is least, and shadows are at their longest. At 9:00 am, the new shadows will cross East 1st Street and impact mostly the parking lots across the street. At noon, new shadows

will be minimal at the three residential sides of the site (H, Vicksburg and East 2nd Streets) and again cast partial shadows at the north parking lots. At 3:00 pm, new shadows will elongate across East 2nd Street. No new shadow will be cast on existing open spaces in the vicinity of the Project site.

Typically, each morning the building shadow will fall over H Street and its sidewalks. At noon, the shadow falls across East 1St Street. As the day progresses, the shadow will cross Vicksburg Street.

Figure 1-2 Shadow Analysis - March 21 - Vernal Equinox – 9:00 AM

Figure 1-3 Shadow Analysis - March 21 - Vernal Equinox – 12:00 PM

Figure 1-4 Shadow Analysis - March 21 - Vernal Equinox – 5:00 PM

Figure 1-5 Shadow Analysis - June 21 - Summer Solstice – 9:00 AM

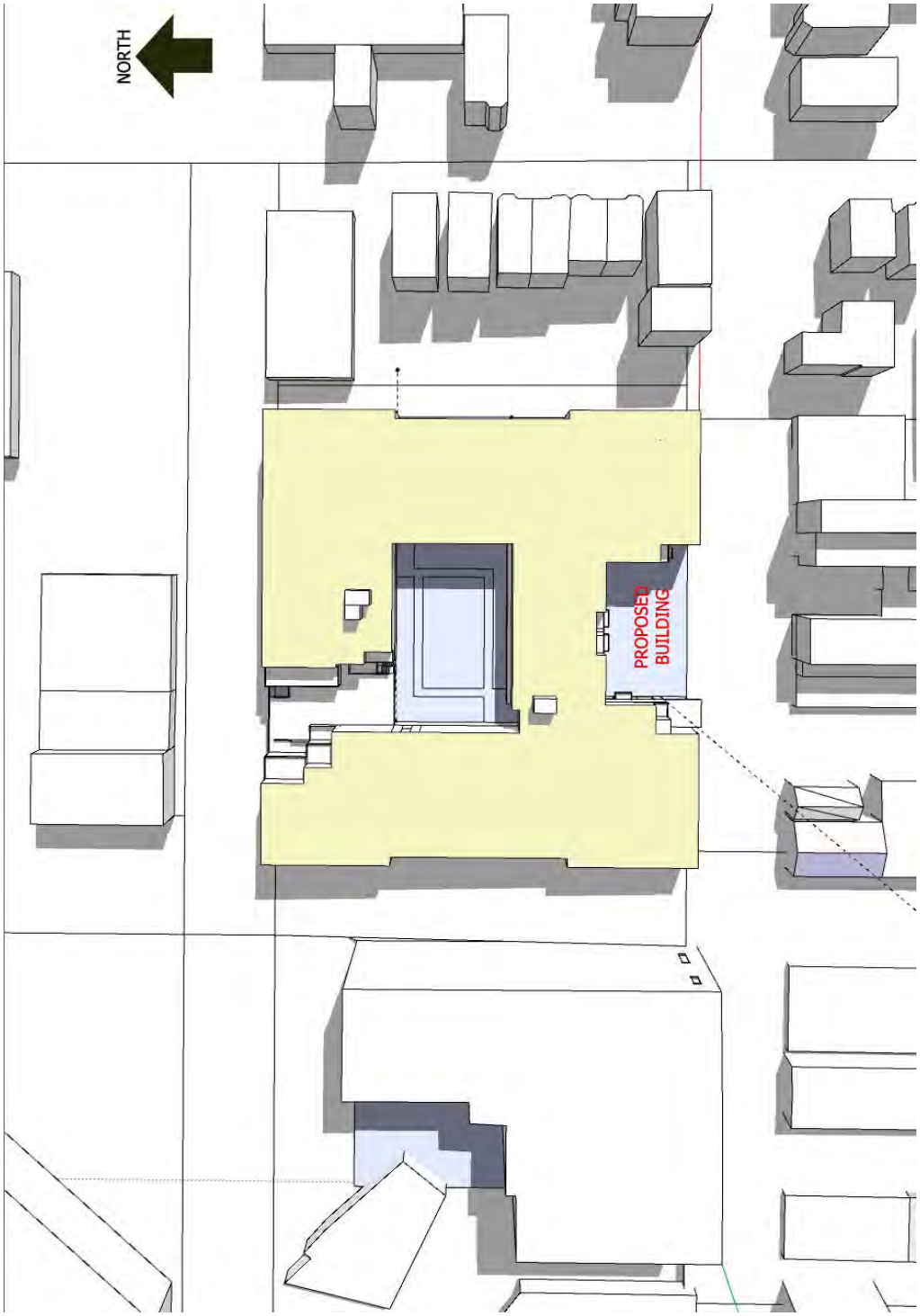


Figure 1-6 Shadow Analysis - June 21- Summer Solstice – 12:00 PM

Figure 1-7 Shadow Analysis - June 21- Summer Solstice – 5:00 PM

Figure 1-8 Shadow Analysis - September 21 – Autumnal Equinox – 9:00 AM

Figure 1-9 Shadow Analysis - September 21 – Autumnal Equinox – 12:00 PM

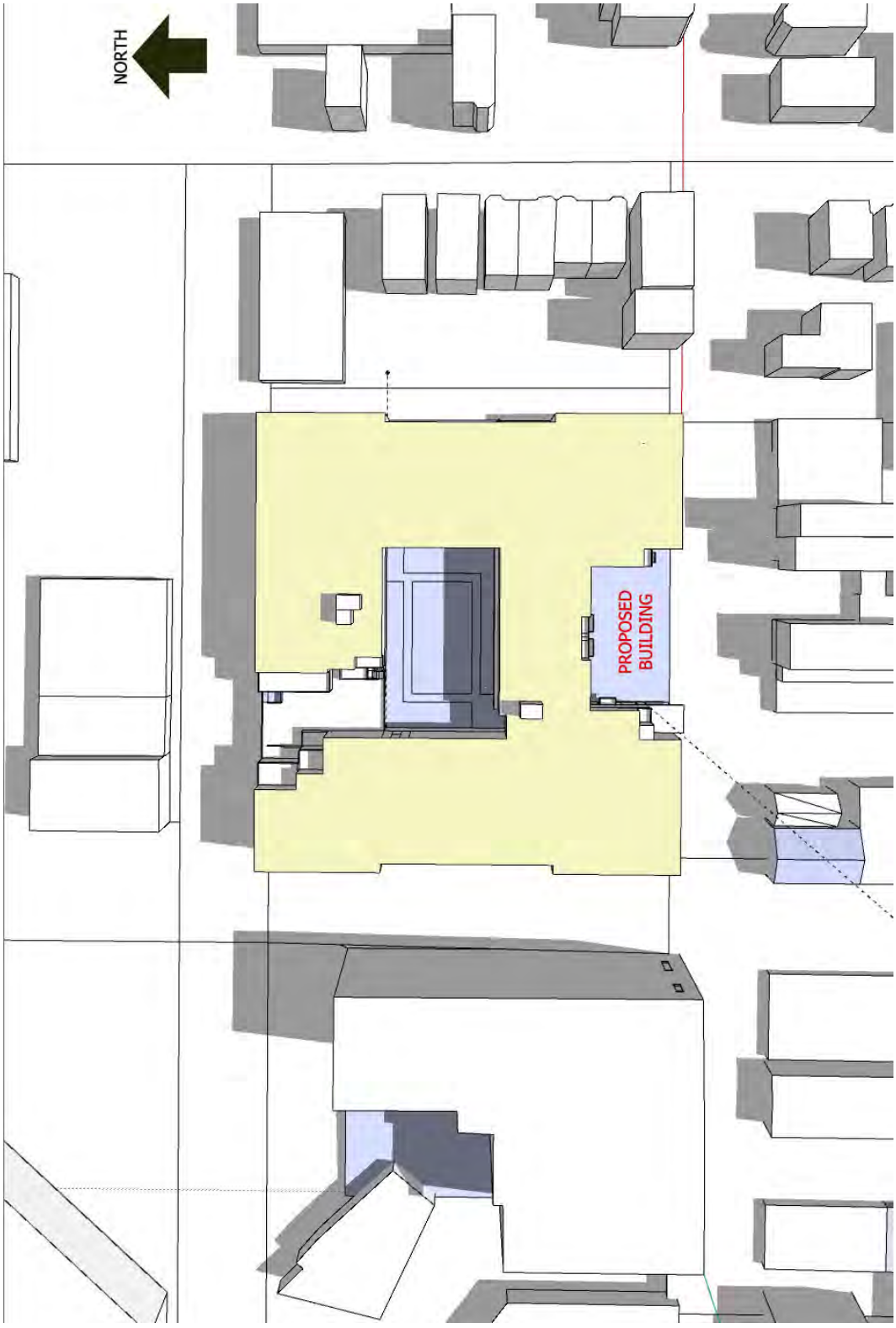


Figure 1-10 Shadow Analysis - September 21 – Autumnal Equinox – 5:00 PM

Figure 1-11 Shadow Analysis - December 21- Winter Solstice – 9:00 AM

Figure 1-12 Shadow Analysis - December 21- Winter Solstice – 12:00 PM

Figure 1-13 Shadow Analysis - December 21- Winter Solstice – 5:00 PM

1.3.5 Daylight Analysis

Daylight obstruction is expected to be limited because the Proposed Project is similar in height to the buildings along East Second Street, and Vicksburg Street. Therefore, daylight obstruction will be consistent with the area context and the Proposed Project should not have a significant impact on daylight in the area

1.3.6 Stormwater Management and Water Quality Analysis

The Proposed Project will not affect the water quality in the area. A Stormwater Management Plan (also see Section 6.4 Storm Drainage System) will be incorporated in compliance with the Department of Environmental Protection's Stormwater's Management Standards prior to being discharged on-site or into the Boston Water and Sewer Commission system. The Proposed Project will also meet or exceed standards as they relate to erosion control, discharge to sensitive areas, and operation and maintenance, to assure a proper functioning system during and post-construction.

1.3.7 Geotechnical and Groundwater Impacts

The Project's environmental and geotechnical consultant, Wadleigh & Associates and Geotechnical Consultants, Inc., has been selected as the environmental and geotechnical consultant for the 2 H Street project. A site specific boring program and accompanying environmental/geotechnical report has been completed prior to this filing, and an overview of the overall Project Site has been included in this document. Background information regarding the geotechnical characteristics of the Project Site is included in Section 4.2. No negative impact to groundwater is anticipated during construction of the Proposed Project.

1.3.8 Solid and Hazardous Materials

Section 4.3 contains information on the solid and hazardous materials located on-site. Environmental investigations/assessments conducted at the Project Site and submitted to the Massachusetts Department of Environmental Protection (MADEP) include the following:

- "Limited Subsurface Investigation Report" dated October 22, 2010 by Wadleigh & Associates of Boston, MA.
- "A Letter Summary" dated October 29, 2010 by Green Environmental of Quincy, MA.
- "MCP – Limited Removal Action Report" dated March 2011 by Green Environmental of Quincy, MA.

Subsurface contamination was detected in the soils at the Project Site by Wadleigh & Associates in October 2010. Laboratory analyses indicated concentrations of lead, extractable petroleum hydrocarbons (EPH), and polynuclear aromatic hydrocarbons (PAHs) were present in the Site soils that exceeded the applicable MADEP Reportable Concentrations for soil. During field activities, Wadleigh & Associates noted the presence of ash in three of the soil borings advanced on the property. In accordance with section 310 CMR 40.317 (9), of the Massachusetts Contingency Plan (MCP), oil or hazardous materials associated with the presence of coal, coal ash, or wood ash may be exempt from reporting under the MCP, and considered "Background".

In an effort to establish a correlation between the presence of lead and the presence of coal, coal ash or wood ash in the soil, Green Environmental (GREEN) had two of the soil samples be examined by Polarized Light Microscopy and Scanning Electron Microscopy with Energy Dispersive X-Ray Spectroscopy (SEM/EDS). On October 14, 2010, soil samples DB-101, S-3, 10-12' & B-108, S-3, 8-12' were delivered to GREEN by Contest Laboratory. On October 15, GREEN submitted these samples under chain of custody to Microvision Laboratories, Inc. for SEM/EDS examination. The presence of tar was identified in sample DB-101, S-3, 10-12'. The

presence of coal and coal ash was identified in sample B-108, S-3, 8-12'. Based upon this information, GREEN believes that the presence of lead (400 mg/kg) identified in boring B-108 can be attributed to the presence of coal and/or coal ash and is exempt from the reporting requirements of the MCP. It was GREEN's opinion that no further action is warranted for the B-108 location. The presence of coal and/or coal ash was not confirmed at boring DB-101; however the presence of tar may be the source of C11-C22 Aromatic hydrocarbons and polycyclic aromatic hydrocarbons (PAHs) previously identified by Wadleigh & Associates to exceed their applicable MCP RCS-1 Reportable Concentration. To address the petroleum and lead issues at DB-101, GREEN recommended completing a Limited Removal Action (LRA) in this area.

On November 23, 2010, GREEN oversaw the excavation of approximately 20 cubic yards of soil on the eastern portion of the site building at the location of former boring/monitoring well DB-101. During excavation activities GREEN observed an urban fill layer located at a depth of approximately 1.2 to 14 feet below ground surface (bgs). The presence of ash, glass, and brick was noted in this layer. Confirmatory soil samples were collected following excavation activities and submitted under chain of custody to Contest Analytical Laboratory in East Longmeadow, Massachusetts for laboratory analysis. Three soil samples were analyzed for the presence of extractable petroleum hydrocarbons (EPH), two samples for total petroleum hydrocarbons (TPH) and two for total lead. On November 23, 2010, following soil excavation activities, GREEN collected confirmatory sidewall and excavation bottom samples as described above. Three soil samples were analyzed for the presence of EPH and two samples for TPH. Prior to the LRA activities, one soil sample collected by Wadleigh & Associates in August 2010 (DB-101, S-3, 10-12') revealed a concentration of C11-C22 Aromatic hydrocarbons of 1,100 milligrams per kilogram (mg/kg) above MCP RCS-1 Reportable Concentrations. Each of the confirmatory data collected by GREEN revealed petroleum concentrations below RCS-1 Reportable Concentrations. Two soil samples (DB-101,S-3,10-12' & B-108, S-3, 8-12') collected by Wadleigh & Associates in August and September 2010 revealed elevated concentrations of lead. During field activities, Wadleigh & Associates noted the presence of ash in three of their soil borings advanced across the property. In an effort to establish a correlation between the presence of lead and the presence of coal, coal ash or wood ash in the soil, GREEN recommended that these two soil samples be examined by Polarized Light Microscopy and Scanning Electron Microscopy with Energy Dispersive X-Ray Spectroscopy (SEM/EDS). On October 14, 2010, soil samples DB-101, S-3,10-12' & B-108, S-3, 8-12' were delivered to GREEN by Contest Laboratory. On October 15, GREEN submitted these samples under chain of custody to Microvision Laboratories, Inc. SEM/EDS examination. The presence of tar was identified in sample DB- 101, S-3,10-12'. The presence of coal and coal ash was identified in sample B-108, S-3, 8-12'. As part of LRA activities in November 2010, GREEN submitted soil samples for the presence of total lead and RCRA 8 Metals laboratory analysis. These analyses revealed elevated concentrations of lead and cadmium in the stockpile and in excavation sidewall samples. Sidewall sample SW-2, 4-7', which revealed a lead concentration of 1,100 mg/kg, was selected for SEM/EDS examination. The presence of coal ash, tar and asphalt was identified in this sample. In an effort to further evaluate a correlation between the presence of ash in the urban fill and elevated concentrations of metals, GREEN submitted soil samples from above and below the fill layer for total lead analysis. Soil sample 12-10-S1, collected from 0.4 to 1.2 feet bgs, revealed a total lead concentration of 3.3 mg/kg. Additionally, the excavation bottom sample collected at a depth of 14'bgs revealed a total lead concentration of 8.7 mg/kg.

GREEN believes that the elevated concentrations of lead and cadmium are attributable to the presence of coal ash in the urban fill on the Site. Elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), detected above RCS-1, were identified in the stockpile sample. The presence of ash, glass and brick was visually observed during LRA excavation activities. Additionally, elevated PAHs were identified in sample B-108, S-3, 8-12', which revealed the presence of coal ash via SEM/EDS examination. Therefore, GREEN believes that the PAHs are attributable to the presence of coal ash in the urban fill on the Site. GREEN concluded that based upon their field observations and the laboratory analytical data collected, that the Limited Removal Action was successful in removing the elevated concentrations of petroleum

hydrocarbons identified on the eastern portion of the property. Elevated concentrations of lead and cadmium have been detected in the fill material across the property. The presence of coal ash in the fill has been confirmed via examination by Polarized Light Microscopy and Scanning Electron Microscopy. Additionally, the soil data collected above and below the fill layer does not exhibit elevated levels of lead. Cadmium concentrations are below the MassDEP Background Concentrations in urban fill. On March 10, 2011, 32.02 tons of soil was transported to Waste Management in Rochester New Hampshire under a Bill of Lading. Based upon this information GREEN concluded that the elevated concentrations of metals are attributable to ash, and therefore exempt from reporting under the 310CMR 40.0317 (9) of the Massachusetts Contingency Plan. Therefore, no additional environmental investigations are deemed necessary at the Project Site. A copy of the LRA Report, completed by Green Environmental, Inc., of Quincy, Massachusetts has been included in this document.

1.3.9 Construction Impacts

Section 4.4 describes impacts likely to result from the Proposed Project's construction and steps that will be taken to avoid or minimize environmental and transportation-related impacts. The Proponent will employ a general contractor that will be responsible for developing a construction phasing and staging plan and for coordinating construction activities with all appropriate regulatory agencies. The Project's geotechnical consultant, Geotechnical Consulting, Inc., will provide consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

The Project Proponent will comply with all applicable state and local regulations governing construction of the Proposed Project. The Project Proponent will require that the general contractor comply with specific mitigation measures and staging plans to minimize impacts on abutters.

1.3.10 Transportation Impacts

The Project's transportation consultant, Howard/Stein-Hudson Associates, Inc., completed a transportation study (see Section 5.0) for the proposed 2 H Street residential-use development in accordance with the city of Boston's Transportation Access Plan Guidelines (1989). Although the Boston Transportation Department (BTD) has not issued a Transportation Access Plan Scope, this report adheres to the general format requested by BTD. The evaluation includes the following:

- Definition and presentation of existing traffic, including roadway capacities, parking, transit, pedestrian circulation, loading, and Site conditions;
- An evaluation of the project's long-term impacts on traffic, including roadway capacities, parking, transit, pedestrian circulation, loading, and Site conditions;
- An evaluation of the project's short-term traffic impacts related to construction activity; and
- Identification of appropriate measures to mitigate project impacts including but not limited to roadway improvements, pedestrian amenities, a transportation demand management program, and participation in Transportation Management Associations.

1.3.11 Infrastructure Systems Component

Section 6.0 describes the existing utility systems servicing the Project area; discusses any probable impacts that the Proposed Project may have on the utilities; and identifies mitigation measures to address potential impacts of the proposed Project.

The Project Proponent has initiated contact with those responsible for the area's utility systems, including the Boston Water and Sewer Commission (BWSC) to understand and evaluate each

system and design the Proposed Project to prevent disruption of utility services. A BWSC Site Plan and General Service Application is required for the proposed new water, sewer and drain connections. In addition, a Pollution Prevention Plan will be submitted specifying best management measures for protecting the BWSC drainage system during construction. A Drainage Discharge permit will also be required prior to discharge of any construction dewatering.

2.0 GENERAL INFORMATION

2.1 Proponent Information

2.1.1 Project Proponent

The principals of H Street Partners, LLC have a 25-year track record of acquiring and developing in the greater Boston community, with an aggregate value in excess of $100 million dollars. The principals continue to acquire, manage, and develop sites in the local area, with particular emphasis in the urban Boston market. As the primary investor and operating partner, the principals invest their own equity capital and handle all aspects of the development process internally, which includes, but is not limited to, acquisition; permitting; financing; construction, and management.

Over the past twenty years, the principals have owned and operated several properties in and around the City of Boston, including:

- 154 West Second Street, a 75-unit apartment development in South Boston
- 85 Bolton Street, a 46,000 square foot bio-tech facility in Cambridge
- 4 Liberty Square, a 25,000 square foot office building in downtown Boston
- 440 Commercial Street, a 20-unit condo conversion in the North End
- 126 North Washington, a 6-unit condo conversion in Boston
- 877 Harrison Ave, a 9-unit condo conversion in the Back Bay
- 10 East Springfield Street, a 4-unit condo conversion in the South End
- 459 Massachusetts Avenue, a 4-unit condo conversion in the Back Bay
- 460 Massachusetts Avenue, a 4-unit condo conversion in the Back Bay
- 515 Centre Street, a 8-unit condo conversion in Newton
- 64 East Brookline Street, a 12-unit condo conversion in the South End
- 5-7 Station Street, a 50,000 square foot self-storage facility in Brookline

In addition, the principals are currently involved in the permitting and construction of the following projects:

- 5-10 St. George Street, a 33-unit residential development in the South End
- 902 East Second Street, a 36-unit residential development in South Boston
- 199 West Brookline, a 9-unit residential development in the South End

The principals have particular expertise in urban development, with their main focus on apartment and condominium development. With their recent success of The Signal Building, a 75-unit apartment project located just blocks from this site, the principals are actively involved and encouraging future development in this particular subsector of Boston, while maintaining and preserving the existing feel of the South Boston neighborhood. The principals hope to continue to create residential housing in the City of Boston; build on its strong economic development base; successfully advocate for an upgraded transportation infrastructure, bring more employment opportunities to the area, and insure that this community is strong and healthy for both long-term and new residents.

2.1.2 Project and Team Information

Proponent:	H Street Partners, LLC 126 N. Washington Street, 5th Floor Boston, MA 02114 (617) 413-6795 c/o Peter Zagorianakos

Architect:	Wadleigh & Associates, Inc. 126 N. Washington Street, 5th Floor Boston, MA 02114 (617) 413-6795 c/o Pedro Hernandez, AIA
Legal Counsel:	McDermott, Quilty & Miller 131 Oliver Street 5th Floor Boston, MA 02110 (617) 946-4600 c/o Dennis Quilty
Transportation Consultant:	Howard/Stein-Hudson Associates, Inc. 38 Chauncy Street, 9th Floor Boston, MA 02111 (617) 482-7080 c/o Guy Busa
Civil Engineer:	Hayes & Associates 40 Harrison Avenue Woburn, MA 01801 (781) 998-0246 c/o Larry Hayes
Environmental Consultant:	Wadleigh & Associates, Inc. 126 N. Washington Street, 5th Floor Boston, MA 02114 (617) 413-6795 c/o Peter Zagorianakos
Geotechnical Engineer:	Geotechnical Consulting, Inc. 201 Boston Post Road West Marlborough, MA 01752 (508)229-0900 c/o Richard Pizzi

2.2 Public Benefits

The Proposed Project will result in numerous public benefits for the South Boston neighborhood and overall for the City of Boston. These benefits include:

- Creation of approximately 135 housing units, consistent with the Mayor's initiative to create more housing in Boston, including in this case, housing for young professionals in close proximity to the Innovation District;
- Replacing an unattractive industrial site with a new, appealing residential building and parking facility, providing functional and aesthetic improvements to the neighborhood;
- Creating an improved streetscape along East 1st and East 2nd Streets with new sidewalks that will be more inviting to pedestrians;
- Construction of courtyards that will provide open landscaped space that improves the visual experience for neighboring residences;
- Promoting a safer 24-hour use in the neighborhood with permanent residents;

- Improving the security and appearance with additional lighting, new trees, and public sidewalks;
- Creating a transit-oriented community;
- Construction-related employment for 18-24 months;
- Generating new property taxes to increase the City's revenues;
- Overall increase in economic development activity in the East Broadway/ H Street area.

2.3 Regulatory Controls and Permits

2.3.1 Current Zoning

2 H Street (the Project Site) is located in the South Boston Neighborhood of the City of Boston. The Project Site is located within the First Street Neighborhood Development Area (NDA) as indicated on Map 4F (South Boston). Per Article 68, Section 39, Table B, of the Zoning Ordinance, residential dwelling units are an allowable use within the First Street NDA sub district.

2.3.2 Proposed Uses and Dimensional Requirements

A breakdown of the various use and dimensional requirements is included in the table below. Once the zoning is finalized and included in the First Street Neighborhood Development Area, the proposed project will be built as-of right in this NDA sub district.

Project Dimensional Summary:

New three story building first floor footprint:	46,160 SF
Total Building Area:	133,626 SF
Land Area:	66,313 SF
Floor Area Ratio:	2.00
Building height along East First Street:	44'-9" feet
Building height East Second Street:	34'-7" feet

Unit Mix:

Garage Floor – 1,600 square foot retail space
1st Floor – 45 residential units (allowable use NDA sub district).
2nd Floor – 45 residential units (allowable use NDA sub district).
3rd Floor – 45 residential units (allowable use NDA sub district).

Total Unit Mix: 135 Market-rate units

Usable open space:

Street landscaped area	5,819 square feet
Courtyards (interior)	8,124 square feet
Courtyard (exterior)	4,990 square feet
Terraces (along H & Vicksburg)	680 square feet
Terrace (2nd floor)	2,500 square feet
Apartment Balconies/Terraces	2,439 square feet
Roof Deck	4,000 square feet
Total Open Space	**28,552 square feet**

Parking Space Mix: **206 total parking spaces**

Article 68 of the Zoning Ordinance and Table E, indicates the following are the relevant dimensional requirements for the residential units proposed within the First Street NDA sub district:

Table 2-1 Zoning Dimensional Requirements

2 H Street Residential Project Proposed			
	Article 68 Zoning Requirements As Residential Use	**Proposed use as 135 residential units**	**Notes**
Use (Multi-family Dwelling)	Allowable	Multi-family Dwelling	Article 68 Table B - First Street NDA
Use (Retail)	Allowable	1,600 SF Retail	Article 68 Table B - First Street NDA
Actual Lot Size - Sq Ft	66,313	66,313	
Maximum Floor Area Ratio (FAR)	2.00	2.00	
Allowable Size of Bldg	132,626	132,626	FAR 2.0 times 66,313 sf of land = 132,626
Lot Area	None	66,313	Article 68 Table E - First Street NDA
Minimum Lot Width	None	265 feet	Article 68 Table E - First Street NDA
Minimum Lot Frontage	None	None	Article 68 Table E - First Street NDA
Building height (stories) max.	3 stories	3 stories	Article 68 Table E - First Street NDA
Building height (feet) max.	35 feet	35 feet	East Second Street
	45 feet	45 feet	East First Street
			Article 68 Table E - First Street NDA
Usable open space.	200 sq ft per unit	211 sq ft per unit	Article 68 Table E - First Street NDA
Min front yard depth. E Second St.	5 feet	6 feet	Article 68 Table E - First Street NDA
Min front yard depth. E First St.	5 feet	10 feet	Article 68 Table E - First Street NDA
Min front yard depth. H St.	5 feet	6 feet	Article 68 Table E - First Street NDA
Min side yard depth.	3 feet	3 feet & 6 feet	Article 68 Table E - First Street NDA
Min rear yard depth.	No rear yard	No rear yard	Article 68 Table E - First Street NDA
Minimum Parking spaces	1.0 spaces/unit	1.53 spaces/unit	Article 68-33 Table G
Number Parking spaces	118 spaces	206 spaces	Article 68-33 Table G
Off Street Loading	1 loading dock	1 loading dock	Article 68-33 Table H

2.3.3 Anticipated Permits & Approvals

In accordance with Article 80-B, the proposed project shall be subject to Large Project Review.

2.4 Legal Information

Legal Judgments or Actions Pending Concerning the Project

The Project Proponent is not aware of any legal judgments or pending actions that relate to the Project.

History of Tax Arrears on Property Owned in Boston by Developer

The Project Proponent owns no real estate in Boston on which real estate tax payments are in arrears.

Evidence of Control Over the Project Site

The Project Site is one parcel currently owned by Two H Street Corporation. The Project Proponent has entered into a legally binding purchase and sales agreement with the property owner.

Nature and Extent of Public Easements On, Over, Under or Surrounding the Property

The project Site is not subject to any easements for public use.

2.5 Public Review Process

The Project Proponent is currently under contract to purchase the Project Site and has been actively participating in the East & West First Street Planning and Rezoning. The Project Proponent has attended multiple community meetings over the last 24 months in the efforts to finalize the zoning along East & West First Street and looks forward to continuing to work with the local community through the formal process.

The Proponent has initiated review with the public agencies, and will continue the outreach to public agencies, elected officials and community groups/interested parties throughout the Article 80 review process. These agencies and community groups included:

Boston Redevelopment Authority
Boston Department of Neighborhood Development
Boston Civic Design Commission
Boston Transportation Department
Boston Department of Public Works
Boston Water and Sewer Commission
Boston Department of Inspectional Services
Massachusetts Department of Environmental Protection
Massachusetts Water Resources Authority

3.0 URBAN DESIGN COMPONENT

3.1 Project Description and Approximate Dimensions

The proposed as-of-right project will be a multi-family residential development to be constructed on approximately 66,313 square feet of land located at 2 H Street in South Boston, MA. The property has frontage on East First Street, H Street, Vicksburg Street, and East Second Street.

The existing building on the site is a two-story structure containing approximately 23,700 square feet. The building was previously used as offices and light manufacturing but is currently vacant, although the yard space is currently being used as equipment storage. The existing structure will be demolished to accommodate the new residential project.

A 265 foot by 235 foot one story parking garage will be constructed. The parking garage will be entered from East First Street and will accommodate approximately 206 parking spaces. The floor elevation of the parking garage will be approximately 12" inches lower than the adjoining East First Street elevation.

A three story structure will be built on top of the garage; an "A" shaped building creating a court yard in the middle of the structure and a mid-block semi private garden open to East Second Street.

The planned project will consist of 135 residential units, 1,600 square foot retail space with a total of 206 parking spaces. The proposed building heights will be within the maximum heights required by zoning; on average 45' and 35' along East 1st and East 2nd respectively. The proposed structure is designed to be at least 30 feet shorter than the Distillery building across H Street, and within the context height of buildings along East 2nd.

The buildings will be equipped with addressable fire alarm systems and full sprinkler systems.

Approximate dimensions and unit counts are provided in Table 2.1 in the previous section.

3.2 Building Design

3.2.1 Facade Design, Fenestration and Entrances

The design of the three-story brick, metal and pre-cast masonry clad building is compatible with the existing industrial and residential urban scale. It will noticeably enhance the neighborhood by reconnecting the gaps in the urban fabric and by infilling the block.

Facade Design

The building will be clad with two stories of brick on a masonry base replicating traditional brick masonry buildings throughout Boston. The third floor of the building has been designed with a metal cladding in order to vary the palette of materials and contribute toward a visually reduced scale similar to a mansard roof building. In addition, recessed third floor balconies around the building are included to break the roofline of the building and reduce its massing and scale fronting the streets.

Along East Second Street, terrace apartments step down to two stories towards the proposed garden. A similar cascading effect will occur on the north side of the building that will provide several benefits. It breaks away the continuous wall effect of a perceived four-story building; opens up the interior courtyard enclosure; creates private and open terraces at different levels for the building residents; and allows for views of downtown to courtyard occupants.

Fenestration

The windows of the building vary along the four street elevations to relate to the context fronting each street. The elevations incorporate large double-hung windows with brick lintels in the masonry facades; and double-hung and floor to ceiling fixed windows in the metal clad bays. The

east, west, and south elevations include bay windows extending vertically several floors to relate to the South Boston residential neighborhood. The north elevation will include protruding balconies and larger glazed openings to be more in relation with the industrial zone across East First Street. Additional storefront glazing will be incorporated on the north elevation street level to bring light into the garage and to reduce the impact of a blank masonry wall.

Entrances

The primary pedestrian entrance to the building is from East Second Street under a canopy that extends over the sidewalk. Vehicular access to the parking garage will be through two garage doors on East First Street. Trash disposal, service elevator and bicycle storage access will also be from East Second; as well as fire department access to sprinkler and electrical rooms. The potential for future retail will be accommodated thru storefront windows and glazed doors that will activate First Street. There will be a door each on Vicksburg and H Streets for emergency stair egress.

Canopies have been designed above the residential and retail entrances.

3.2.2 Floor Plans

The residential units are a mix of one and two bedroom units. All units are flats; typically having the bedrooms defined and an open space living/kitchen/dining area. The unit sizes range from 550 square feet to 1,400 square feet with an average of 850 square feet. Generally, the units span from the window line of one of the facades to the double loaded corridor of the building. Interior facing units have access to light and air through an open atrium courtyard. A large number of units will have balconies and terraces to enliven the street elevations.

3.3 Site Design

3.3.1 Pedestrian Circulation

The primary entry to the building is directly off the sidewalk of East Second Street. Voluntary setbacks are provided on all four sides of the building to provide clearance to neighboring buildings, as well as provide street trees and plantings, and seating to enhance the pedestrian environment.

Accessibility has been designed into the site circulation and building by providing a primary residential entrance level with street, as well as elevators that access all floors, public zones, and open space areas.

3.3.2 Open Space

The open space designed for this development falls into either a private, semi-private, or public category:

- Private balconies and terraces
- Semi-private second floor deck recreation spaces
- Semi-private common courtyard
- The potential for a public retail seating area along East First Street
- A semi-public garden open to the neighborhood on East Second Street

The common courtyard in the center of the building will be developed into useable open space with private terraces and plantings. The courtyard will also provide lighting into many units. A roof deck will be created on the second floor accessible to the building occupants, and with uninterrupted views to downtown Boston.

3.3.3 Parking and Vehicular Circulation

Parking for all the residential units is provided in an enclosed parking garage. The vehicle access and egress will be onto East First Street and will satisfy all accessibility requirements.

The garage will have 140 tandem and 66 single parking spaces, a trash and recycling room, a loading zone, and a bike storage area. All three elevators will access the garage and residential floors.

Figure 3-1 Site Plan

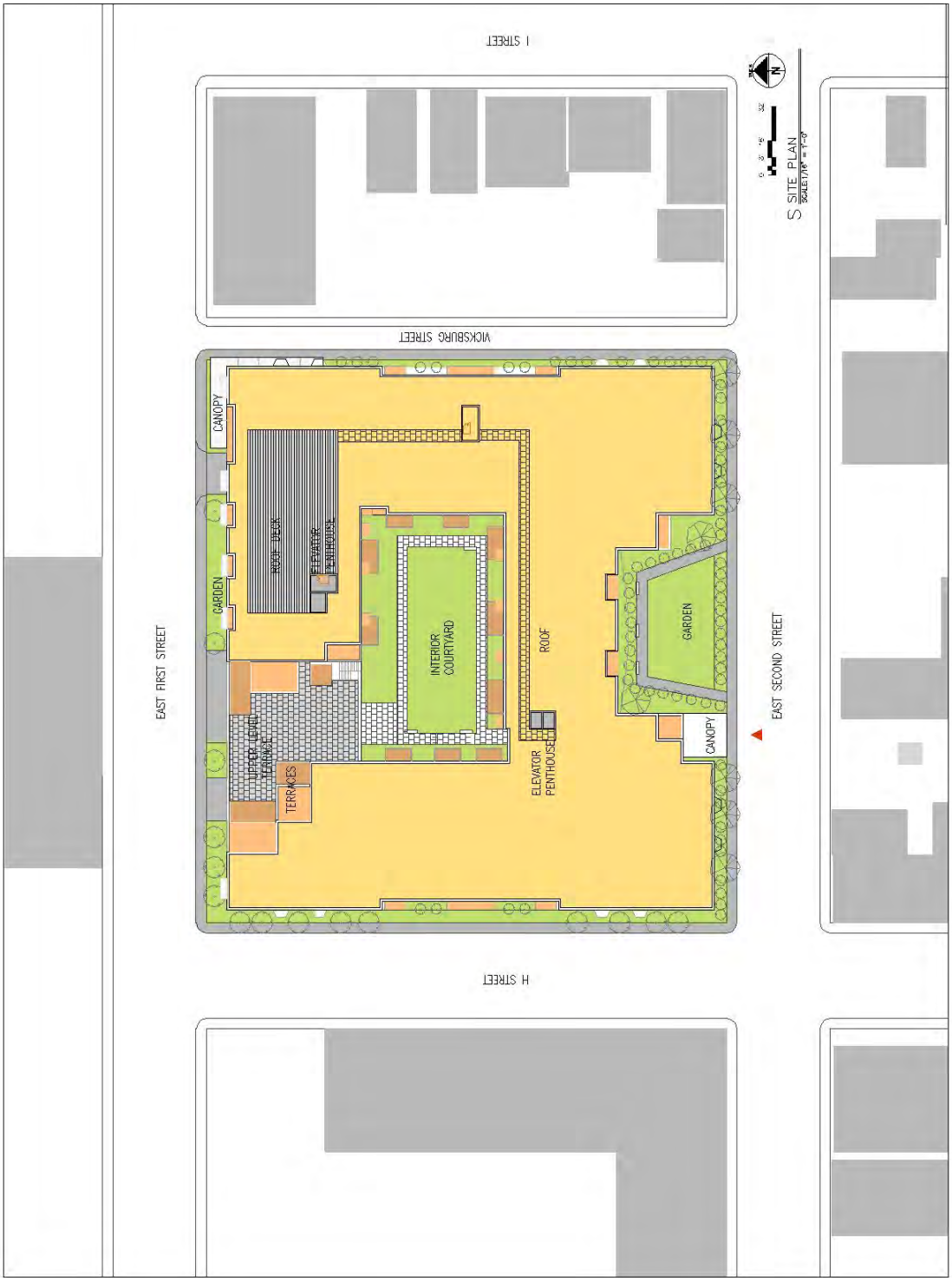


Figure 3-2 Aerial View

Figure 3-3 Northwest View

Figure 3-4 View from East First Street

Figure 3-5 Southeast Corner View

Figure 3-6 Entrance View

Figure 3-7 Parking Level

Figure 3-8 First Level

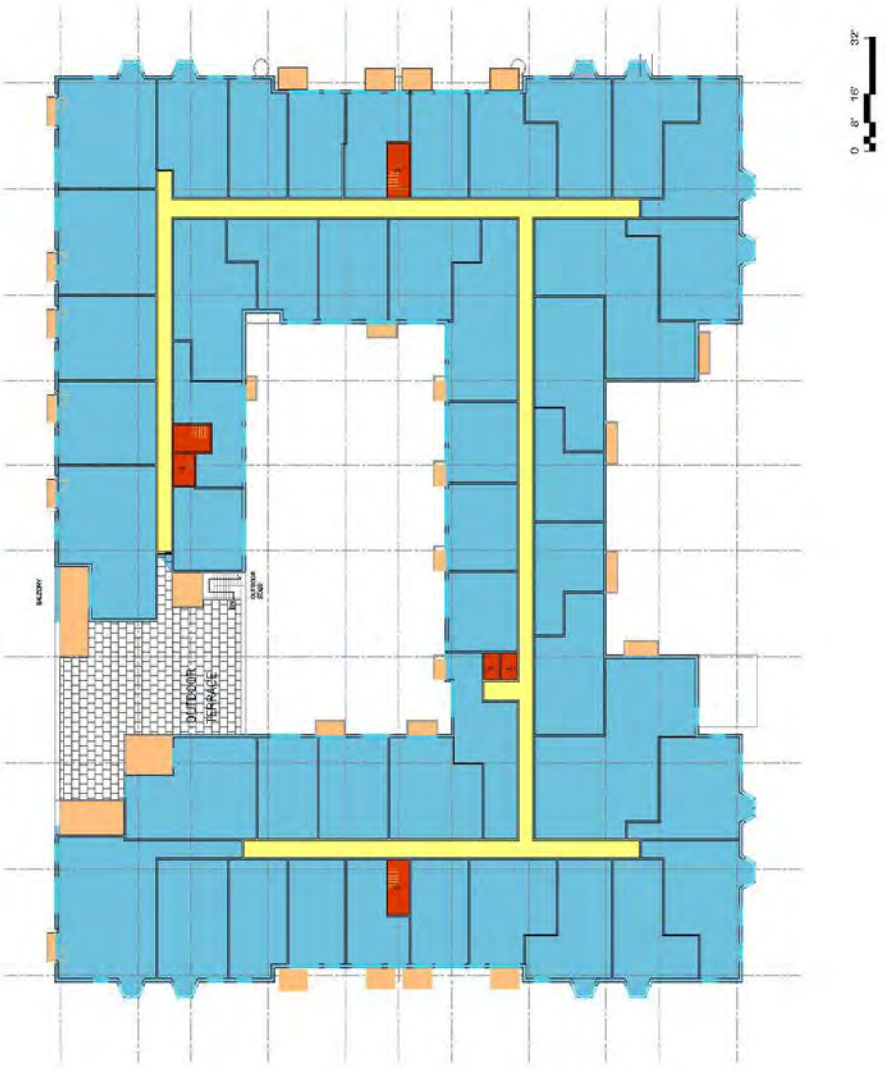


Figure 3-9 Second Level

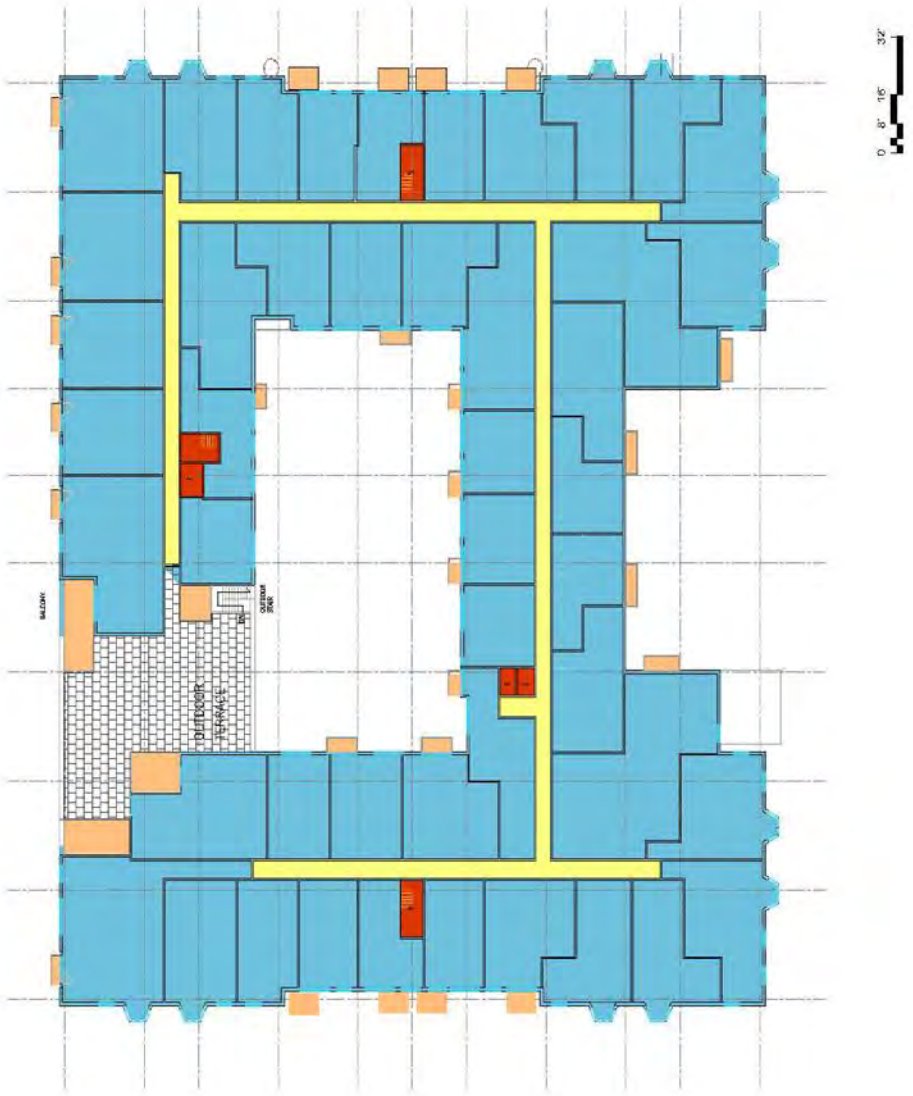


Figure 3-10 Third Level

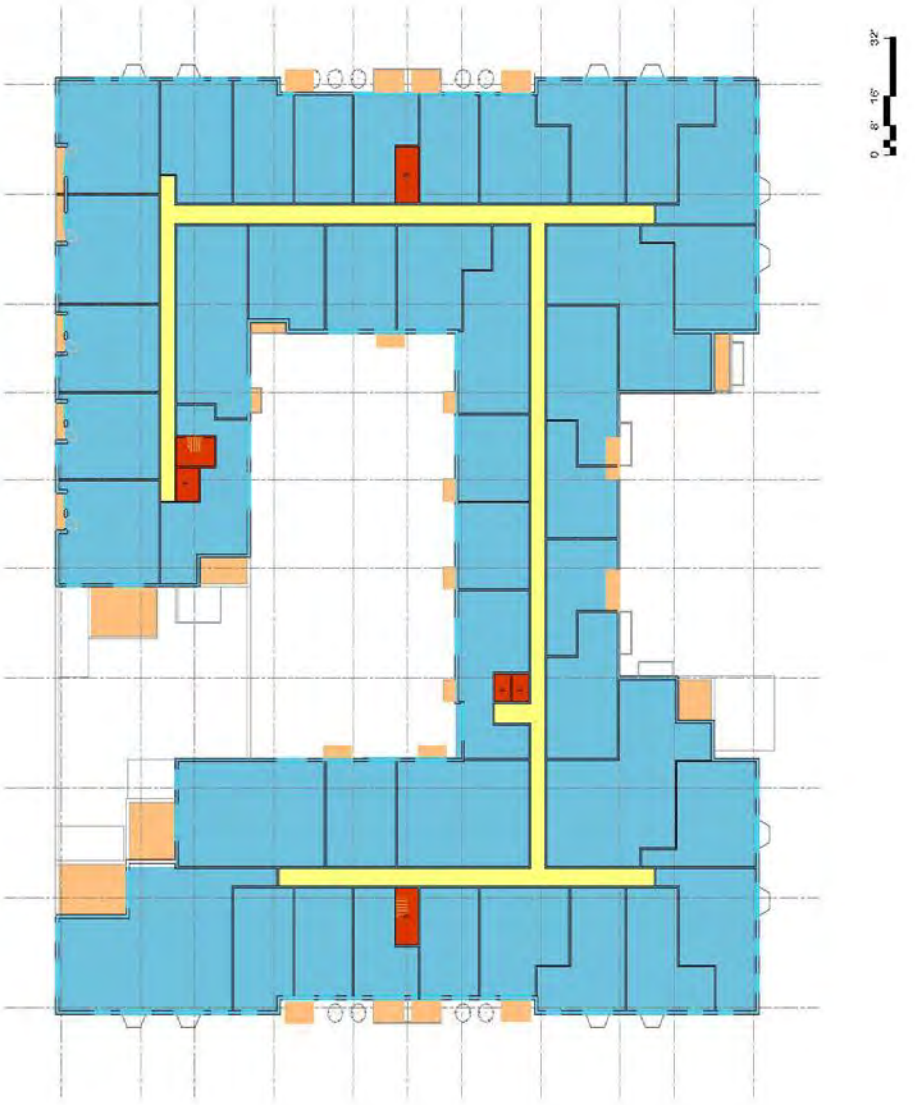


Figure 3-11 North and South Building Elevation

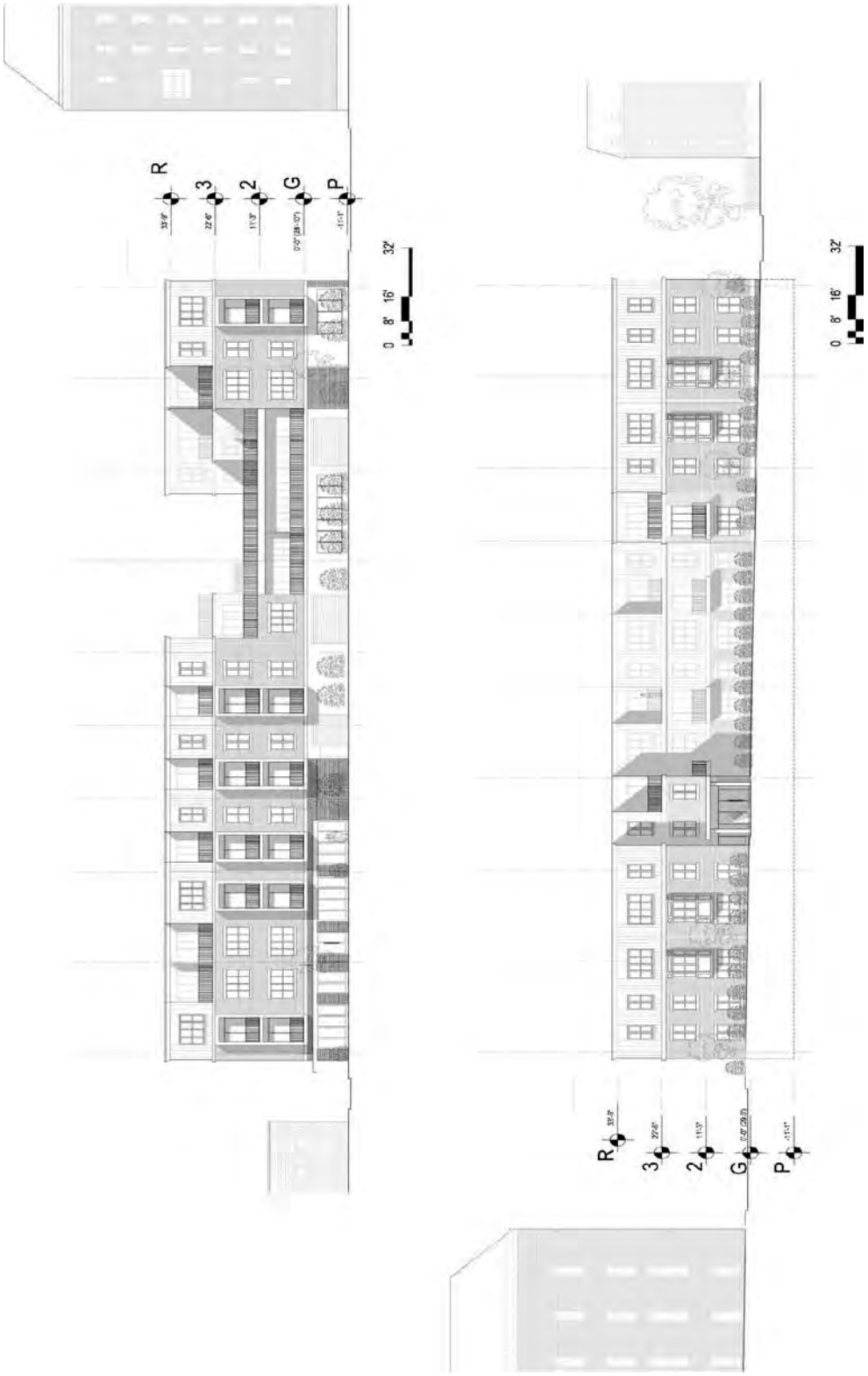
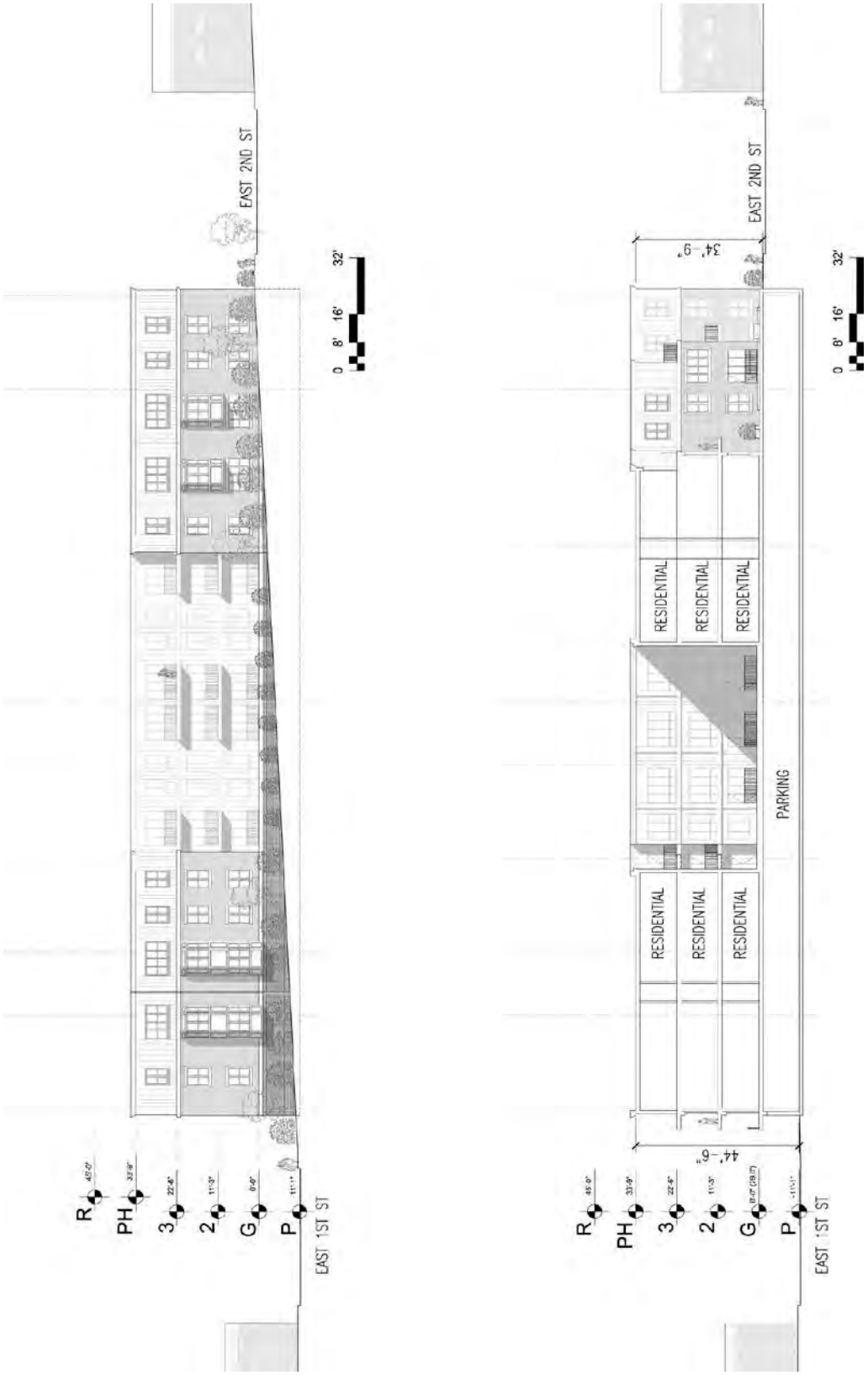


Figure 3-12 East and West Building Elevation



3.4 Sustainable Design and Energy Conservation Measures

The Project Proponent is committed to the practice of sustainable design as demonstrated by both their work with the U. S. EPA's EnergyStar program, and the BRA. The Project Team has begun the process of integrating sustainable strategies throughout the development to minimize building energy use, reduce emissions, and maintain safe and comfortable indoor environments. At the same time, these strategies will also assist in reducing maintenance and management costs. The paragraphs below outline the project's approach to sustainable design, and identify some of the principal proposed strategies.

3.4.1 Implementation and Evaluation

The principal instruments for the implementation and evaluation of energy efficient and sustainable design practices will be the EnergyStar program.

EnergyStar

The U. S. EPA EnergyStar program provides financial incentives and technical assistance to encourage the construction of energy efficient buildings, and is overseen in the Boston area by the Construction Services Group ("CSG") under contract with the EPA.

In addition to consulting with the designers on insulation and ventilation strategies to improve building envelope performance, the CSG provides information and training to the Contractor(s) on means and methods of achieving airtight construction to prevent air infiltration.

EnergyStar provides rebates for the use of certain items when specified and installed in accordance with EnergyStar standards, including:

1. Energy efficient windows;
2. High efficiency boilers and hot water storage tanks;
3. Energy efficient appliances; and
4. Energy efficient light fixtures.

Perhaps most important, on completion, CSG conducts blower door tests on a number of units and in common areas to insure that air leakage is below an allowable maximum value. This test verifies that the sealing of all penetrations through exterior wall, floors and roof has been properly executed and that the building envelope is performing as specified.

Sustainable Sites

Urban Redevelopment Sanborn Maps indicate that the proposed site was previously built upon. A one story industrial building is the only structure that currently exists on the site. The remaining two thirds of the site (about 40,000 s.f.) is a paved parking/storage lot. The Proposed Project will return this vacant site to the more vibrant density of an urban neighborhood.

Alternative Transportation

Two city bus routes are located within 700 feet from the Project Site. About a mile west and southwest of the site are located the Broadway and Andrew T stops of the subway Red Line which terminate at Alewife and Braintree. Please see Section 5.2.6 for further information on buses and the commuter rail.

The use of bicycles by building residents will be promoted by the installation of a covered, secure indoor bicycle storage area within the development.

The Proponent is investigating the possibility of providing a ZipCar parking space at the project's garage facility. This ZipCar would accommodate not only the project's residents but would also be available to other local residents. In addition, dedicated parking spaces and plug-in charge

stations will be provided for the use of electric vehicles, as well as preferential parking for alternative fuel or high efficiency vehicles.

Stormwater Management

The stormwater management system for the Proposed Project will increase on-site recharge and improve off water quality through the use of the following measures:

- On-site treatment of storm water collected from parking areas and other potentially hazardous effluent.

Water Efficiency

Water conservation measures that minimize both water use and wastewater production will include:

- Dual flush toilets that will reduce water usage project-wide, both in residential and non-residential areas.

Energy and Atmosphere

State-of-the art sustainable technologies and practices to be employed by the Proponent for the project's heating, cooling, and ventilation systems include:

- High-efficiency gas fired boilers;
- Indirect-fired, longer life domestic hot water tanks, with additional heavy insulation to save energy;
- Variable frequency drives and high-efficiency motors for circulating pumps
- Direct digital controls (DDC), also called energy management systems (EMS) with modem communication for each boiler plant;
- Added insulation for all piping beyond that required by Code;
- Carbon Dioxide sensor control for ventilation of community spaces;
- High-efficiency lighting that exceeds code requirements;
- Daylight and occupancy control options;
- Automated light sensing set back thermostats for apartment temperature controls;
- Consideration of co-generation systems for the project; and
- Consideration of a solar hot water system for the Project.

Material and Resources

Storage and Collection of Recyclables
A recycling program is planned for the proposed Project. The building will have a recycling transfer room within the building. This program will be coordinated with an outside vendor for weekly pick up.

Construction Waste Management
The Contractor will be required to develop and implement a Waste Management Plan with the goal of recycling or salvaging 75% of construction waste in order to divert construction and demolition debris from landfill disposal.

Regional Materials
The Project Team has established as a goal the specification and installation of materials such that 5% of all materials used in the project will be manufactured regionally within a radius of 500 miles.

Indoor Environmental Quality

Construction Indoor Air Quality Management
The contractor will be required to develop and implement an Indoor Air Quality Management Plan, to prevent indoor air quality problems resulting from the construction process.

Low-Emitting Materials
Adhesives, sealants, paints and carpets will be specified with low/no VOC content to reduce the quantity of indoor air contaminants

Daylight and Views

The building orientation, fenestration and exterior articulation will work in concert to both maximize daylighting and control solar heat gain. All buildings are designed to have significant solar access throughout the day. Larger windows will be incorporated in the facades that best capture and control daylight.

Dwelling units will have large, high windows to maximize daylighting in the living spaces.

Residential common spaces are designed to rely largely on natural light for daytime hours.

4.0 ENVIRONMENTAL PROTECTION COMPONENT

This section of the PNF evaluates potential environmental impacts related to the Proposed Project in the subject areas of water quality and stormwater management, geotechnical and groundwater conditions, solid and hazardous waste, and construction related impacts. Since the Project Site is within the existing zoning height allowance and is generally consistent with the residential character in the surrounding neighborhood, the Project is not expected to have significant impact on surrounding wind patterns and pedestrian comfort levels, or daylight impacts in the Project Site vicinity. Therefore, these specific evaluations were not included in this PNF.

4.1 Water Quality/Stormwater Management

The Proposed Project will not affect the water quality in the area. A Stormwater Management Plan will be incorporated in compliance with the Department of Environmental Protection's Stormwater Management Standards providing pretreatment of the stormwater prior to being discharged on-site or into the Boston Water and Sewer Commission system. The Proposed Project will also meet or exceed standards as they relate to erosion control, discharge to sensitive areas, and operation and maintenance to assure a proper functioning system during and post-construction.

4.2 Groundwater and Geotechnical Analysis

Wadleigh & Associates and Geotechnical Consultants, Inc. have been selected as the environmental and geotechnical consultant for the 2 H Street project. A site specific boring program and accompanying environmental report was completed by Wadleigh & Associates prior to this filing.

Based upon a review of the subsurface soils data (boring logs) collected by Wadleigh & Associates, the overall Project Site is anticipated to contain mainly underlain by glacial outwash or ablation till soils (predominantly loose-medium dense, fine-medium sands, silts and gravels) over hard basal till. Shallow depths to bedrock are unlikely, as refusal was encountered at depths of 64 to 68 feet during drilling activities at the Site, and no bedrock outcrops were observed at the Project Site or within the immediate Site vicinity.

4.3 Solid and Hazardous Waste Analysis

Environmental investigations/assessments conducted at the Project Site and submitted to the Massachusetts Department of Environmental Protection (MADEP) include the following:

- "Limited Subsurface Investigation Report" dated October 22, 2010 by Wadleigh & Associates of Boston, MA.
- "A Letter Summary" dated October 29, 2010 by Green Environmental of Quincy, MA.
- "MCP – Limited Removal Action Report" dated March 2011 by Green Environmental of Quincy, MA.

Subsurface contamination was detected in the soils at the Project Site by Wadleigh & Associates in October 2010. Laboratory analyses indicated concentrations of lead, extractable petroleum hydrocarbons (EPH), and polynuclear aromatic hydrocarbons (PAHs) were present in the Site soils that exceeded the applicable MADEP Reportable Concentrations for soil. During field activities, Wadleigh & Associates noted the presence of ash in three of the soil borings advanced on the property. In accordance with section 310 CMR 40.317 (9), of the Massachusetts Contingency Plan (MCP), oil or hazardous materials associated with the presence of coal, coal ash, or wood ash may be exempt from reporting under the MCP, and considered "Background".

In an effort to establish a correlation between the presence of lead and the presence of coal, coal ash or wood ash in the soil, Green Environmental (GREEN) had two of the soil samples be examined by Polarized Light Microscopy and Scanning Electron Microscopy with Energy Dispersive X-Ray Spectroscopy

(SEM/EDS). On October 14, 2010, soil samples DB-101, S-3, 10-12' & B-108, S-3, 8-12' were delivered to GREEN by Contest Laboratory. On October 15, GREEN submitted these samples under chain of custody to Microvision Laboratories, Inc. for SEM/EDS examination. The presence of tar was identified in sample DB-101, S-3, 10-12'. The presence of coal and coal ash was identified in sample B-108, S-3, 8-12'. Based upon this information, GREEN believes that the presence of lead (400 mg/kg) identified in boring B-108 can be attributed to the presence of coal and/or coal ash and is exempt from the reporting requirements of the MCP. It was GREEN's opinion that no further action is warranted for the B-108 location. The presence of coal and/or coal ash was not confirmed at boring DB-101; however the presence of tar may be the source of C11-C22 Aromatic hydrocarbons and polycyclic aromatic hydrocarbons (PAHs) previously identified by Wadleigh & Associates to exceed their applicable MCP RCS-1 Reportable Concentration. To address the petroleum and lead issues at DB-101, GREEN recommended completing a Limited Removal Action (LRA) in this area.

On November 23, 2010, GREEN oversaw the excavation of approximately 20 cubic yards of soil on the eastern portion of the site building at the location of former boring/monitoring well DB-101. During excavation activities GREEN observed an urban fill layer located at a depth of approximately 1.2 to 14 feet below ground surface (bgs). The presence of ash, glass, and brick was noted in this layer. Confirmatory soil samples were collected following excavation activities and submitted under chain of custody to Contest Analytical Laboratory in East Longmeadow, Massachusetts for laboratory analysis. Three soil samples were analyzed for the presence of extractable petroleum hydrocarbons (EPH), two samples for total petroleum hydrocarbons (TPH) and two for total lead. On November 23, 2010, following soil excavation activities, GREEN collected confirmatory sidewall and excavation bottom samples as described above. Three soil samples were analyzed for the presence of EPH and two samples for TPH. Prior to the LRA activities, one soil sample collected by Wadleigh & Associates in August 2010 (DB-101, S-3, 10-12') revealed a concentration of C11-C22 Aromatic hydrocarbons of 1,100 milligrams per kilogram (mg/kg) above MCP RCS-1 Reportable Concentrations. Each of the confirmatory data collected by GREEN revealed petroleum concentrations below RCS-1 Reportable Concentrations. Two soil samples (DB-101,S-3,10-12' & B-108, S-3, 8-12') collected by Wadleigh & Associates in August and September 2010 revealed elevated concentrations of lead. During field activities, Wadleigh & Associates noted the presence of ash in three of their soil borings advanced across the property. In an effort to establish a correlation between the presence of lead and the presence of coal, coal ash or wood ash in the soil, GREEN recommended that these two soil samples be examined by Polarized Light Microscopy and Scanning Electron Microscopy with Energy Dispersive X-Ray Spectroscopy (SEM/EDS). On October 14, 2010, soil samples DB-101, S-3,10-12' & B-108, S-3, 8-12' were delivered to GREEN by Contest Laboratory. On October 15, GREEN submitted these samples under chain of custody to Microvision Laboratories, Inc. SEM/EDS examination. The presence of tar was identified in sample DB- 101, S-3,10-12'. The presence of coal and coal ash was identified in sample B-108, S-3, 8-12'. As part of LRA activities in November 2010, GREEN submitted soil samples for the presence of total lead and RCRA 8 Metals laboratory analysis. These analyses revealed elevated concentrations of lead and cadmium in the stockpile and in excavation sidewall samples. Sidewall sample SW-2, 4-7', which revealed a lead concentration of 1,100 mg/kg, was selected for SEM/EDS examination. The presence of coal ash, tar and asphalt was identified in this sample. In an effort to further evaluate a correlation between the presence of ash in the urban fill and elevated concentrations of metals, GREEN submitted soil samples from above and below the fill layer for total lead analysis. Soil sample 12-10-S1, collected from 0.4 to 1.2 feet bgs, revealed a total lead concentration of 3.3 mg/kg. Additionally, the excavation bottom sample collected at a depth of 14'bgs revealed a total lead concentration of 8.7 mg/kg.

GREEN believes that the elevated concentrations of lead and cadmium are attributable to the presence of coal ash in the urban fill on the Site. Elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), detected above RCS-1, were identified in the stockpile sample. The presence of ash, glass and brick was visually observed during LRA excavation activities. Additionally, elevated PAHs were identified in sample B-108, S-3, 8-12', which revealed the presence of coal ash via SEM/EDS examination. Therefore, GREEN believes that the PAHs are attributable to the presence of coal ash in the urban fill on the Site. GREEN concluded that based upon their field observations and the laboratory analytical data collected, that the Limited Removal Action was successful in removing the elevated concentrations of petroleum hydrocarbons identified on the eastern portion of the property. Elevated concentrations of lead and cadmium have been detected in the fill material across the property. The presence of coal ash in the fill has

been confirmed via examination by Polarized Light Microscopy and Scanning Electron Microscopy. Additionally, the soil data collected above and below the fill layer does not exhibit elevated levels of lead. Cadmium concentrations are below the MassDEP Background Concentrations in urban fill. On March 10, 2011, 32.02 tons of soil was transported to Waste Management in Rochester New Hampshire under a Bill of Lading. Based upon this information GREEN concluded that the elevated concentrations of metals are attributable to ash, and therefore exempt from reporting under the 310CMR 40.0317 (9) of the Massachusetts Contingency Plan. Therefore, no additional environmental investigations are deemed necessary at the Project Site. A copy of the LRA Report, completed by Green Environmental, Inc., of Quincy, Massachusetts has been included in this document.

4.3.1 Construction Period Waste

The construction contractor will be required to develop and implement a Waste Management Plan with the goal of recycling or salvaging 75% of construction waste in order to divert construction and demolition debris from landfill disposal.

4.3.2 Operational Solid Waste

A development wide recycling program is planned for this project. Each building will have either a recycling transfer room within the building or an exterior recycling transfer shed. This program will be coordinated with an outside vendor for weekly pick-up.

4.3.3 Recycled Materials

The project team has established as a goal the specification and installation of materials such that 5% of all materials used in the project will be post-consumer recycled.

4.4 Construction Impacts

The following section describes impacts likely to result from the Proposed Project's construction and steps that will be taken to avoid or minimize environmental and transportation-related impacts. The Project Proponent will employ a general contractor that will be responsible for developing a construction phasing and staging plan and for coordinating construction activities with all appropriate regulatory agencies. The Project's geotechnical consultant, Geotechnical Consulting, will provide consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

The Project Proponent will comply with all applicable state and local regulations governing construction of the proposed project. The proponent will require that the general contractor comply will specific mitigation measures and staging plans to minimize impacts on abutters.

Proper pre-construction planning with the neighborhood will be essential to the successful construction of this Project. The Project Proponent will convene neighborhood meetings on the subject of minimizing adverse construction activity impacts, including at least one prior to the start of construction and at least two during construction, and more such meetings if feedback from the neighborhood indicates the need for them. Signage will include general contractor and Project Proponent contact information with emergency numbers.

4.4.1 Construction Activity Schedule

The construction period for his project is expected to be approximately 18 months in duration. Typical construction hours will be from 7:00 A.M. to 5:30 P.M. Monday through Saturday. Second shift construction activity is expected to be kept to a minimum.

The general construction contractor will conduct a pre-construction survey of abutting properties. Construction excavation and other construction procedures are to be developed so as to assure that this work will not undermine or adversely affect these structures.

4.4.2 Construction Staging Areas

The proposed staging plan is designated to isolate the construction while providing safe access for pedestrians and automobiles during normal day-to-day activities and emergencies.

Construction of 2 H Street project will be made easier because of the following: the Project Site can be accessed from any of the four adjoining streets to allow main thoroughfares to be maintained clear; the overall Project Site plan includes open areas outside the building footprints which can serve as staging areas during construction. As abutting properties and structures are owned by others, care will be taken to minimize construction impacts on all abutters.

With very rare exceptions, construction vehicles well enter and exit the Project Site from gated entrances located along East First Street which are not major thoroughfares for the neighborhood. The main access point will be from East First Street. In order to minimize the impact on traffic flow along East Second Street, construction vehicles will enter and/or exit from East First Street during non-rush hour time periods.

Gates will be provided at the construction areas to provide both entrance and exit from the overall Project Site. All construction activity will be kept within the overall Project Site. Appropriate signage will be installed along the pedestrian travel-way. The vehicular lanes on public streets will not be obstructed.

Heavy trucking, such as during concrete placements, will be controlled so as not to impact the neighborhood around the overall Project Site more than necessary, and stacking of trucks will be kept to a minimum. In the event stacking of trucks does occur, such as with large concrete pours, the trucks reach the overall Project Site, they will be brought onto the site where materials will be off loaded.

4.4.3 Demolition

The current Site building (2 H Street) will be demolished. Access to the Project Site for demolition and disposal vehicles and equipment (for interior demolition debris) will be from the gated entrances located along East First Street.

Demolition/construction debris will be disposed of into dumpsters and trailer dumps, which will be located at various locations throughout the overall Project Site. Demolition will be conducted so that materials that may be recycled are segregated from those materials not recyclable, to enable disposal at an approved solid waste facility. The Proponent will take an active role with regard to the processing and recycling of demolition and construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, processing, reuse and recycling of materials. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per DEP's Regulations for Solid Waste Facilities, 310 CMR 16.00.

4.4.4 Excavation

Shoring will be used during excavation to the extent required due to proximity to the sidewalk or abutting structures. Setbacks from most side and rear lot lines are such that there will probable be sufficient room to slope the sides of excavations at an angle that does not require shoring at these locations. Excavated material which is not to be reused on-site will be transported in covered trucks to an approved landfill or processing site.

4.4.5 Dewatering

Dewatering will be such that all construction operations are conducted in the dry. Sump pits and pumps will be maintained inside the limits of excavation to collect and discharge water. Operation of the dewatering systems will:

- Result in no damage to adjacent buildings, properties, structures, utilities and completed work.
- Prevent and remove any water accumulating in the excavation.
- Collect and discharge surface water, seepage, groundwater, and other water which may enter excavations.
- Develop dry undisturbed excavation subgrades for execution of subsequent construction operations in the dry.
- Maintain and control the water level in backfill to minimum of two (2) feet below the top of backfill placement and compaction operations.
- Maintain existing groundwater levels outside the excavation limits.

4.4.6 Construction Waste

Normal construction debris will be disposed of into dumpsters, which will be located at various locations throughout the overall Project Site.

4.4.7 Construction Traffic Impacts

Because the construction workers will arrive and depart prior to peak traffic periods, the construction trips are not expected to impact traffic conditions. The general contractor and its subcontractor will be required to recruit workers from the neighborhood to the maximum feasible extent. In addition to other benefits, employing workers who live nearby will reduce the number of personal vehicles driving to the site.

4.4.8 Construction Air Quality

Impacts associated with construction activities may generate fugitive dust, which will result in localized increase in airborne particle levels. Fugitive dust emissions from construction activities will depend on such factors as the properties of the emitting surfaces (e.g., moisture content and volume of spills), meteorological and variables and construction practices employed.

To reduce emissions of fugitive dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials and from demolition;
- All trucks for transportation of construction debris will be fully covered;
- Storage of construction debris on-site will be kept to a minimum
- Actual construction practices will be monitored to ensure those unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible; and
- A wheel wash area will be established to minimize dust and mud accumulations in City streets, or periods street sweeping may be utilized to maintain an acceptable street/sidewalk condition.

4.4.9 Construction Noise

The construction/renovation of 2 H Street project will require the use of equipment that can be heard from off-site locations. Construction is expected to commence on September 1, 2012 and be completed in May 31, 2013 – approximately a 21-month duration. The Proposed Project is committed to mitigate noise impacts of the construction of the project. Increased community sound levels, however, are an inherent consequence of construction activities. The area currently has significant ambient noise due to urban activities including traffic noise from East Second Street, East First Street and H Street, building, mechanical equipment, and aircraft flying overhead. Noise from construction will be kept within applicable regulations regarding time of the day and level.

Construction will occur during the daytime hours as defined by the Boston Noise Regulation. In some instances, weekend and second shifts may be required. When these events arise, all required permits will be in place.

4.4.10 Construction Noise Mitigation

Every reasonable effort will be made to minimize the noise impact of construction activities. Mitigation measures will include:

- Scheduling of work during daytime hours;
- Using appropriate mufflers on all equipment and providing ongoing maintenance of intake and exhaust mufflers;
- Maintaining muffling enclosures on continuously operating equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible – e.g. using vibration pile driving instead of impact driving if practical;
- Selecting the quietest practical items of equipment – e.g., electric instead of diesel powered equipment;
- Selecting equipment operations to keep average levels low, to synchronize noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turn off idle equipment, and;
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

4.4.11 Rodent Control

The City of Boston has declared that the infestation of rodents in the City is a serious problem. In order to control this infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550 and the State Building Code, Section 108..6. Policy Number 87-4 (City of Boston) established that extermination of rodents shall be required for issuance of permits of demolition, excavation, foundation and basement rehabilitation. The Proposed Project will develop a rodent control program prior to its construction start. During construction, rodent control service visits will be made by a certified rodent control firm to monitor the situation.

4.4.12 Utilities

The construction process should not affect the existing utilities. Connections to the existing services will be performed following approval and survey by the Boston Water and Sewer Commission, Nstar and Keyspan. Police details will be utilized to control traffic during street excavations.

4.5 Sustainability

The Project will reduce energy use across systems with strategies such as energy efficient equipment and appropriate insulation in a tight building envelope. No chlorofluorocarbons (CFCs) will be used in cooling equipment. Instead, refrigerants with low ozone depleting/global warming potential will be prioritized.

The Project will achieve compliance with Article 37 of the Boston Zoning Code by being LEED Certifiable under the LEED NC (New Construction) rating system (see Appendix C).

Sustainable highlights of the Project include:
Redevelopment of a currently underutilized transit-oriented site. The Project is in a dense urban area, close to regional and local public transportation. The new residential building will be located proximate to public transportation on the MBTA's Broadway Station - Red line and Bus Routes 7, 9, and 10, encouraging minimal vehicle use.

The Project will embody urban principles encouraging public transportation and pedestrian activity. The use of cars at this site is expected to be minimal in comparison to the public transportation and pedestrian trips. Other transportation related characteristics include:

- The development team will have discussions with Zipcar to potentially include shared-car facilities within the building.
- The Proponent will include two electric car charging stations in the parking garage.
- One bicycle parking space will be included for each residential unit; the majority will be covered.

Mechanical Systems:

- No CFCs will be used in cooling equipment.
- The Project will seek to save energy across systems with energy efficient equipment and appropriate insulation.
- Energy Star appliances, lighting and low-flow fixtures will be integrated into residential units.
- Operable and high-quality insulated glass will allow residents to control air movement within the units.
- High efficiency lighting with occupancy sensors will be incorporated where suitable.

Below is a description of how the Project will achieve the anticipated credits on the LEED for New Construction (NC) version 3.0. The proposed Project is currently estimated at a minimum, to be LEED certifiable, as required by Article 37 of the Boston Zoning Code.

Sustainable Sites (SS)

- SS PreReq 1 Construction Activity Pollution Prevention: An Erosion and Sedimentation Control Plan will be part of the Project.
- SS 1 Site Selection: The site is a previously developed urban infill site.
- SS 2 Development Density: The building is within a dense urban community with a minimum of 88,000 square feet per acre net, as well as on a previously developed site that offers a variety of community connections to basic services.
- SS 4.1 Alternative Transportation - Public Transportation Access: The Project is located proximate to public transportation on the MBTA's Broadway Station - Red line and Bus Routes 7, 9, and 10, encouraging minimal vehicle use.
- SS 4.2 Alternative Transportation - Bicycle Storage and Changing Rooms: Covered storage is provided for 118 bicycles per the City of Boston's transportation department's bike parking regulations. This exceeds the requirement of SS 4.2 for bike storage equal to 15% of building occupants.
- SS 4.3 Alternative Transportation - Low-Emitting and Fuel Efficient Vehicles: Preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site will be provided. Additionally
- Proponent is currently proposing two electric car charging stations and electrical distribution sized to handle an additional charging stations.

- SS 7.1 Heat Island Effect—Non-roof: All parking spaces are provided under cover in the garage.
- SS 7.2 Heat Island Effect—Roof: Roofing materials will investigated with a solar reflectance index (SRI) equal to or greater than a value of 78 for a minimum of 75% of the roof surface.

Water Efficiency (WE)

- WE PreReq Water Use Reduction – 20% Reduction: The Project will employ strategies to use 20% less water in aggregate than the water use baseline calculated for the building.
- WE 1 Water Efficient Landscaping: The landscaping will be designed to not require permanent irrigation systems.
- WE 3 Water Use Reduction: An additional reduction to 30% will be achieved with 1.28 gallon per flush toilets, 1.0 gallon per minute lavatories and 1.75 gallon per minute showers.

Energy and Atmosphere (EA)

- EA Prereq 1 Fundamental Commissioning of Building Energy Systems: The Proponent will verify that the Project's energy-related systems are installed, calibrated and perform according to the owner's Project requirements, basis of design and construction documents.
- EA Prereq 2 Minimum Energy Performance: The Project will establish the minimum level of energy performance rating goal for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.
- EA Prereq 3 Fundamental Refrigerant Management: The Project will reduce stratospheric ozone depletion by minimizing the emission of compounds that contribute to ozone depletion.
- EA 1 Optimize Energy Performance: The proposed building performance will be modeled to show a 20% improvement over the baseline.
- EA 4 Enhanced Refrigerant Maintenance Test: The Proponent will investigate enhanced refrigerant testing.

Materials and Resources (MR)

- MR Prereq 1 Storage and Collection of Recyclables: As required by Boston, recyclable collection will be provided at grade.
- MR 2 Construction Waste Management documents: All contractors being considered for the Project will have an in-place construction waste management plan. These plans typically include knowledge of local options for diversion and a program of documenting the diversion rate for construction waste.
- MR 5 Regional Materials: Regional Materials use are a priority and the Proponent will try to achieve a high Regional Material content value.

Indoor Environmental Quality (IEQ)

- IEQ Prereq 1 Minimum Indoor Air Quality Performance: The Project will meet or exceed minimum indoor air quality performance requirements.
- IEQ Prereq 2 Environmental Tobacco Smoke (ETS) Control: The Project will be designated NO SMOKING.
- IEQ 4.1 Low-Emitting Materials—Adhesives and Sealants: The Project will incorporate low emitting adhesives and sealants.
- IEQ 4.2 Low-Emitting Materials—Paints and Coatings: The Project will incorporate low emitting paints and coatings.
- IEQ 4.3 Low-Emitting Materials—Flooring Systems: The Project will incorporate low emitting flooring systems.
- IEQ 4.4 Low-Emitting Materials—Composite Wood and Agrifiber Products: The Project will strive to integrate, to the maximum extent possible, products that meet the above criteria.
- IEQ 5 Indoor Chemical and Pollutant Source Control: Entryways will capture and control pollutants entering the building; the garage and maintenance areas will be isolated from the rest of the building and exhausted.
- IEQ 6.2 Controllability of Systems—Thermal Comfort: Each unit will benefit by resident control of thermal systems.

- IEQ 8.1 Daylight and Views—Daylight: Daylight will be maximized for each unit. Due to the narrow footprint of the upper floors and expanse of windows, daylighting will penetrate more than 75% of the occupied space.
- IEQ 8.2 Daylight and Views—Views: Connections to the outdoors will be maximized for each unit through large areas of glazing in each unit.

Innovation and Design Process (ID)

- ID 1.1 Training for residents in Green Building: A resident manual will be provided with required LEED materials, and a one hour walkthrough will be provided to familiarize management staff with equipment including operations and maintenance.
- ID 1.2 Exemplary Performance Transit Oriented Development: The Project is within one-half mile of two commuter rail stations and a bus station.

RP 1.1 Regional Priority: SSc2 Development Density: An additional point will be achieved due to the Project's density.

4.6 Historic Resources Component

The overall Project Site does not contain any historical structures and is not within a nationally or locally designated historic district. According to historical records at the Massachusetts Historical Commission and the Massachusetts Cultural Resource Information System (MACRIS), the Project Site (2 H Street) currently contains no building of historic significance.

Other architecturally historical buildings listed by MACRIS within the immediate Project Site vicinity include the following: Bay State Iron Company Worker Housing projects built in 1852, (591-597 East Second Street); a small workshop building from 1899 (564-570 East First Street); the South Boston Power Station built in 1911, located 700 feet from the Project Site (696 East First Street); the Henry Souther row house built in 1880 (1 H Street Place). The Proposed Project will not adversely impact any historical structures or districts.

5.0 TRANSPORTATION COMPONENT

5.1 Introduction

In accordance with the City of Boston's *Transportation Access Plan Guidelines* (2001) and the *BRA Development Review Guidelines* (2006), this chapter describes roadway, pedestrian, and bicycle conditions; transportation issues; parking and loading; pedestrian and bicycle circulation; proposed mitigation; and transportation goals for the Project. Although the Boston Transportation Department (BTD) has not yet issued a formal Transportation Access Plan Scope, the Project team has had preliminary discussions with BTD staff regarding the impacts of the Project in an effort to develop a general scope for this report.

5.1.1 Project Description

The Project site is located at 2 H Street in South Boston and is bounded by East First Street to the north, East Second Street to the south, Vicksburg Street to the east, and H Street to the west. The site currently consists of an approximately 20,000 square foot (sf) building and surface parking lot used to store and repair construction equipment. The proposed Project involves the demolition of the existing 20,000 square foot (sf) building and construction of a new approximately 133,000 sf residential building containing approximately 135 residential units and 206 parking spaces.

The Project will simplify and improve vehicular access to the site by reducing the number of curb cuts, which will create additional, and/or formalize existing on-street parking. Currently, vehicular access to the existing site is not well defined. Primary access points are provided on H Street and a large curb cut on the corner of East First Street and Vicksburg Street, but there are numerous other curb cuts and gates within the existing chain link fence. Several of the existing gates do not appear to be used and are blocked by equipment stored on-site; as a result, vehicles generally park on-street in front of these gates. Similarly, no curbing is provided along the east side of East First Street adjacent to the site making it difficult for motorists to identify access points to the site. Vehicular access to and egress to the Project's parking garage will be provided via separate entrance and exit driveways on East Second Street. All other existing access points will be closed. Primary pedestrian access to the residential lobby will be provided on East Second Street.

Given the residential nature of the project, loading and service activity is expected to be minimal and will occur curb-side. Residential move-in/move-out will be coordinated by building management and may require a temporary on-street parking permit from the City, as necessary.

5.1.2 Methodology

In accordance with BTD *Transportation Access Plan Guidelines* (2001) the study team conducted a transportation analysis for the proposed Project. The analysis is summarized in the following sections:

- The first section comprises an inventory of existing transportation conditions, including roadway and intersection conditions; parking, transit, pedestrian and bicycle circulation; loading; and site conditions.
- The second section evaluates future transportation conditions and assesses potential traffic impacts associated with the proposed development and other neighboring projects. Long-term impacts are evaluated for the year 2016, based on a five-year horizon from the 2011 base year. Expected roadway, parking, transit, pedestrian, and loading capacities and deficiencies are identified. This section includes the following scenarios:
  - The No-Build Scenario (2016) includes general background growth and additional vehicular traffic associated with specific proposed or planned developments and roadway changes in the vicinity of the site; and
  - The Build Scenario (2016) includes specific travel demand forecasts for the Project.
- A third section identifies appropriate measures to mitigate Project-related impacts identified in the previous phase.

- Finally, an evaluation of short-term traffic impacts associated with construction activities is also included.

5.1.3 Study Area

The Project's traffic impact study area, developed in consultation with BTD staff, includes the following three intersections (see **Figure 5-1**):

- D Street/West First Street (signalized);
- Summer Street/East First Street (signalized); and
- East First Street/H Street (unsignalized).

5.2 Existing Conditions

5.2.1 Roadway Conditions

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

D Street is an urban minor arterial south of Summer Street and an urban principle arterial north of Summer Street. D Street runs generally north–south between Sea-port Boulevard to the north and Dorchester Avenue to the south. Within the study area, D Street consists of one to two travel lanes in each direction; however, D Street is one-way northbound between West Second Street and West First Street. On-street parking is provided along both sides of the roadway and consists of a mix of South Boston resident permit and metered parking. Sidewalks are located on both sides of D Street throughout the study area and are generally in good condition.

West First Street, an urban minor collector, runs generally east–west between Dorchester Street to the east and B Street to the west in South Boston. West First Street is one lane in each direction within the study area. Sidewalks are provided on both sides of the roadway and are in poor condition and/or discontinuous in some locations.

Summer Street is an urban principal arterial that runs between Washington Street in Downtown Crossing to the west and East First Street in South Boston to the east, where it then becomes L Street. At its intersection with East First Street, Summer Street is a north-south roadway. Within the study area, Summer Street various between one and two lanes in each direction with on-street parking provided along both sides of the roadway. Sidewalks are provided on both sides of the street. Pavement markings on Summer Street are generally in fair condition within the study area.

East First Street is an east – west roadway that runs between West First Street and Farragut Road. From Farragut Road to Summer Street, East Second Street is classified as an urban principal arterial; from Summer Street to West First Street it is an urban minor arterial. Parking restrictions vary from no parking to parking on one or both sides of the roadway. A single travel lane is provided in each direction.

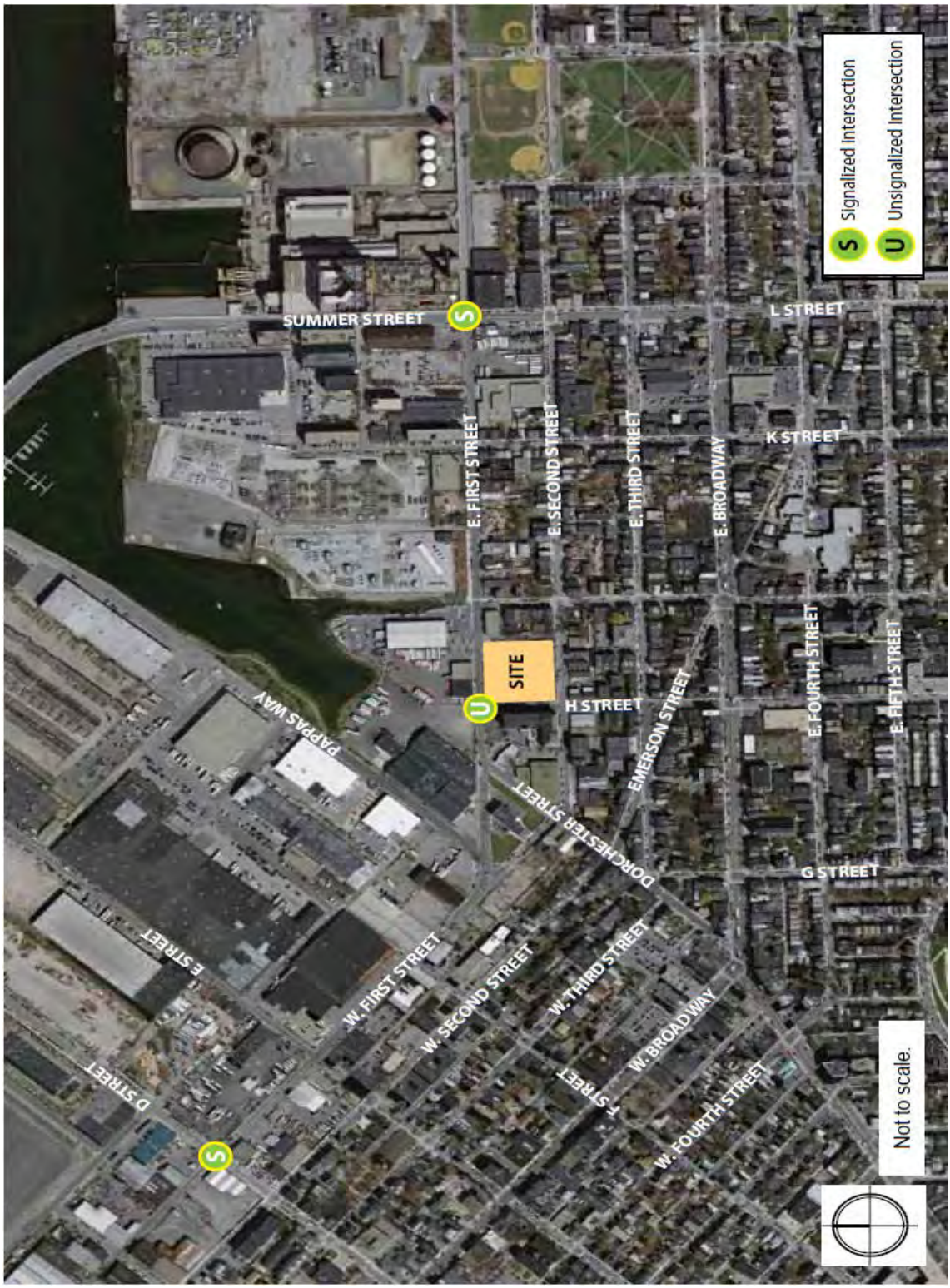
H Street, a local roadway, runs north–south between East First Street and Columbia Road. H Street is one-way northbound from East Broadway to East First Street and one-way southbound from East Broadway to Columbia Road. On-street parking is generally provided along both sides of the roadway.

5.2.2 Intersection Conditions

D Street/West First Street is a signalized, four-leg intersection. The West First Street eastbound approach consists of a 9-foot, exclusive left-turn lane and a 10-foot, exclusive through lane. The West First Street westbound approach consists of an 11-foot exclusive through lane and a 12-foot exclusive right-turn lane. The D Street southbound approach consists of a 10-foot exclusive left-turn lane and a 10-foot exclusive right-turn lane. The D Street northbound approach is one-way northbound and consists of a 12-foot shared left-turn/through lane and an 11-foot exclusive right-

turn lane. The one-way northbound block of D Street was introduced by BTD to discourage southbound through traffic on the street. Similarly, a one-way southbound block was created at Old Colony Boulevard to discourage through traffic in the other direction. No on-street parking is located along any approach at this intersection. Sidewalks are provided along all approaches; 10-foot crosswalks are provided across all approaches of the intersection.

Figure 5-1 Study Area Intersections



Summer Street/East First Street, the first major intersection on Summer Street south of the Boston Harbor Reserved Channel, operates under traffic signal control and has four approaches. The eastbound East First Street approach consists of an 11-foot, shared left-turn/through/right-turn lane. The East First Street westbound approach is marked as one 23-foot lane but functions as a shared left-turn/through lane and a right-turn lane. The northbound Summer Street approach is marked as a single, 27-foot lane but operates as a shared left-turn/through lane, a shared through/right-turn lane, and a parking lane. Summer Street southbound consists of a 12-foot shared left-turn/through lane and a 14-foot shared through/right-turn lane. An MBTA bus stop is located on the east side of Summer Street immediately adjacent to the intersection. Crosswalks with handicapped-accessible ramps are provided across all approaches to this intersection. Concrete or asphalt sidewalks are provided along approaches of this intersection. Sidewalks along the approaches to this intersection are in fair condition. Pavement and pavement markings are in fair condition, although the crosswalks are heavily worn. During field observations, a large number of trucks used this intersection.

H Street/East First Street is four-leg unsignalized intersection. The East First Street eastbound and westbound approaches operate as free movements at the intersection and each consist of one approximately 12-foot multipurpose lane. The H Street northbound approach is stop controlled and consists of one approximately 18-foot left-turn/through/right-turn lane. A commercial driveway serving Comcast forms the southbound approach at the intersection and consists of an approximately 11-foot shared left-turn/right-turn lane; the driveway also operates under stop control.

5.2.3 Traffic Conditions

The study team collected manual vehicle turning movement counts at study area intersections in November 2011 during the weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods. Based on these counts, the weekday peak hours vary throughout the study area, but generally occur between 7:45–8:45 AM and 5:00–6:00 PM. Complete traffic count data are provided in **Appendix B.**

Figure 5-2 and **Figure 5-3** show the existing peak-hour turning volumes for the study area intersections. The existing traffic volumes include the traffic generated by the existing, uses on site.

5.2.4 Traffic Operations

The study team used Trafficware's Synchro 6 software to analyze LOS and delay at study area intersections, which is based on the methodology of the Transportation Research Board's *Highway Capacity Manual 2000* (HCM). HCM methods analyze the capacity of an intersection by determining the LOS, delay (in seconds), volume-to-capacity ratio (v/c), and 95th percentile queue length (in feet), based on the intersection geometry, traffic control, and available traffic data for each intersection.

The ***v/c ratio*** is a measure of congestion at an intersection approach. A v/c ratio of 1 or greater indicates that the intersection approach exceeds capacity.

The ***95th percentile queue length*** represents the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line during 95% of all signal cycles. The 95th percentile queue will not be seen during each cycle. The queue would be this long only 5% of the time. These queues would typically not be seen during off-peak hours.

The Existing Conditions signal timing and phasing information was provided by the Boston Transportation Department (BTD). The study team also conducted field observations to verify Synchro model accuracy as well as to calibrate the model as necessary to match existing traffic conditions as closely as possible.

Table 5-1, derived from the HCM, shows LOS criteria for signalized and unsignalized intersections. LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition (over capacity), with significant traffic delay. LOS D is generally considered acceptable in an urban environment.

Figure 5-2 Existing Conditions (2011) Turning Movement Volumes, AM Peak Hour (7:45-8:45 AM)

Figure 5-3 Existing Conditions (2011) Turning Movement Volumes, PM Peak Hour (5:00-6:00 PM)

Table 5-1 Level of Service Criteria

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

Source: *Highway Capacity Manual 2000*, Transportation Research Board.

Table 5-2 and **Table 5-3** summarize the existing weekday AM peak hour and PM peak hour level of service results for the study area intersections. Capacity analysis reports are provided in **Appendix B.**

Table 5-2 Existing Conditions (2011) Level of Service Summary: AM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**C**	**34.5**	**—**	**—**
West First EB left	C	29.4	0.07	15
West First EB thru	C	30.5	0.14	37
West First WB thru	F	83.2	0.89	#244
West First WB right	A	5.6	0.32	39
D Street WB left/thru	B	15.5	0.23	127
D Street WB right	A	4.4	0.09	22
D Street SB left	E	66.4	0.77	131
D Street SB right	A	5.8	0.26	15
Summer Street/East First Street	**C**	**28.1**	**—**	**—**
East First EB left/thru/right	E	77.7	0.91	#170
East First WB left/thru	D	37.6	0.41	120
East First WB right	A	9.9	0.68	97
Summer NB left/thru | thru/right	C	30.6	0.87	#448
Summer SB left	D	37.5	0.77	#99
Summer SB thru/right	A	8.3	0.28	133
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	2.8	0.05	—
East First WB thru/right	A	0.0	0.24	—
H NB left/thru/right	C	18.3	0.28	—
Driveway SB left/right	B	13.6	0.13	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.

Table 5-3 Existing Conditions (2011) Level of Service Summary: PM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**C**	**21.2**	—	—
West First EB left	C	30.8	0.04	12
West First EB thru	C	32.3	0.14	45
West First WB thru	D	49.5	0.47	88
West First WB right	A	2.8	0.10	14
D Street WB left/thru	C	26.5	0.12	88
D Street WB right	A	8.6	0.10	32
D Street SB left	C	26.2	0.58	120
D Street SB right	A	2.1	0.26	5
Summer Street/East First Street	**B**	**16.5**	—	—
East First EB left/thru/right	D	45.7	0.76	128
East First WB left/thru	C	34.5	0.40	48
East First WB right	A	9.5	0.34	37
Summer NB left/thru | thru/right	B	15.2	0.31	110
Summer SB left	B	11.5	0.27	130
Summer SB thru/right	B	19.0	0.69	#855
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	0.5	0.01	—
East First WB thru/right	A	0.0	0.09	—
H NB left/thru/right	B	11.8	0.13	—
Driveway SB left/right	B	10.1	0.07	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.

All of the study area intersections operate at a good overall LOS (LOS D or better) during both peak hours. Only three individual intersection approaches operate below LOS D:

- ***West First Street/D Street –*** during the AM peak hour, the West First Street westbound through lane operates at LOS F. This is likely due to the relatively small amount of green time given to the westbound approach compared to the relatively large volume of westbound traffic (approximately 170 vehicles per hour). The D Street southbound left-turn lane operates at LOS E.
- ***Summer Street/East First Street –*** during the AM Peak hour, the East First Street eastbound shared left-turn/through/right-turn approach operates at LOS E.

5.2.5 Parking

On-Street Parking

Figure 5-4 presents an inventory of existing curb use and parking restrictions adjacent to the Project site. On-street parking is generally a mix of unrestricted or South Boston resident permit parking. Parking is prohibited along both sides of Vicksburg Street.

During the time of this study parking was also prohibited along the north side of East First Street across the street from the Project site due to ongoing construction work by the Boston Water and Sewer Commission (BWSC).

Figure 5-4 Existing On-street Parking Adjacent to the Project Site

Off-Street Parking

The closest public parking facility is the 1,345-space Boston Convention & Exhibition Center (BCEC) South Parking lot, located approximately one-half mile (10- to 15-minute walk) from the Project site. Parking for 400 vehicles is also provided within the Westin Boston Waterfront Garage approximately three-quarters of a mile from the Project site.

5.2.6 Public Transportation

The Project site is located within convenient walking distance to Massachusetts Bay Transportation Authority (MBTA) local bus service. Public transportation services within approximately a quarter- mile (5- to 10-minute walk) of the Project site are summarized in **Table 5-4** and illustrated in **Figure 5-5.**

Table 5-4 Transit Service in the Study Area

Transit Line/ Bus Route	Route Description	Peak Period Headway (minutes)
5	City Point – JFK UMass via Andrew Station and McCormack Housing	60
7	City Point – Otis and Summer Streets via Summer Street	15
9	City Point – Copley Square via Broadway Station	10 or less
10	City Point – Copley Square via Andrew Station and Boston University Medical Center	20-35

Source: MBTA.com, November 2011.

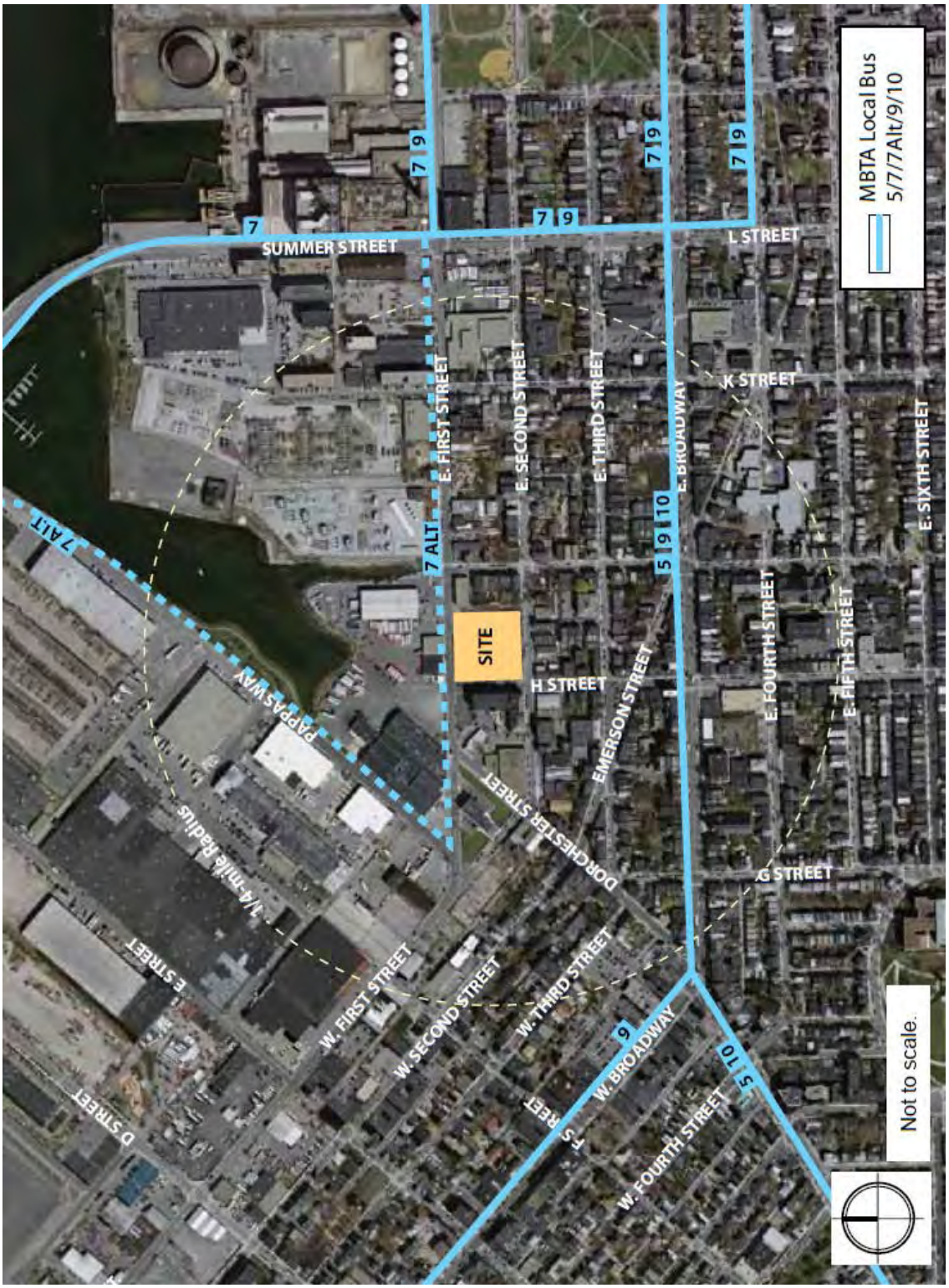
Bus route #5 operates between City Point and JFK UMass Station via Andrew Station and McCormack Housing. The #5 provides connection to Red Line and commuter rail service at JKF UMass Station and Red Line and local bus service at Andrew Station. The #5 operates Monday through Saturday with limited service, approximately every hour during the morning and early afternoon periods only; no service is provided on Sunday.

Bus route #7 operates between City Point in South Boston and Otis Street/Summer Street in downtown Boston and provides connection to the World Trade Center; Federal Court House; South Station; Harbor Industrial Park; downtown business and shopping districts; and connections to the Red and Silver Lines. Service on this route runs approximately every 15 minutes during the weekday commuter period. Service is also provided approximately every 40 minutes on Saturday, with no service on Sundays. In the vicinity of the Project site, the #7 primarily operates along Summer Street but also operates an alternate route that serves the Harbor Industrial Park via Pappas Way and East First Street. The #7 alternate route serves a bus stop directly adjacent to the site in the East First Street eastbound direction; however, the MBTA bus stop sign is no longer legible.

Bus route #9 operates between City Point in South Boston and Copley Square in Back Bay via Broadway Station. The #9 provides connection to the Red, Green, and Silver Lines and local bus service. Service on this route runs approximately every 10 minutes or less weekday commuter period. Service is also provided on Saturdays and Sundays.

Bus route #10 operates between City Point in South Boston and Copley Square in Back Bay via Andrew Station and Boston University Medical Center. The #10 provides connection to the Red, Green, Orange, and Silver Lines and local bus service. Service on this route runs approximately every 20 to 30 minutes during the weekday commuter period. Service is also provided on Saturdays and Sundays.

Figure 5-5 Public Transportation in the Study Area



5.2.7 Existing Pedestrian Conditions

Sidewalks are provided along all roadways adjacent to the Project site with the exception of Vicksburg Street, which only has a short segment of sidewalk along its east side near East First Street. Sidewalks adjacent to the site along East First Street, H Street, and East Second Street are generally in fair to poor condition. The following details the sidewalk conditions adjacent to the Project Site:

- ***East First Street –*** Sidewalks are provided along both sides of the roadway and generally range in width between 4 and 8 feet; however, the sidewalks are mostly in poor condition and discontinuous in some locations.

- ***H Street –*** approximately 8-foot wide sidewalks are provided along both sides of H Street between East First Street and East Second Street; however, curbing is generally not provided along the east side of H Street and is flush with the roadway surface. As a result, vehicles parked on-street along the east side of H Street typically block this sidewalk.

- ***East Second Street –*** sidewalks ranging in width between 7 and 8 feet are provided along both sides of the roadway. Sidewalks are generally in fair condition with the exception of a new segment of sidewalk that appeared to be recently constructed along the south side of the roadway.

As is common in urban settings, the effective widths of the above sidewalks are narrowed due to the presence of light posts, fire hydrants, sign posts, and other obstacles located along the sidewalk path.

The existing AM and PM peak hour pedestrian volumes at study area intersections are shown in **Figure 5-6.** As shown, pedestrian volumes are generally low throughout the study area.

5.2.8 Existing Bicycle Conditions

D Street, Summer Street, East First Street, and West First Street are all classified as suitable for "intermediate" cyclists according to the 2010 Bike Routes of Boston Map. The Project site is also located within approximately one-half mile of the Boston Harborwalk and within one-mile of the South Bay Harbor trail, which are recreational pathways for the exclusive use of cyclists and pedestrians. In the Project area, the Harborwalk has two branches, one following the shoreline from Fan Pier south to Old Harbor Reservation, and another that follows the east side of Fort Point Channel south to South Bay Park. The South Bay Harbor Trail begins at Fan Pier and runs south along the east side of Fort Point Channel to South Bay Park. This trail terminates at the MBTA Orange Line Ruggles Station and provides a connection to the Pierre Lallement Bicycle Trail, which runs down the Southwest Corridor.

In July 2011, the City of Boston launched Hubway, a bicycle sharing program. Hubway hosts 600 bicycles at 60 different locations across the city. As part of this program, cyclists are able to rent a bicycle from one location and return it to any other station, facilitating point-to-point travel within the City. These bicycle facilities are available to the public all year except during the winter. The closest Hubway station is located approximately one mile from the Project site at Proctor and Gamble on Dorchester Avenue.

Bicycle volumes during the weekday AM and PM peak hour are illustrated in **Figure 5-7;** bicycle volumes in the study area are generally low. No bicycle racks are currently provided on-site.

5.2.9 Existing Loading and Service

Loading and service activity associated with the existing building is minimal.

Figure 5-6 Existing Conditions (2011) Pedestrian Volumes, AM and PM Peak Hour

Figure 5-7 Existing Conditions (2011) Bicycle Volumes, AM and PM Peak Hours

5.3 Evaluation of Long-term Impacts

This section describes and evaluates the 2016 No-Build and Build Conditions. The methodology is in keeping with the City of Boston's *Transportation Access Guidelines* (2001).

5.3.1 No Build Conditions

Background Traffic Growth

No-Build traffic conditions are independent of the proposed Project and include all existing traffic and any new traffic resulting from both general background growth and any identified development projects in the area.

Two procedures are generally used in combination to determine background traffic growth. The first procedure is to estimate traffic generated by planned new major developments and anticipated roadway changes. In collaboration with the Boston Redevelopment Authority (BRA) and BTD staff, the study team identified 11 development projects in the area that are anticipated to be constructed within the five-year planning horizon. The study team developed a unique vehicular trip distribution pattern for each of the 11 projects based on the CA/T model overall trip distribution patterns, BTD origin – destination data for Area 13, and knowledge of the local transportation network. Vehicle trips associated with these projects were then assigned to the study area intersections using their respective distributions. The projects for which traffic volumes were added specifically to the network include the following and are illustrated in **Figure 5-8:**

- ***49 – 63 Melcher Street –*** The project includes the conversion of 49 and 51 Melcher Street into approximately 185,000 sf of office space and the conversion of 61 Melcher Street into 38 residential units.

- ***319 A Street Rear –*** The project includes the redevelopment of the existing 319A Street Rear building and construction of a new building containing approximately 202 residential units.

- ***371-401 D Street Residences –*** The project includes the construction of 585 residential units in four new buildings.

- ***Boston Cargo Terminal –*** The Boston Cargo Terminal is a proposed waterfront project that calls for creation of an approximately 510,552 sf intermodal freight facility on the North Jetty site, north of FID Kennedy Street. Access will be from Tide Street.

- ***Channel Center Phases 3 –*** Phase 3 of the project includes the construction of 75,000 square feet of office space, 25,000 sf of research and development space, 39 residential units, and 5,130 sf of retail/commercial space.

- ***Fan Pier, Phase 1 (Parcel F) –*** This project includes the construction of a new approximately 493,000 sf office building. Access is from Old Northern Avenue.

- ***Fan Pier, Vertex –*** This project includes the construction of a new approximately 1,000,000 sf office building that will be occupied by Vertex Pharmaceuticals Incorporated.

- ***Pier 4, Phase 1 –*** the first phase of this mixed-use project will include the construction of 383 residential units.

- ***Seaport Square, Parcels A, B, C, K, and Q –*** This project includes the development of approximately 1,400,000 sf of development, including 483,700 sf of retail, 842,700 sf of residential space, 106,500 sf of hotel and 1,900 sf of cultural space.

- ***USPS General Mail Facility –*** This project includes the construction of approximately 211,000 sf of office space and 480,000 sf of manufacturing space.

- ***Waterside Place, Phase 1*** – Phase 1 of the project includes the construction of 236 residential units.

Vehicle trips generated by the above projects were distributed to study area intersections using unique trip distributions patterns developed for each project based on BTD Area 13 origin–destination data.

Figure 5-8 Area Projects

The second is to apply a general growth rate to account other smaller planned/approved development projects and changes in demographics, auto usage, and auto ownership. Based on an assessment of historic traffic volume data, it was determined that traffic volumes in the study area have increased by approximately one percent per year since 2009. Therefore, this analysis assumes a general background growth rate of one percent per year; the growth rate was also discussed with, and agreed upon by, BRA and BTD staff.

The resulting traffic volumes for the 2016 No-Build Conditions are shown in **Figure 5-9** and **Figure 5-10.**

Figure 5-9 No-Build Conditions (2016) Turning Movement Volumes, AM Peak Hour

Figure 5-10 No-Build Conditions (2016) Turning Movement Volumes, PM Peak Hour

No-Build Traffic Operations

The 2016 No-Build analysis uses the methodology described for Existing Conditions. No-Build intersection LOS results for the project study area, including queue analysis results, are summarized in **Table 5-5** and **Table 5-6.** Complete Synchro reports are provided in **Appendix B.**

Table 5-5 No-Build Conditions (2016) Level of Service Summary: AM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**D**	**38.4**	—	—
West First EB left	C	31.4	0.19	31
West First EB thru	C	30.0	0.13	38
West First WB thru	F	92.3	0.93	#261
West First WB right	A	5.2	0.40	46
D Street WB left/thru	B	19.5	0.37	186
D Street WB right	A	5.1	0.10	24
D Street SB left	F	85.8	0.93	#223
D Street SB right	A	5.8	0.30	55
Summer Street/East First Street	**C**	**33.1**	—	—
East First EB left/thru/right	F	80.9	0.92	#176
East First WB left/thru	D	37.8	0.42	120
East First WB right	B	15.3	0.76	#191
Summer NB left/thru | thru/right	D	37.0	0.93	#497
Summer SB left	D	52.1	0.86	#140
Summer SB thru/right	A	8.6	0.30	146
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	5.6	0.13	—
East First WB thru/right	A	0.0	0.27	—
H NB left/thru/right	C	16.6	0.25	—
Driveway SB left/right	B	3.2	0.06	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.
Gray shading indicates a reduction in LOS from Existing Conditions.

Table 5-6 No-Build Conditions (2016) Level of Service Summary: PM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**C**	**26.8**	—	—
West First EB left	C	32.4	0.13	25
West First EB thru	C	32.3	0.14	47
West First WB thru	D	50.3	0.49	91
West First WB right	A	2.6	0.19	19
D Street WB left/thru	C	25.3	0.21	133
D Street WB right	A	7.7	0.10	32
D Street SB left	D	44.9	0.86	224
D Street SB right	A	3.6	0.38	23
Summer Street/East First Street	**C**	**21.1**	—	—
East First EB left/thru/right	D	46.2	0.70	130
East First WB left/thru	C	34.6	0.28	49
East First WB right	A	9.2	0.35	40
Summer NB left/thru | thru/right	B	15.9	0.38	126
Summer SB left	B	13.9	0.51	157
Summer SB thru/right	C	22.1	0.82	#968
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	0.5	0.01	—
East First WB thru/right	A	0.0	0.10	—
H NB left/thru/right	B	12.1	0.14	—
Driveway SB left/right	B	10.3	0.08	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.
Gray shading indicates a reduction in LOS from Existing Conditions.

Under 2016 No-Build Conditions, all of the study area intersections will continue to operate at the same LOS as under 2011 Existing Conditions, with the following exceptions:

- ***West First Street/D Street –*** during the AM peak hour, the overall LOS decreases just beyond the threshold of LOS C to LOS D as a result of an increase in delay of less than four seconds. The D Street southbound left-turn lane also decreases from LOS E to LOS F in the AM peak hour primarily due to an increase in left turn volume (from 116 to 181 vehicles per hour) associated with planned area development projects. In the PM peak hour, the D Street southbound left-turn lane decreases from LOS C to LOS D, also due to an increase in left-turn volume (from 275 to 410 vehicles per hour) associated with planned area development projects.

- ***Summer Street/East First Street –*** during the AM peak hour, the East First Street eastbound approach decreases from LOS E to LOS F as a result of an increase of delay of less than four seconds, pushing it just beyond the threshold; the East First Street westbound left-turn movement decreases from LOS A to LOS B; and the Summer Street northbound approach decreases from LOS C to LOS D. In the PM peak hour, overall LOS decreases from LOS B

to LOS C, and the Summer Street southbound shared thru/right-turn lane decreases from LOS B to LOS C. These reductions in level of service are a result of the introduction of additional traffic from other planned area development projects as well as the general background growth rate.

5.3.2 Build Conditions

As summarized in **Section 5.1.1 Project Description,** the Project will result in construction of approximately 118 residential units and 206 parking spaces. The proposed site access and circulation plan is illustrated in **Figure 5-11.**

Site Access and Circulation

The Project will simplify and improve vehicular access to the site by reducing the number of curb cuts, which will create additional, and/or formalize existing, on-street parking. Currently, vehicular access to the existing site is not well defined. Primary access points are provided on H Street and a large curb cut on the corner of East First Street and Vicksburg Street; however, there are numerous other curb cuts and gates within the existing chain link fence. Several of the existing gates do not appear to be used and are blocked by equipment stored on-site; as a result vehicles generally park on-street in front of these gates. Similarly, no curb is provided along the east side of East First Street adjacent to the site making it difficult for motorists to identify access points to the site. Vehicular access to and egress to the Project's parking garage will be provided via separate entrance and exit driveways on East Second Street. All other existing vehicular access points will be closed. Primary pedestrian access to the residential lobby will be provided on East Second Street.

Trip Generation and Mode Split

Trip generation for the proposed residential and retail uses was derived from the Institute of Transportation Engineers' (ITE) publication *Trip Generation* (8th edition, 2008), using the following Land Use Codes (LUC):

LUC 223 – Mid-Rise Apartment – are rental dwelling units located within the same building with between three and 10 floors. This LUC was chosen as the closest match to that of the proposed residential use; however, trip generation data for this LUC is only available for the AM and PM peak hour. Therefore, the daily trip generation was estimated using data for LUC 222 – High-Rise Apartment, since it was the next closest match. The fitted curve equations were used to estimate person trips associated with the residential use during all time periods.

BTD publishes transit, walk/bike, and vehicle mode split rates for different areas of Boston; the Project is located within designated Area 13. Mode split assumptions based on BTD's Area 13 data and local vehicle occupancy rates from the *2009 National Household Travel Survey* and the 2000 U.S. Census are summarized in **Table 5-7.**

Table 5-7 BTD Area 13 Mode Shares

Period	Direction	Transit Share[1]	Walk/Bike Share[1]	Vehicle Share[1]	Local Vehicle Occupancy Rate[2]
Daily	In	19%	34%	47%	1.1
	Out	19%	34%	47%	1.1
AM Peak Hour	In	16%	36%	48%	1.1
	Out	24%	42%	34%	1.1
PM Peak Hour	In	24%	42%	34%	1.1
	Out	16%	36%	48%	1.1

1. Boston Transportation Department mode share data for Area 13.
2. 2000 Census data and 2009 National Household Travel Survey.

Based on the land use trip rates, mode split assumptions, and local vehicle occupancy rates, the resulting transit, walk/bike, and vehicle trips were identified. The Project-generated trips are summarized in **Table 5-8,** with detailed trip generation information provided in **Appendix B.**

Figure 5-11 Site Access and Circulation Plan (Parking Level)

Table 5-8 Trip Generation Summary

Period	Direction	Transit Trips	Walk/Bike Trips	Vehicle Trips
Daily	In	69	123	155
	Out	69	123	155
	Total	138	246	310
AM Peak Hour	In	2	4	6
	Out	6	11	8
	Total	8	15	14
PM Peak Hour	In	7	13	10
	Out	3	8	9
	Total	10	21	19

1. Trip Generation based on ITE *Trip Generation,* 8th Edition for 118 units using LUC-222 (High-Rise Apartment) and LUC-223 (Mid-Rise Apartment).

As show in **Table 5-8,** the Project is expected to generate only approximately 14 vehicle trips during the AM peak hour (6 trips in and 8 trips out) and 19 vehicle trips during the PM peak hour (10 trips in and 9 trips out) – this corresponds to just one new vehicle trip every three to four minutes on the adjacent roadway network.

The trip generation of the proposed Project was also compared to that of the existing as-of-right use on site, an approximately 20,000 sf building used for the repair and storage of construction equipment. The vehicle trips generated by this use are currently on the roadway network and reflected within the existing traffic counts at study area intersections. **Table 5-9** compares the vehicle trip generation associated with the proposed residential Project with that of the existing building.

Table 5-9 Comparison of Project Vehicle Trip Generation to Existing As-of-Right Use

Period	Direction	Existing Building (20,000 sf)[1]	Proposed Residential (118 units)	Net Vehicle Trips
Daily	In	34	155	121
	Out	34	155	121
	Total	68	310	242
AM Peak Hour	In	5	6	1
	Out	1	8	7
	Total	6	14	8
PM Peak Hour	In	1	10	9
	Out	5	9	4
	Total	6	19	13

1. Trip Generation for existing building based on ITE *Trip Generation,* 8th Edition for 20,000 sf using LUC-110 (General Light Industrial).

As shown **Table 5-9,** when compared to the existing as-of-right use, the proposed Project will generate only 8 additional vehicle trips (1 additional trip in and 7 additional trips out) during the AM peak hour and 13 additional vehicle trips (9 additional trips in and 4 additional trips out) during the PM peak hour. To provide a conservative estimate, no credit was taken for the vehicle trips associated with the existing use on site.

Trip Distribution

The vehicular trip distribution was developed using origin–destination data from BTD for Area 13 and knowledge of the local roadway network. The resulting trip distribution is shown in **Figure 5-12.** The Project-generated vehicle trips were then assigned to the study area intersections according to the distribution and are illustrated in and **Figure 5-13.**

Figure 5-14 and **Figure 5-15** show the 2016 Build AM and PM peak-hour traffic volumes, accounting for background growth rate, anticipated development by others, and Project-generated trips.

Figure 5-12 Trip Distribution

Figure 5-13 Project-Generated Vehicle Trips, AM and PM Peak Hour

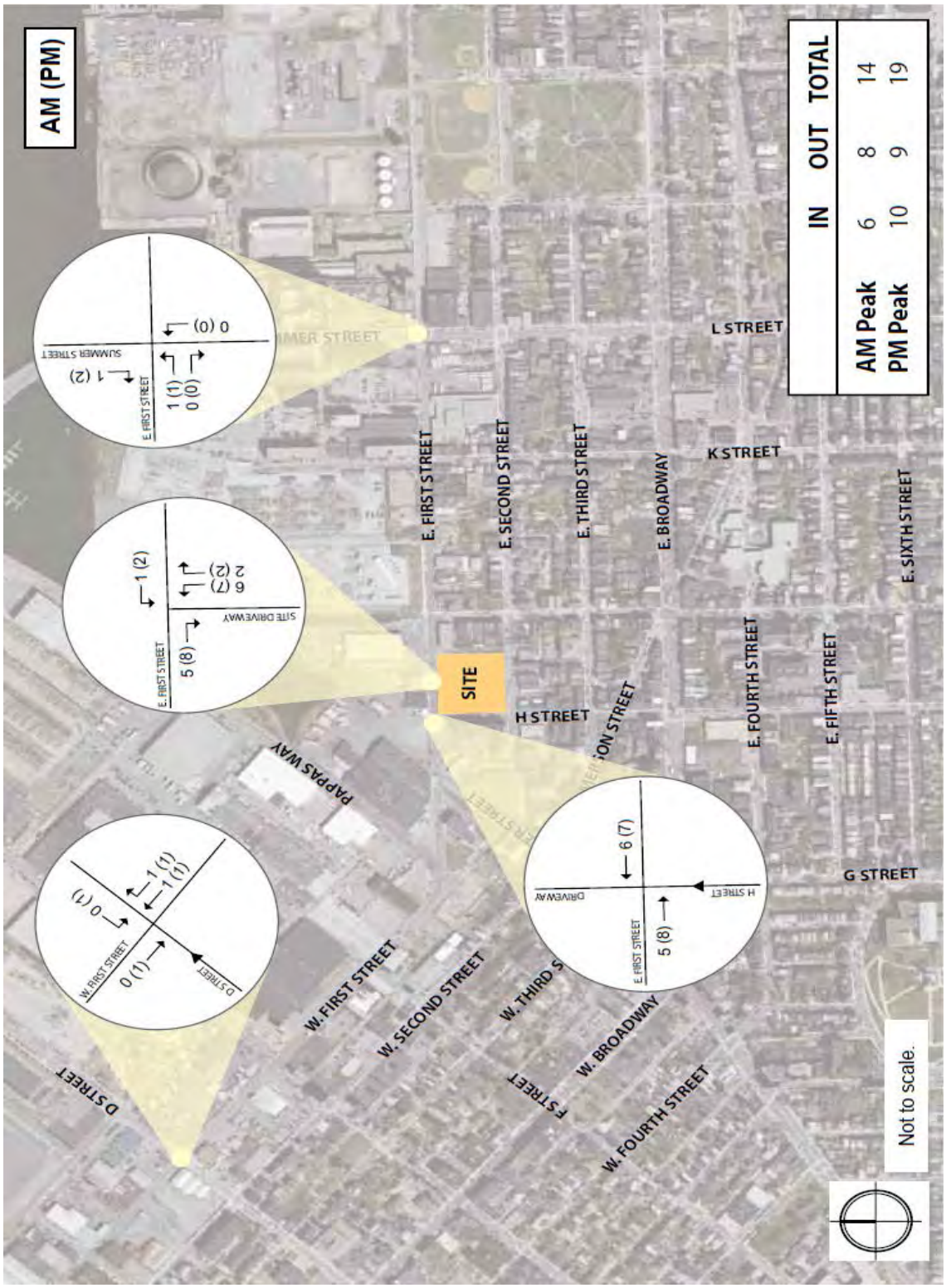


Figure 5-14 Build Conditions (2016) Turning Movement Volumes, AM Peak Hour

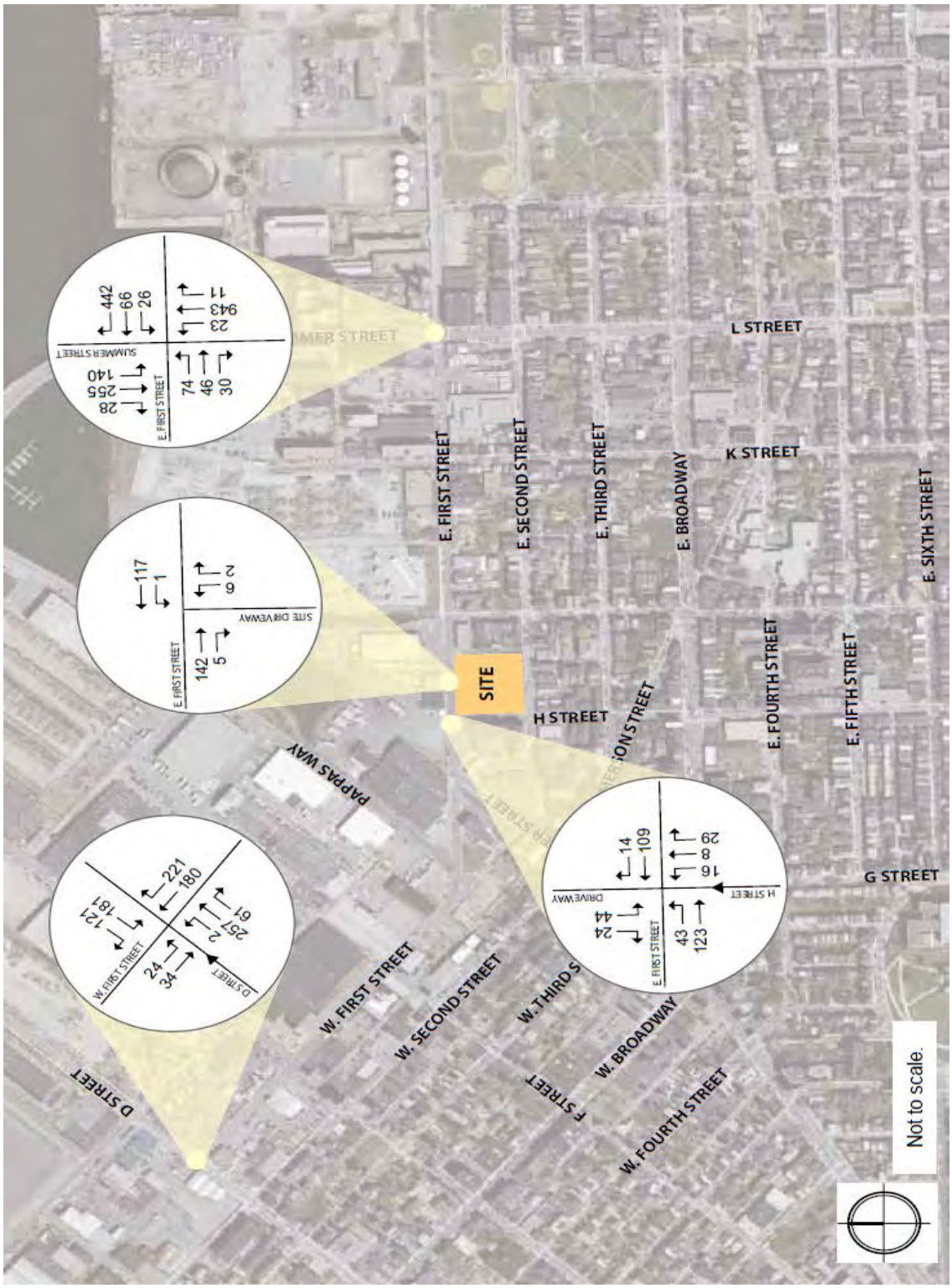


Figure 5-15 Build Conditions (2016) Turning Movement Volumes, PM Peak Hour

Build Conditions Traffic Operations

The LOS analysis for Build Conditions, which was conducted using the methodology described for Existing Conditions, appears in **Table 5-10** and **Table 5-11.**

Table 5-10 Build Conditions (2016) Level of Service Summary: AM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**D**	**38.6**	—	—
West First EB left	C	31.4	0.19	31
West First EB thru	C	30.0	0.13	38
West First WB thru	F	93.3	0.94	#262
West First WB right	A	5.2	0.41	47
D Street WB left/thru	B	19.5	0.37	186
D Street WB right	A	5.1	0.10	24
D Street SB left	F	85.8	0.93	#223
D Street SB right	A	5.8	0.30	55
Summer Street/East First Street	**C**	**33.1**	—	—
East First EB left/thru/right	F	81.9	0.92	#176
East First WB left/thru	D	37.8	0.42	120
East First WB right	B	15.3	0.76	#191
Summer NB left/thru | thru/right	D	37.0	0.93	#497
Summer SB left	D	52.1	0.86	#140
Summer SB thru/right	A	8.6	0.30	147
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	2.9	0.06	—
East First WB thru/right	A	0.0	0.25	—
H NB left/thru/right	C	19.6	0.31	—
Driveway SB left/right	B	14.1	0.14	—
East First Street/Site Driveway	—	—	—	—
East First Street EB thru/right	A	0.0	0.09	—
East First Street WB left/thru	A	0.1	0.00	—
Site Drive NB left/right	A	9.9	0.01	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.
Gray shading indicates a reduction in LOS from No-Build Conditions.

Table 5-11 Build Conditions (2016) Level of Service Summary: PM Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	95th Percentile Queue Length (ft)
Signalized Intersections				
D Street/West First Street	**C**	**26.9**	—	—
West First EB left	C	32.3	0.13	25
West First EB thru	C	32.3	0.15	48
West First WB thru	D	50.6	0.51	93
West First WB right	A	2.6	0.19	19
D Street WB left/thru	C	25.4	0.21	134
D Street WB right	A	7.8	0.10	32
D Street SB left	D	44.9	0.86	224
D Street SB right	A	3.6	0.38	23
Summer Street/East First Street	**C**	**21.3**	—	—
East First EB left/thru/right	D	47.1	0.71	132
East First WB left/thru	C	34.4	0.28	49
East First WB right	A	9.2	0.35	40
Summer NB left/thru | thru/right	B	16.0	0.38	126
Summer SB left	B	14.0	0.51	157
Summer SB thru/right	C	22.3	0.82	#972
Unsignalized Intersections				
East First Street/H Street/Driveway	—	—	—	—
East First EB left/thru	A	0.5	0.01	—
East First WB thru/right	A	0.0	0.10	—
H NB left/thru/right	B	12.3	0.15	—
Driveway SB left/right	B	10.4	0.08	—
East First Street/Site Driveway	—	—	—	—
East First Street EB thru/right	A	0.0	0.13	—
East First Street WB left/thru	A	0.2	0.00	—
Site Drive NB left/right	B	10.2	0.01	—

# =95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
m = Volume for 95th percentile queue is metered by upstream signal.
Gray shading indicates a reduction in LOS from No-Build Conditions.

With the addition of the small number of new vehicle trips added by the Project, all study area intersections will continue to operate with the same level of service as under No-Build Conditions and no adverse impacts will occur. The Project will generate less than 20 new vehicle trips during each of the weekday commuter peak hours, equivalent to less than one new vehicle trip every three minutes or more. This is a negligible amount of new traffic and well within the daily fluctuations of normal traffic flow.

Build Conditions Parking Supply

The Project will provide 206 parking spaces, for the 118 residential units (63 one-bedroom units and 55 two-bedroom units), within an at-grade parking garage located beneath the residential building. The proposed parking supply corresponds to a parking ratio of approximately 1.75

spaces per unit, slightly higher than BTD maximum parking guidelines for the South Boston Waterfront area (1.0 to 1.5 spaces per unit), as applied to Article 80 projects.

Build Conditions Public Transportation

As shown in **Table 5-8,** the Project will add 138 daily transit trips; with 8 transit trips (6 boarding and 2 alighting) during the AM peak hour and 10 new trips (3 boarding and 7 alighting) during the PM peak hour. The small increase in project-generated transit trips is not expected to adversely affect transit services in the study area. Detailed trip generation calculations are provided in **Appendix C.**

The Proponent is committed to promoting transit use among Project residents and visitors, as discussed in the Transportation Demand Management section below.

Build Conditions Pedestrian and Bicycle Trip Generation

On a daily basis, the Project will generate an estimated 246 new pedestrian and bicycle trips and an additional 138 new transit trips that will require a walk, or bicycle trip to or from the site. This results in a total of 384 new pedestrian or bicycle trips per day. Approximately 15 pedestrian or bicycle trips in and out of the site will occur during the AM peak hour, and 21 pedestrian or bicycle trips in and out will occur during the PM peak hour, plus 8 and 10 transit trips, respectively. This results in approximately one additional pedestrian trip every two to three minutes during the AM and PM peak hours. Pedestrian and bicycle trip generation is summarized in **Table 5-8,** with detailed trip generation data provided in **Appendix C.**

The Proponent is committed to promoting bicycle use among Project residents and visitors, as discussed under the Transportation Demand Management section below.

Build Bicycle Accommodations

Secure bicycle storage will be made available for building residents within the parking area and/or within dedicated storage areas within the proposed building per City of Boston *Bicycle Parking Guidelines,* which require a minimum of one bicycle parking space per residential unit. The Proposed design currently calls for a dedicated bike room as well as additional secure bike storage areas within the parking garage. Additional racks for workers and guests will also be provided near main entrances to the new building.

All bicycle racks, signs, and parking areas will conform to BTD standards and be sited in safe, secure locations. The Proponent will work with BTD to identify the most appropriate quantity and location for bicycle racks on the Project Site as part of the Transportation Access Plan Agreement (TAPA) process.

Build Conditions Loading and Service

Given the residential nature of the project, loading and service activity is expected to be minimal. Based on loading and service survey data collected by Howard/Stein- Hudson Associates at Tremont-on-the-Common, it is estimated that the proposed residential project will generate approximately 0.04 deliveries per day per 1,000 sf of residential use – or between 4 and 6 service/loading vehicles per day assuming an approximately 133,000 sf building. Residential service/loading activities generally occur between the hours of 7:00 a.m. to 7:00 p.m.

Most residential deliveries are made in smaller vehicles—cars, vans, or small panel trucks. Deliveries in this size of vehicle will be made within the surface parking area. Residential move-in/move-out may require a temporary on-street parking permit from the City (for large vehicles) and will be coordinated, and scheduled during off-peak periods where possible, by building management. Trash will be stored in a designated room within a building and serviced curb-side on pick-up days, as necessary.

Evaluation of Short-term Construction Impacts

Details of the overall construction schedule, working hours, number of construction workers, worker transportation, and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan (CMP) to be filed with BTD in accordance with the City's transportation maintenance plan requirements. The CMP will also address the need for pedestrian detours, lane closures, and/or parking restrictions, if necessary, to accommodate a safe and secure work zone.

To minimize transportation impacts during the construction period, the following measures will be incorporated into the CMP:

- Construction workers will be encouraged to use public transportation and/or carpool;
- A subsidy for MBTA passes will be considered for full-time employees; and
- Secure spaces will be provided on-site for workers' supplies and tools so they do not have to be brought to the site each day.

Transportation Demand Management

The Proponent is committed to implementing Transportation Demand Management (TDM) measures that support the City's efforts to reduce dependency on the automobile by encouraging travelers to use alternatives to driving alone, especially during peak periods. TDM will be facilitated by the Project's proximity to public transit. The Proponent will emphasize the site's convenient transit and pedestrian access in marketing the Project to future residents. On-site management will provide transit information (schedules, maps, fare information) in the building lobbies for residents and visitors. Additional TDM measures may include, but are not limited to, the following:

- ***Bicycle Storage –*** The Project Proponent will provide secure bicycle storage available to residents and visitors. The Proposed design currently calls for a dedicated bike room as well as additional secure bike storage areas within the parking garage.

- ***Electric Vehicle Charging –*** The Proponent will explore the feasibility of providing electric vehicle charging stations on-site.

- ***Project Web Site –*** Inclusion of public transportation information for residents and visitors on the Project's Web Site.

- ***Tenant and Employee Orientation Packet –*** These packets will provide all new tenants with information concerning available TDM programs and public transportation in the area, including route maps, schedules, and fare information.

- ***Transportation Coordinator –*** An on-site transportation coordinator will oversee transportation issues, including parking, residential move-in and move-out, and service and loading. The transportation coordinator will also work with residents as they move in to raise awareness of public transportation alternatives.

6.0 INFRASTRUCTURE SYSTEMS COMPONENT

6.1 Introduction

The following analysis describes the existing utility systems servicing the Project area, discusses any probable impacts that the Proposed Project may have on the utilities, and identifies mitigation measures to address potential impacts of the Proposed Project.

The Proponent has initiated contact with those responsible for the area's utility systems, including the Boston Water and Sewer Commission (BWSC) to understand and evaluate each system and design the Proposed Project to prevent disruption of utility services. A BWSC Site Plan and General Service Application is required for the proposed new water, sewer and drain connections. In addition, a Pollution Prevention Plan will be submitted specifying best management measures for protecting the BWSC drainage system during construction. A Drainage Discharge permit will also be required prior to discharge of any construction dewatering.

Meetings will be scheduled as necessary during building design and permitting processes. Updated design information on the proposed utility connections, as appropriate, will be provided as the project plans develop. Sewer, water, storm drainage, and electric utilities are discussed below.

6.2 Sanitary Sewer System

6.2.1 Existing Sewer System

The BWSC owns, operates and maintains the sewer system in the vicinity of the overall Project Site. 2 H Street is presently served by a 36 x 48-inch combined sewer/drain line in H Street and a 36 x 48-inch combined sewer/drain line in East First Street which flow in a southerly direction from the Project Site. These combined sewer/drain lines connect to a 36 x 48-inch combined sewer/drain line in East Second Street that flows in a westerly direction from the Project Site (see Figure 6-1). The sanitary sewage system ultimately connects to the MWRA system where it is treated at the MWRA Deer Island Treatment Plant.

6.2.2 Project-Generated Sewage Flow

The Proposed Project's sanitary sewage system will connect to the area's existing BWSC sanitary sewage system. The Proposed Project will generate an estimated flow in gallons per day (gpd) as calculated below. This calculation was based on 314 CMR 7.15 (Sewer System Connection and Extension Permit Program), which provides design flow parameters for various building uses.

Table 6-1 Estimated Daily Sewage Discharges

Estimated Daily Sewage Discharges			
Type of Unit	# Units	# Bedrooms	Sewage Generation (gpd)
1 Bedroom	88	1	9,680
2 Bedroom	47	2	10,340
		TOTAL	20,020

6.2.3 Sanitary Sewage Connection

Sanitary sewage connections from the project sites will be made to the existing combined sewers in East Second and East First Street which currently service those areas. A Massachusetts Department of Environmental Protection (DEP) Sewer Connection Permit will not be required for any of these sites since the calculated sewage flow is below 50,000 gpd. In order to obtain service approval, the Proponent will submit a General Service Application and Site Plan to the BWSC for review and approval.

6.2.4 Sewer System Mitigation

To help conserve water and reduce the amount of wastewater generated by the Proposed Project, the landscaping will be designed to not require permanent irrigation systems. An additional reduction to 30% will be achieved with 1.28 gallon per flush toilets, 1.0 gallon per minute lavatories and 1.75 gallon per minute showers. Additionally, the sewage collection system will be constructed and operated in compliance will all applicable regulations.

6.3 Water System

6.3.1 Existing Water Service

The BWSC provides water service to the City of Boston through a well-developed network of pipes which is supplied by the MWRA transmission system. There are three existing water mains in the vicinity of the Project Site. There is a 16-inch low service main in East First Street and a 12-inch low service main in H Street. Service to the Project Site will most likely come from the low service main in H Street.

6.3.2 Project Generated Water Demand

Water demand generated by the Project has been estimated based on the projected sewage generation, and adding 10% to account for system losses and consumption. The heating and cooling systems for the building have not yet been designed; however, air conditioning make-up water requirements are anticipated to be minimal. The projected water demand for the Project is therefore 110% X 20,020 gpd = 22,022 gpd.

Based on conversations with BWSC, the Proponent's civil engineer is confident that the existing water distribution system can provide the required flow to the proposed Project.

6.3.3 Proposed Water Service

Domestic water and fire service will be provided from the existing 12-inch low service water main in H Street.

Discussions with BWSC have indicated more than adequate capacity in the water supply system to serve the Proposed Project. Flow tests will be performed for final design of the proposed building fire suppression system during the detailed design phases.

Water service to the building will be metered in accordance with the Commission's Site Plan Requirements. The Project Proponent will provide for the connection of the meter to the Commission's automatic meter reading system consistent with current BWSC policy. Backflow prevention devices will be installed on all fire services where required to protect from cross-connection hazards. Water supply systems servicing the Project will be gated so as to minimize public hazard or inconvenience in the event of a water main break. The Proponent will also submit a General Service Application and Site Plan to the BWSC for review and approval.

6.3.4 Water Supply System Mitigation

The State Building Code requires the use of water conserving fixtures. Water conservation measures such as low flow water closets and restricted flow shower heads will help reduce the domestic water demand on the existing distribution system. These systems will be installed consistent with the code requirements.

Figure 6-1 Site Plan including Utilities

Drawing Reference

This plan based on the survey layout and drawing provided by Boston Survey Inc. & Associates, Professional Land Surveyors.
City of Boston Bench Marks Used: 589 West Second Street, ROCLSS Elev. = 26.45'

All utility design shall be installed in accordance with the requirements of the Boston Water & Sewer Commission.

Project Information

Proposed Residential Units: 140 total
200 Bedrooms Total

1. Anticipated Daily Sewage Flow = 22,000 gpd
2. 6" CU Domestic Water Services with a 3" Meter
3. 8" DI Fire Service
4. 8" Sewer Service
5. 10" Drain Service Overflow
6. Standard MWRA Oil & Grease Separator w/ 6" Sewer Connection

Owner Address
181 Dudley Road
Newton, MA 02459
Contact Person - Peter Zagorianakos
(617) 413-6795

Owner of Record
Two H Street Corp.
Book 20403, Page 325

General Notes

1. The new building water and sewer services shall be constructed in conformance with current Commission standards and specifications, the Uniform State Plumbing Code, 248 CMR 2.00 and any other governing agency with authority in this area.

2. The building water service and sewer installation shall be performed by a drain layer who possesses a valid Drain Layers License issued by the Commission.

3. The installing contractor shall call Digsafe at 1-888-DIG-SAFE at least 72 hours, Saturdays, Sundays and Holidays Excluded, prior to excavating at any location. A copy of the Digsafe Project Reference Number(s) shall be maintained on site.

4. The Commission shall have the right to inspect the installation of the building sewer connection at any reasonable time while such construction is underway.

5. The owner shall notify the Commission when such facility is installed and ready for final inspection and before the facility is connected to the Commission's wastewater and storm drainage systems.

6. Connection to the Commission's wastewater system shall be made in the presence of a Commission inspector. No facility shall be covered over until approval has been given by the Commission inspector.

7. Prior to activating water service, every new building sewer shall be dye tested by the Commission, or by the owner or his designee in the presence of a Commission inspector, to establish that the building sewer is properly connected to the Commission's wastewater system.

8. All plumbing fixtures located at an elevation below the top of the manhole on the Commission sewer serving the proposed plumbing shall be considered to be liable to backflow and shall be equipped with a backwater valve in accordance with 248 CMR.

9. The location of existing utilities are based on a field survey performed by Boston Survey Inc., Professional Land Surveyors and existing field conditions as observed by Laurance Hayes, Professional Engineer. Locations of existing pipes, conduits, utilities, foundations and other underground objects are not warranted to be correct.

10. The Contractor shall field verify all elevations as shown on plans prior to the start of work. If a conflict arises with any existing structural elements or unknown utilities, the Engineer shall be immediately notified as to any conflicts and/or required changes to the proposed utilities.

11. After BWSC Chief Engineer signs plan, a "ROUGH CONSTRUCTION SIGN-OFF" document from ISD must be completed. Then a "GENERAL SERVICES APPLICATION" shall be completed and signed by the property owner prior to installation of utilities.

12. This project is not located within the City of Boston Groundwater Conservation Overlay District.

13. The existing site is completely covered with impervious building and pavement surfaces. The soils observed on site consist of urban fill and glacial till materials, which are not suitable for an on site infiltration system. Stormwater runoff will be collected from all impervious surfaces into internal rain leaders that will be connected into the existing combined sewer main located in B Street.

14. The parking area shall have a series of trench drains connected by 4" Cast Iron piping into an oil & grease separator.

Material Specifications

1. The following size and type of pipe shall be used for all building sewer and building storm drain connections. The minimum size is 6-inches. The material shall be Polyvinyl- chloride pipe for the building sewer connections. Polyvinyl chloride pipe and fittings shall conform to ASTM standard specifications D3034 for pipes 6-inches to 15 inches. The PVC pipe shall have pipe diameter to wall thickness ratio (SDR) of a maximum of 35.

2. All water services up to and including 2-inch shall be copper Type K.

3. All water services 4-inches and larger shall be Ductile Iron Cement Lined (Class 56) pipe.

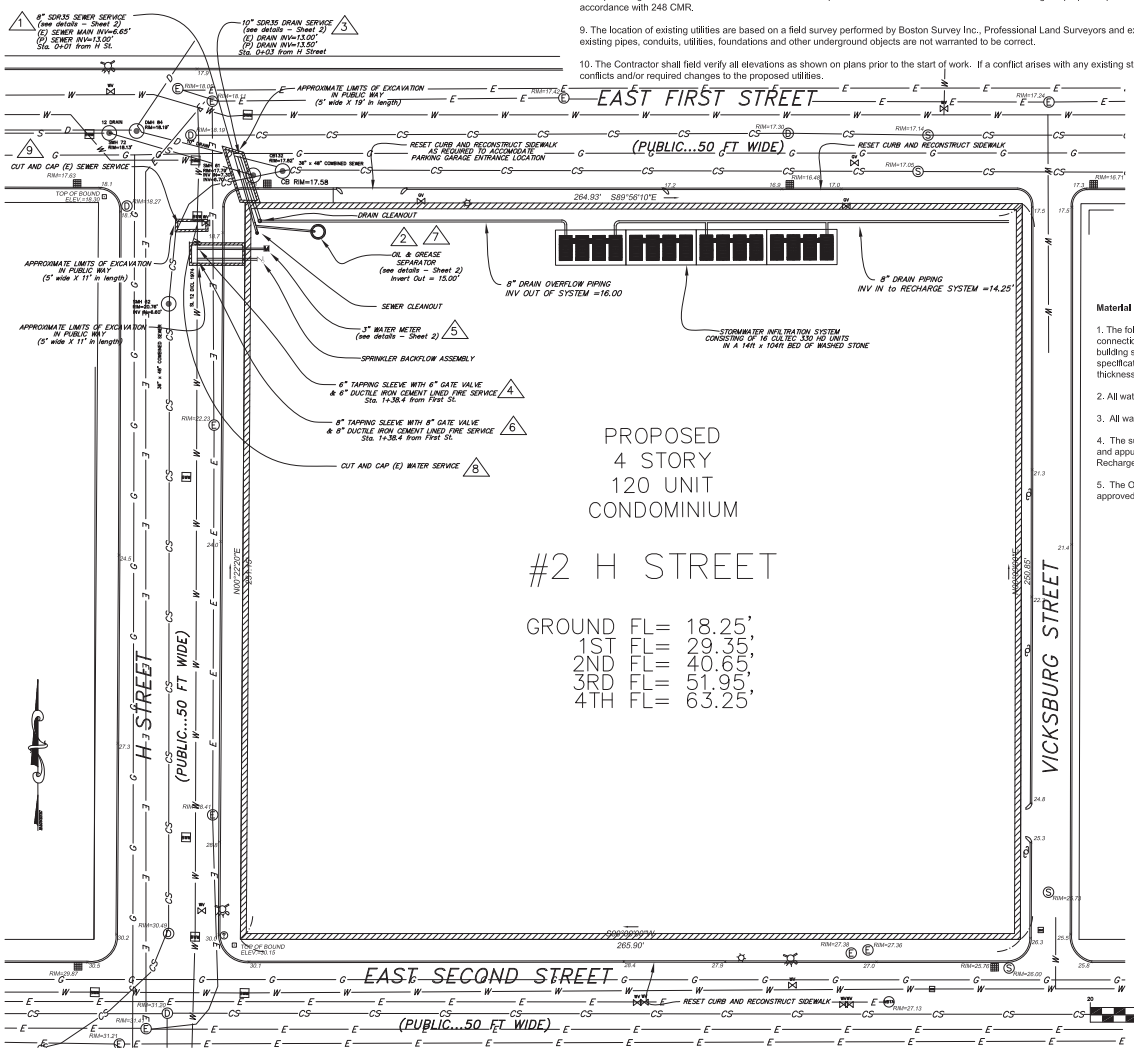
4. The subsurface drainage piping shall consist of SDR 35 pipe and fittings. The drywell structure and appurtenances for the Groundwater Recharge/Infiltration Drywells shall consist of Cultec Recharger 330 XL Chambers as manufactured by CULTEC Inc. of Brookfield CT or approved equal.

5. The Oil/Grease Separator shall be as manufactured by Situate Ray Precast of Marshfield, MA or approved equal.

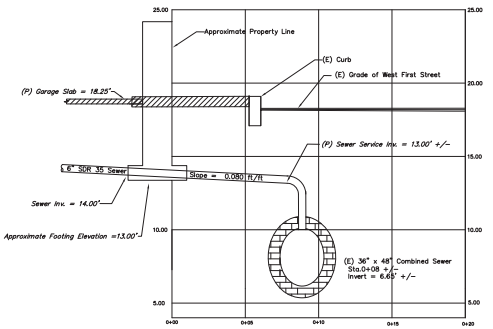
WARD & PARCEL #: 06-03107000

EXISTING WATER ACCOUNT # xxxxxxxxxx

	INSPECTION CHECKLIST
1	6" SEWER SERVICE INSTALLATION DATE: _____ INSPECTOR: _____
2	6" GARAGE DRAIN SERVICE INSTALLATION DATE: _____ INSPECTOR: _____
3	10" DRAIN SERVICE INSTALLATION DATE: _____ INSPECTOR: _____
4	6" DOMESTIC SERVICE INSTALLATION DATE: _____ INSPECTOR: _____
5	3" DOMESTIC METER INSTALLATION DATE: _____ INSPECTOR: _____
6	8" FIRE SERVICE INSTALLATION DATE: _____ INSPECTOR: _____
7	OIL & GREASE SEPARATOR INSTALLATION DATE: _____ INSPECTOR: _____
8	CUT & CAP (E) 1" WATER SERVICE DATE: _____ INSPECTOR: _____
9	CUT & CAP (E) SEWER SERVICE DATE: _____ INSPECTOR: _____
10	DYE TEST OF SEWER SERVICE DATE: _____ INSPECTOR: _____
11	DYE TEST OF DRAIN SERVICE DATE: _____ INSPECTOR: _____
12	AS-BUILT DRAWING DATE: _____ INSPECTOR: _____
	CONDITIONS LETTER DATE: _____ INSPECTOR: _____



GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.



PROFILE SCALE
Horizontal – 1" = 4'
Verticle – 1" = 4'

HAYES & ASSOCIATES
Civil Engineers
40 Harrison Avenue, Woburn MA 01801
(781) 998-0246

REVISIONS
1. ISSUED FOR REVIEW 12-16-11
2. REVISED PER ENGINEER'S COMMENTS

drawn: GCC
check: LHH
appvd: TFH

SCALE 1"=20'

PROPOSED CONSTRUCTION
2 H STREET
BOSTON, MA 02420
DECEMBER 12, 2011

HA 11-357

SITEPLAN#

SHEETS 1

6.4 Storm Drainage System

6.4.1 Existing Storm Drainage System

Storm drainage for the Project Site is provided by an existing 36 x 48-inch combined sewer/drain line in East First Street and a 36 x 48-inch combined sewer/drain line in H Street which flow in a southerly direction from the Project Site. These combined sewer/drain lines connect to a 36 x 48-inch combined sewer/drain line in East Second Street that flows in a westerly direction from the Project Site (see Figure 6-1).

6.4.2 Proposed Storm Drainage

The overall Project site consists mostly of impervious surfaces, with some areas of planting, and the proposed building redevelopment is not expected to result in any significant increase in runoff from the overall Project Site. The Existing conditions of the project sites do not currently provide any meaningful recharge of runoff. The Site will be evaluated during the detailed design phase of the project. The Site will have connections to the existing combined sewer in East First and H Street.

Any new drainage structures on the overall Project Site will be fitted with standard BWSC Type 5 catch basin. These basins are fitted with sediment sumps and oil/gas traps. Existing structures to remain will be cleaned of debris and retrofitted with oil/gas traps where not already existing. Oil/gas traps will be permitted through BWSC and MWRA. If not already in place, BWSC plaques will be installed at storm drains that bear the warning "Don't Dump – Drains to Boston Harbor".

Any sewer and drain connections that are terminated will be cut and capped in accordance with BWSC standards. The Proponent will also submit a General Service Application and Site Plan to the BWSC for review and approval.

6.4.3 Mass DEP Stormwater Management Policy Standards

In February of 2008, the Mass DEP revised their Stormwater Management Standards to better address water quality and water quantity issues associated with project sites. The revisions promote increased stormwater recharge, treatment of more runoff from polluting land uses, low impact development (LID) techniques, pollution prevention, the removal of illicit discharges, and improved operation and maintenance of stormwater best management practices (BMPs).

A brief explanation of each Standard and the system compliance is provided below:

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

Compliance: The proposed design will comply with this Standard. No new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the proposed Project.

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

Compliance: The proposed design will not increase the impervious area compared to the pre-development condition. Therefore, there will be no detention system needed to mitigate the peak rate of runoff from the site.

Standard #3: Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Compliance: The Project will meet and exceed this standard by complying with the Boston Redevelopment Authority's requirement of recharging 1-inch of stormwater over the entire new impervious area.

Standard #4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:
a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
b) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Compliance: The Project will meet or exceed all standards.

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

Compliance: The Project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-8). This Project complies with this standard.

Standard #6: Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00.5 Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.

Compliance: The Project will not discharge untreated stormwater to a sensitive area or any other area.

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

practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Compliance: The Project will meet or exceed all standards.

Standard #8: A plan to control construction related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Compliance: The Project will comply with this standard. Sedimentation and erosion controls will be incorporated as part of the design of this Project and employed during site construction.

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

Compliance: A long Term Operations and Maintenance Plan shall be developed and maintained for this Project.

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

Compliance: There will be no illicit discharges associated with this Project.

6.5 Electric Systems

6.5.1 Existing Electric Systems

NSTAR provides electric service within the City of Boston. It is anticipated there are existing electric lines along East Second Street. In addition, existing street light conduits and streetlights are owned, operated and maintained by the Boston Public Works Department, Street Lighting Division. The Proponent will coordinate any modifications to the street light system with the Boston Public Works Department.

6.5.2 Proposed Electric Connections

The electrical space heating and energy systems for the proposed project have not yet been designed, however, it is expected that the project will require service consistent with housing units of this size and will not impose any excessive load burden on the existing available electrical system. In addition, appropriate energy-saving measures will be incorporated into the building design and construction.

6.6 Telephone Systems

Verizon New England provides telephone service to the Project area and the Project Site. Telephone service is provided to the Project Site via overhead wires. It is expected that the Project will require service consistent with housing units of this size and will not impose any excessive load burden on the existing system.

6.7 Cable Systems

Comcast and RCN provide cable service in this area and it is anticipated to be available for the Project Site. The Project will not impose any excessive load burden on the existing system. Any upgrades required to the service will be coordinated with the service provider.

6.8 Steam Systems

Steam services have not been identified in this area and it is not proposed that steam be used to service this facility.

6.9 Gas Systems

6.9.1 Existing Natural Gas Systems

National Grid provides natural gas service in the project area. Discussions with National Grid Energy Delivery will occur during the detailed design phase to confirm that there is adequate natural gas for this project.

6.9.2 Proposed Natural Gas Connections

The space heating system for the Proposed Project has not yet been designed. However, it is not expected that the Project would require excessive amounts of gas. In addition, energy-saving measures will be incorporated into the building design and construction.

6.10 Utility Protection During Construction

During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during switchover to a temporary or permanent system, the contractor will be required to coordinate the shutdown with the utility owners and Project abusers to minimize impacts and inconveniences accordingly.

7.0 COORDINATION WITH GOVERNMENT AGENCIES

7.1 Agency Coordination

7.1.1 Architectural Access Board Requirements

This Proposed Project will comply with the requirements of the Architectural Access Board. The Project will also be designed to comply with the Standards of the Americans with Disabilities Act.

7.1.2 Massachusetts Environmental Policy Act (MEPA)

Based on the information currently available the Proposed Project will not result in any environmental impact that would require MEPA review.

7.1.3 Boston Landmarks Commission

The Proponent will file an Article 85 Demolition Delay Application with the Boston Landmarks Commission under Article 85 of the Boston Zoning Code.

7.1.4 Boston Civic Design Commission (BCDC)

The Proposed Project is subject to review by the Boston Civic Design Commission

8.0 PROJECT CERTIFICATION

This form has been circulated to the Boston Redevelopment Authority as required by Article 80 of the Boston Zoning Code.

_____ _____

Signature of Proponent Date

Peter Zagorianakos, Manager
H Street Partners, LLC
126 N. Washington Street #5
Boston, MA 02114

APPENDIX A - Letter of Intent to File Expanded PNF

January 11, 2012

Mr. Peter Meade, Director
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007
Attn: Heather Campisano, Deputy Director for Development Review

Re: Letter of Intent (LOI) to File Expanded Project Notification Form (PNF)
Article 80-Large Project Review
2 H Street, South Boston, MA

Dear Mr. Meade,

I am writing to notify the Boston Redevelopment Authority of the intent of H Street Partners LLC to file an Expanded Project Notification Form ("PNF") with the BRA under Article 80-Large Project Review requirements of the Boston Zoning Code. The proposal is for a multi-family residential development with 135 residential units and a small 1,600 square foot retail space with associated garage parking for 206 spaces to serve these uses (the "Project").

The site sits on approximately 66,313 square feet of land (one parcel) at 2 H Street in the South Boston neighborhood of Boston. The Project Site is located within 1.0 mile of the Broadway and Andrew MBTA Stations and within 1/2 mile to the center of the Boston Harbor beaches. The existing use as a warehouse and storage yard will be demolished in order to make space for the new three story multi-family residential building.

The Project site is located within the First Street Neighborhood Development Area (NDA) of South Boston, per Article 68 Section 39 Table B, and will be built as-of-right. The Project will meet the zoning dimensional requirements of the Boston Zoning Code (Article 68 and Table E) and we will not be looking for any variances or conditional uses.

The Proponent will commence "Large Project Review" under Article 80 of the Code with the simultaneous filing of a Letter of Intent and Expanded Project Notification Form (PNF). The project proponent has outreached to City agencies, neighborhood representatives and groups, elected officials, and other interested parties over the past several months with respect to the Project. The principals of H Street Partners LLC have attended and participated in the East & West Street Planning and Zoning over the last 24 months and look forward to continuing their collaboration throughout the Article 80 review process.

We look forward to continuing to meet with you and your staff in the coming weeks on what we feel is a beneficial project to the South Boston neighborhood and meets the new zoning requirements implemented recently during the East & West Street Planning and Zoning process.

Sincerely,
H Street Partners LLC

Peter Zagorianakos, Manager

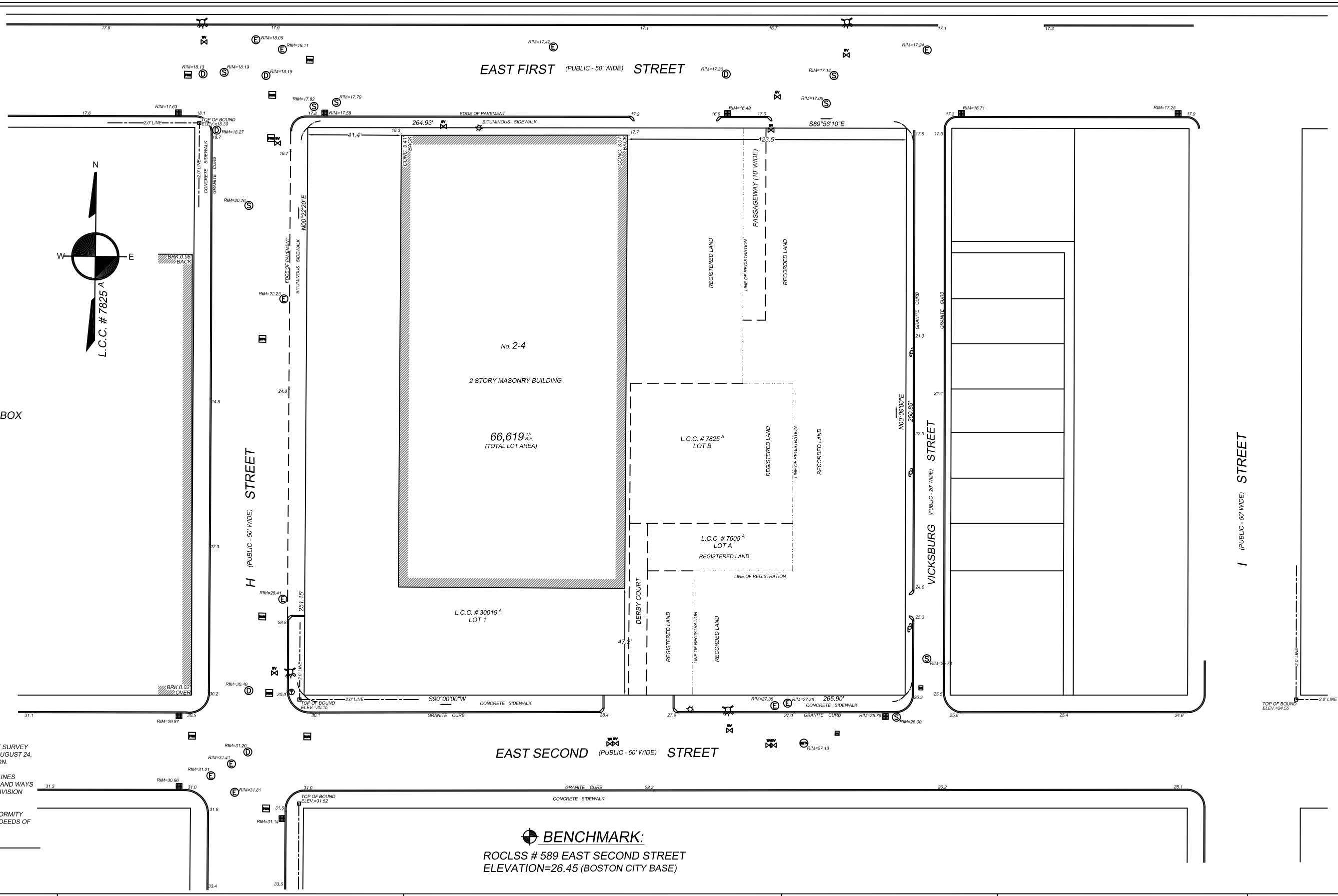
Cc: Lance Campbell, Project Manager, BRA

APPENDIX B - Site Survey

REGISTRY OF DEEDS USE ONLY

LEGEND

- MBTA MANHOLE
- ELECTRIC MANHOLE
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- 10.5 SPOT GRADE
- ELECTRIC HANDBOX
- LIGHT POLE
- FIRE HYDRANT
- BOSTON GAS HANDBOX
- BOSTON WATER WORKS HANDBOX
- WATER VALVE
- GAS VALVE
- UTILITY POLE



I CERTIFY THAT THIS PLAN WAS MADE FROM AN INSTRUMENT SURVEY ON THE GROUND BETWEEN THE DATES OF AUGUST 23 AND AUGUST 24, 2010 AND ALL STRUCTURES ARE LOCATED AS SHOWN HEREON.

I HEREBY CERTIFY THAT THE PROPERTY LINES SHOWN ARE LINES DIVIDING EXISTING OWNERSHIP AND THE LINES OF STREETS AND WAYS ALREADY ESTABLISHED AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

GEORGE C. COLLINS P.L.S. DATE

BENCHMARK:

ROCLSS # 589 EAST SECOND STREET
ELEVATION=26.45 (BOSTON CITY BASE)

DATE: AUGUST 24, 2010

REVISION	DATE

SCALE: 1 INCH = 20 FEET

20 0 20 40 60

REFERENCES:

DEED: C.O.T. # 110504
DEED: BOOK 20403 PAGE 325

PLAN: L.C.C. # 7825 A
L.C.C. # 30019 A

SITE PLAN OF LAND
LOCATED AT
2-4 H STREET
SOUTH BOSTON, MA

PREPARED FOR:
PETER ZAGORIANAKOS
N&P ASSOCIATES, LLC
181 DUDLEY ROAD
NEWTON, MA 02459

BOSTON SURVEY, INC.
UNIT C-4 SHIPWAYS PLACE
CHARLESTOWN, MA. 02129
(617) 242-1313

JOB # 10-00511 FILE # 10-00511-8/24/10

APPENDIX C - Transportation Component

2 H Street

D Street and West First Street AM Peak Hour Traffic Counts

Howard/Stein-Hudson Associates

December 2, 2011

Count Date: November 16, 2011

	D From North				FIRST STREET From East				D From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Cars																
07:00 AM	11	0	24	0	19	21	0	0	12	15	0	0	0	7	0	4
07:15 AM	11	0	29	0	19	11	0	3	5	22	1	0	0	8	1	5
07:30 AM	7	0	33	0	24	22	0	2	5	31	0	0	0	6	0	3
07:45 AM	20	0	21	0	28	41	0	1	16	49	0	1	0	7	3	2
08:00 AM	15	0	32	0	25	30	0	0	15	33	1	1	0	12	1	5
08:15 AM	22	0	24	0	28	34	0	4	9	46	0	1	0	4	1	2
08:30 AM	19	0	18	0	21	32	0	3	13	43	1	0	0	7	3	3
08:45 AM	9	0	20	0	21	28	0	6	15	38	0	1	0	14	1	2

	D From North				FIRST STREET From East				D From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Heavy Vehicles																
07:00 AM	1	0	8	0	10	3	0	0	2	3	0	0	0	2	0	0
07:15 AM	0	0	1	0	5	6	0	0	3	2	0	0	0	3	0	0
07:30 AM	0	0	3	0	2	3	0	0	2	1	0	0	0	2	1	0
07:45 AM	1	0	5	0	12	12	0	0	1	5	0	0	0	1	0	0
08:00 AM	2	0	7	0	7	8	0	0	2	1	0	0	1	1	0	0
08:15 AM	1	0	5	0	13	7	0	0	0	0	0	0	0	0	0	0
08:30 AM	5	0	4	0	9	6	0	0	2	1	0	0	0	0	0	0
08:45 AM	1	0	3	0	8	7	0	0	1	2	1	0	0	1	0	0

	D From North				FIRST STREET From East				D From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Combined																
07:00 AM	12	0	32	0	29	24	0	0	14	18	0	0	0	9	0	4
07:15 AM	11	0	30	0	24	17	0	3	8	24	1	0	0	11	1	5
07:30 AM	7	0	36	0	26	25	0	2	7	32	0	0	0	8	1	3
07:45 AM	21	0	26	0	40	53	0	1	17	54	0	1	0	8	3	2
08:00 AM	17	0	39	0	32	38	0	0	17	34	1	1	1	13	1	5
08:15 AM	23	0	29	0	41	41	0	4	9	46	0	1	0	4	1	2
08:30 AM	24	0	22	0	30	38	0	3	15	44	1	0	0	7	3	3
08:45 AM	10	0	23	0	29	35	0	6	16	40	1	1	0	15	1	2
Peak Hour Total	**85**	**0**	**116**	**0**	**143**	**170**	**0**	**8**	**58**	**178**	**2**	**3**	**1**	**32**	**8**	**12**
HV	9	0	21	0	41	33	0	0	5	7	0	0	1	2	0	0
HV%	11%	0%	18%	0%	29%	19%	0%	0%	9%	4%	0%	0%	100%	6%	0%	0%
PHF	0.89	0.00	0.74	0.00	0.87	0.80	0.00	0.50	0.85	0.82	0.50	0.75	0.25	0.62	0.67	0.60

2 H Street

D Street and West First Street PM Peak Hour Traffic Counts

Howard/Stein-Hudson Associates

December 2, 2011

Count Date: November 15, 2011

	D STREET From North				FIRST STREET From East				D STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Cars																
04:00 PM	17	0	61	1	13	16	0	1	8	13	0	2	0	17	0	2
04:15 PM	23	0	52	0	17	12	0	0	8	12	2	0	0	15	3	0
04:30 PM	21	0	56	0	17	20	0	1	9	14	1	0	0	11	1	0
04:45 PM	21	0	49	2	14	12	0	1	10	28	0	0	0	9	0	2
05:00 PM	42	0	69	0	11	18	0	5	14	19	0	0	0	10	1	6
05:15 PM	35	0	59	1	9	9	0	4	14	21	0	0	0	8	1	5
05:30 PM	28	0	67	0	15	23	0	1	11	17	0	0	0	6	2	3
05:45 PM	27	0	74	0	16	12	0	2	11	17	1	0	0	12	1	6

	D STREET From North				FIRST STREET From East				D STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Heavy Vehicles																
04:00 PM	1	0	7	0	3	0	0	0	2	1	0	0	0	1	0	0
04:15 PM	1	0	5	0	2	3	0	0	0	0	0	0	0	0	2	0
04:30 PM	1	0	3	0	2	4	0	0	1	3	0	0	0	1	0	0
04:45 PM	4	0	6	0	0	0	0	0	1	0	0	0	0	2	0	0
05:00 PM	0	0	1	0	3	3	0	0	1	2	0	0	0	0	0	0
05:15 PM	3	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	3	0	1	0	0	0	3	1	0	0	0	0	0	0
05:45 PM	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	0

	D STREET From North				FIRST STREET From East				D STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Combined																
04:00 PM	18	0	68	1	16	16	0	1	10	14	0	2	0	18	0	2
04:15 PM	24	0	57	0	19	15	0	0	8	12	2	0	0	15	5	0
04:30 PM	22	0	59	0	19	24	0	1	10	17	1	0	0	12	1	0
04:45 PM	25	0	55	2	14	12	0	1	11	28	0	0	0	11	0	2
05:00 PM	42	0	70	0	14	21	0	5	15	21	0	0	0	10	1	6
05:15 PM	38	0	60	1	9	12	0	4	14	21	0	0	0	8	1	5
05:30 PM	28	0	70	0	16	23	0	1	14	18	0	0	0	6	2	3
05:45 PM	27	0	75	0	17	14	0	2	11	17	1	0	0	13	1	6
Peak Hour Total	**135**	**0**	**275**	**1**	**56**	**70**	**0**	**12**	**54**	**77**	**1**	**0**	**0**	**37**	**5**	**20**
HV	3	0	6	0	5	8	0	0	4	3	0	0	0	1	0	0
HV%	2%	0%	2%	0%	9%	11%	0%	0%	7%	4%	0%	0%	0%	3%	0%	0%
PHF	0.80	0.00	0.92	0.25	0.82	0.76	0.00	0.60	0.90	0.92	0.25	0.00	0.00	0.71	0.63	0.83

2 H Street

Summer Street and West First Street AM Peak Hour Traffic Counts

Howard/Stein-Hudson Associates

December 2, 2011

Count Date: November 15, 2011

	SUMMER STREET From North				FIRST STREET From East				SUMMER STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Cars																
07:00 AM	4	39	24	1	63	8	1	2	0	188	12	2	6	12	13	3
07:15 AM	7	36	14	4	84	6	2	10	4	230	9	2	6	5	15	0
07:30 AM	15	54	21	3	87	10	10	8	1	205	4	1	8	6	21	1
07:45 AM	1	53	13	2	99	18	7	3	1	212	7	2	4	14	20	4
08:00 AM	7	64	14	3	101	15	5	7	2	229	4	2	6	10	9	3
08:15 AM	3	49	21	3	101	17	3	4	0	214	6	2	7	5	20	5
08:30 AM	4	51	11	3	90	10	5	5	4	212	6	5	5	6	18	9
08:45 AM	6	52	11	0	85	13	3	5	1	210	4	5	4	2	9	6

	SUMMER STREET				FIRST STREET				SUMMER STREET				FIRST STREET			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Heavy Vehicles																
07:00 AM	0	4	11	0	1	0	0	0	2	8	0	0	1	5	1	0
07:15 AM	2	2	8	0	0	1	2	0	1	10	0	0	1	5	2	0
07:30 AM	0	1	11	0	1	4	1	0	3	5	1	0	1	6	0	0
07:45 AM	0	2	17	0	0	0	0	0	1	4	0	0	0	2	2	0
08:00 AM	0	4	12	0	0	0	0	0	3	4	0	0	4	0	0	0
08:15 AM	1	4	20	0	9	1	0	1	0	6	1	0	0	2	0	0
08:30 AM	0	2	17	0	11	0	0	0	3	4	0	0	3	2	3	0
08:45 AM	1	2	10	0	19	1	1	0	2	5	0	0	0	0	1	0

	SUMMER STREET From North				FIRST STREET From East				SUMMER STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Combined																
07:00 AM	4	43	35	1	64	8	1	2	2	196	12	2	7	17	14	3
07:15 AM	9	38	22	4	84	7	4	10	5	240	9	2	7	10	17	0
07:30 AM	**15**	**55**	**32**	**3**	**88**	**14**	**11**	**8**	**4**	**210**	**5**	**1**	**9**	**12**	**21**	**1**
07:45 AM	**1**	**55**	**30**	**2**	**99**	**18**	**7**	**3**	**2**	**216**	**7**	**2**	**4**	**16**	**22**	**4**
08:00 AM	**7**	**68**	**26**	**3**	**101**	**15**	**5**	**7**	**5**	**233**	**4**	**2**	**10**	**10**	**9**	**3**
08:15 AM	**4**	**53**	**41**	**3**	**110**	**18**	**3**	**5**	**0**	**220**	**7**	**2**	**7**	**7**	**20**	**5**
08:30 AM	4	53	28	3	101	10	5	5	7	216	6	5	8	8	21	9
08:45 AM	7	54	21	0	104	14	4	5	3	215	4	5	4	2	10	6
Peak Hour Total	**27**	**231**	**129**	**11**	**398**	**65**	**26**	**23**	**11**	**879**	**23**	**7**	**30**	**45**	**72**	**13**
HV	1	11	60	0	10	5	1	1	7	19	2	0	5	10	2	0
HV%	4%	5%	47%	0%	3%	8%	4%	4%	64%	2%	9%	0%	17%	22%	3%	0%
PHF	0.96	0.85	0.79	0.92	0.90	0.90	1.30	0.82	0.39	0.94	0.82	0.35	0.75	1.13	0.86	0.36

N/S: Summer Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 B
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Summer Street From North			East 1st Street From East			Summer Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	14	156	27	30	5	1	1	57	6	7	18	6	328
04:15 PM	15	173	37	42	9	4	6	62	3	14	15	4	384
04:30 PM	13	175	49	24	8	4	3	74	7	14	13	8	392
04:45 PM	13	160	37	15	16	2	2	79	5	8	19	6	362
Total	55	664	150	111	38	11	12	272	21	43	65	24	1466
05:00 PM	25	193	44	28	15	2	3	77	7	4	9	12	419
05:15 PM	17	221	63	18	9	1	2	82	3	8	12	8	444
05:30 PM	16	202	54	23	7	0	5	64	4	12	9	5	401
05:45 PM	22	192	63	25	6	2	3	47	5	12	12	11	400
Total	80	808	224	94	37	5	13	270	19	36	42	36	1664
Grand Total	135	1472	374	205	75	16	25	542	40	79	107	60	3130
Apprch %	6.8	74.3	18.9	69.3	25.3	5.4	4.1	89.3	6.6	32.1	43.5	24.4	
Total %	4.3	47	11.9	6.5	2.4	0.5	0.8	17.3	1.3	2.5	3.4	1.9	
Cars	132	1445	373	179	67	16	25	509	37	75	104	54	3016
% Cars	97.8	98.2	99.7	87.3	89.3	100	100	93.9	92.5	94.9	97.2	90	96.4
Heavy Vehicles	3	27	1	26	8	0	0	33	3	4	3	6	114
% Heavy Vehicles	2.2	1.8	0.3	12.7	10.7	0	0	6.1	7.5	5.1	2.8	10	3.6

	Summer Street From North				East 1st Street From East				Summer Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	**25**	193	44	262	**28**	**15**	**2**	**45**	3	77	**7**	**87**	4	9	**12**	25	419
05:15 PM	17	**221**	**63**	**301**	18	9	1	28	2	**82**	3	87	8	**12**	8	28	**444**
05:30 PM	16	202	54	272	23	7	0	30	**5**	64	4	73	**12**	9	5	26	401
05:45 PM	22	192	63	277	25	6	2	33	3	47	5	55	12	12	11	**35**	400
Total Volume	80	808	224	1112	94	37	5	136	13	270	19	302	36	42	36	114	1664
% App. Total	7.2	72.7	20.1		69.1	27.2	3.7		4.3	89.4	6.3		31.6	36.8	31.6		
PHF	.800	.914	.889	.924	.839	.617	.625	.756	.650	.823	.679	.868	.750	.875	.750	.814	.937
Cars	78	796	224	1098	94	33	5	132	13	258	16	287	34	39	32	105	1622
% Cars	97.5	98.5	100	98.7	100	89.2	100	97.1	100	95.6	84.2	95.0	94.4	92.9	88.9	92.1	97.5
Heavy Vehicles	2	12	0	14	0	4	0	4	0	12	3	15	2	3	4	9	42
% Heavy Vehicles	2.5	1.5	0	1.3	0	10.8	0	2.9	0	4.4	15.8	5.0	5.6	7.1	11.1	7.9	2.5

N/S: Summer Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 B
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Cars

	Summer Street From North			East 1st Street From East			Summer Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	14	153	26	16	4	1	1	54	6	7	18	4	304
04:15 PM	14	169	37	33	8	4	6	54	3	14	15	4	361
04:30 PM	13	172	49	21	6	4	3	68	7	12	13	8	376
04:45 PM	13	155	37	15	16	2	2	75	5	8	19	6	353
Total	54	649	149	85	34	11	12	251	21	41	65	22	1394
05:00 PM	25	191	44	28	15	2	3	74	6	3	8	12	411
05:15 PM	16	217	63	18	8	1	2	81	2	8	12	7	435
05:30 PM	16	198	54	23	6	0	5	62	3	12	8	3	390
05:45 PM	21	190	63	25	4	2	3	41	5	11	11	10	386
Total	78	796	224	94	33	5	13	258	16	34	39	32	1622
Grand Total	132	1445	373	179	67	16	25	509	37	75	104	54	3016
Apprch %	6.8	74.1	19.1	68.3	25.6	6.1	4.4	89.1	6.5	32.2	44.6	23.2	
Total %	4.4	47.9	12.4	5.9	2.2	0.5	0.8	16.9	1.2	2.5	3.4	1.8	

	Summer Street From North				East 1st Street From East				Summer Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	**25**	191	44	260	**28**	**15**	**2**	**45**	3	74	**6**	83	3	8	**12**	23	411
05:15 PM	16	**217**	**63**	**296**	18	8	1	27	2	**81**	2	**85**	8	**12**	7	27	**435**
05:30 PM	16	198	54	268	23	6	0	29	**5**	62	3	70	**12**	8	3	23	390
05:45 PM	21	190	63	274	25	4	2	31	3	41	5	49	11	11	10	**32**	386
Total Volume	78	796	224	1098	94	33	5	132	13	258	16	287	34	39	32	105	1622
% App. Total	7.1	72.5	20.4		71.2	25	3.8		4.5	89.9	5.6		32.4	37.1	30.5		
PHF	.780	.917	.889	.927	.839	.550	.625	.733	.650	.796	.667	.844	.708	.813	.667	.820	.932

N/S: Summer Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 B
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Heavy Vehicles

	Summer Street From North			East 1st Street From East			Summer Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	0	3	1	14	1	0	0	3	0	0	0	2	24
04:15 PM	1	4	0	9	1	0	0	8	0	0	0	0	23
04:30 PM	0	3	0	3	2	0	0	6	0	2	0	0	16
04:45 PM	0	5	0	0	0	0	0	4	0	0	0	0	9
Total	1	15	1	26	4	0	0	21	0	2	0	2	72
05:00 PM	0	2	0	0	0	0	0	3	1	1	1	0	8
05:15 PM	1	4	0	0	1	0	0	1	1	0	0	1	9
05:30 PM	0	4	0	0	1	0	0	2	1	0	1	2	11
05:45 PM	1	2	0	0	2	0	0	6	0	1	1	1	14
Total	2	12	0	0	4	0	0	12	3	2	3	4	42
Grand Total	3	27	1	26	8	0	0	33	3	4	3	6	114
Apprch %	9.7	87.1	3.2	76.5	23.5	0	0	91.7	8.3	30.8	23.1	46.2	
Total %	2.6	23.7	0.9	22.8	7	0	0	28.9	2.6	3.5	2.6	5.3	

	Summer Street From North				East 1st Street From East				Summer Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	3	**1**	4	**14**	1	0	**15**	0	3	0	3	0	0	**2**	**2**	**24**
04:15 PM	**1**	4	0	**5**	9	1	0	10	0	**8**	0	**8**	0	0	0	0	23
04:30 PM	0	3	0	3	3	**2**	0	5	0	6	0	6	**2**	0	0	2	16
04:45 PM	0	**5**	0	5	0	0	0	0	0	4	0	4	0	0	0	0	9
Total Volume	1	15	1	17	26	4	0	30	0	21	0	21	2	0	2	4	72
% App. Total	5.9	88.2	5.9		86.7	13.3	0		0	100	0		50	0	50		
PHF	.250	.750	.250	.850	.464	.500	.000	.500	.000	.656	.000	.656	.250	.000	.250	.500	.750

N/S: Summer Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 B
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Peds and Bicycles

	Summer Street From North				East 1st Street From East				Summer Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	1	0	0	0	0	0	5	0	2	0	2	0	0	0	3	13
04:15 PM	0	2	0	0	0	0	0	2	0	0	0	1	0	0	0	2	7
04:30 PM	0	1	0	1	0	0	0	8	0	0	0	3	0	0	0	9	22
04:45 PM	1	2	0	0	0	0	0	7	0	1	0	1	0	0	0	4	16
Total	1	6	0	1	0	0	0	22	0	3	0	7	0	0	0	18	58
05:00 PM	0	0	0	2	0	0	0	7	0	0	0	3	0	0	0	7	19
05:15 PM	1	1	3	3	0	0	0	7	0	0	0	0	0	0	0	5	20
05:30 PM	0	2	0	0	0	0	0	6	0	1	0	2	0	0	0	6	17
05:45 PM	1	1	2	0	0	0	0	7	0	0	0	0	0	0	0	7	18
Total	2	4	5	5	0	0	0	27	0	1	0	5	0	0	0	25	74
Grand Total	3	10	5	6	0	0	0	49	0	4	0	12	0	0	0	43	132
Apprch %	12.5	41.7	20.8	25	0	0	0	100	0	25	0	75	0	0	0	100	
Total %	2.3	7.6	3.8	4.5	0	0	0	37.1	0	3	0	9.1	0	0	0	32.6	

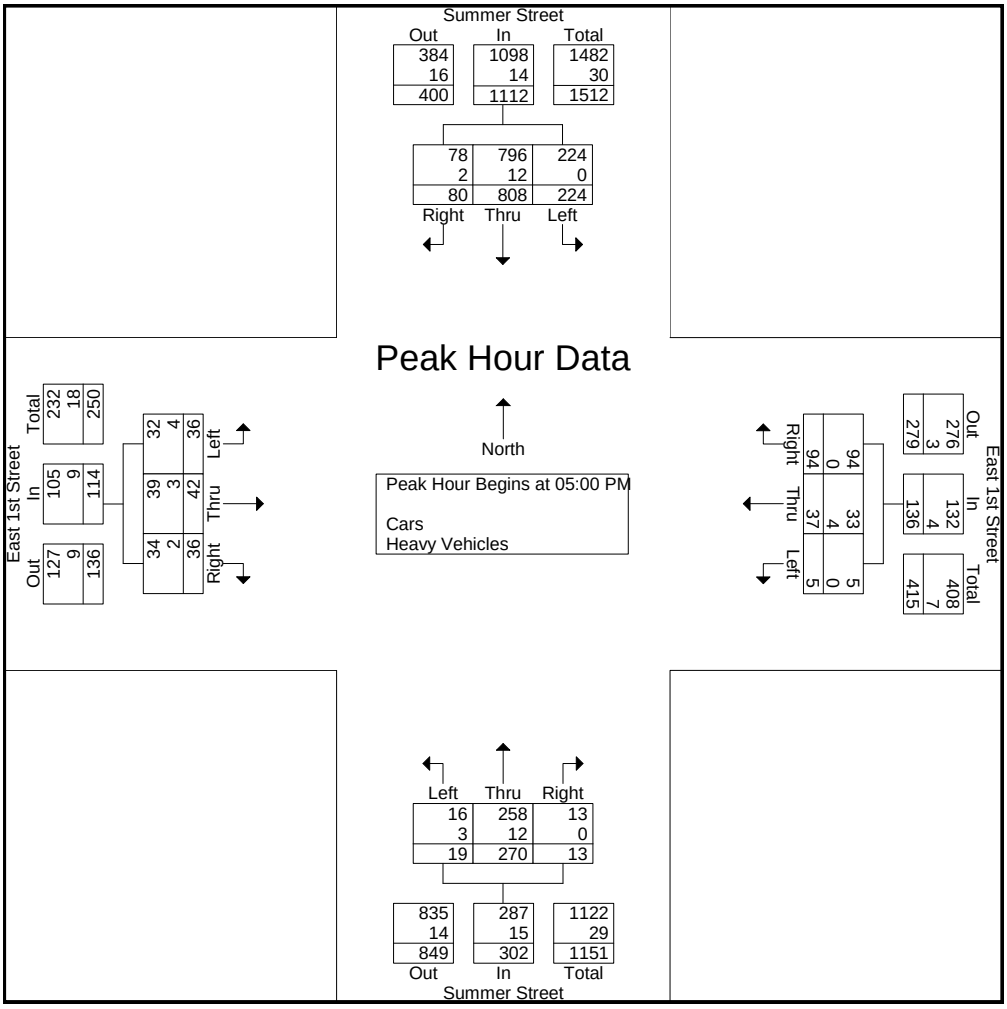
	Summer Street From North					East 1st Street From East					Summer Street From South					East 1st Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	1	0	1	2	0	0	0	**8**	**8**	0	0	0	**3**	**3**	0	0	0	**9**	**9**	**22**
04:45 PM	**1**	**2**	0	0	3	0	0	0	7	7	0	**1**									
05:00 PM	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**7**	**7**	**0**	**0**	**0**	**3**	**3**	**0**	**0**	**0**	**7**	**7**	**19**
05:15 PM	**1**	**1**	**3**	**3**	**8**	0	0	0	7	7	0	0	0	0	0	0	0	0	5	5	20
Total Volume	2	4	3	6	15	0	0	0	29	29	0	1	0	7	8	0	0	0	25	25	77
% App. Total	13.3	26.7	20	40		0	0	0	100		0	12.5	0	87.5		0	0	0	100		
PHF	.500	.500	.250	.500	.469	.000	.000	.000	.906	.906	.000	.250	.000	.583	.667	.000	.000	.000	.694	.694	.875

N/S: Summer Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 B
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

	Summer Street From North				East 1st Street From East				Summer Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	**25**	193	44	262	**28**	**15**	**2**	**45**	3	77	**7**	**87**	4	9	**12**	25	419
05:15 PM	17	**221**	**63**	**301**	18	9	1	28	2	**82**	3	87	8	**12**	8	28	**444**
05:30 PM	16	202	54	272	23	7	0	30	**5**	64	4	73	**12**	9	5	26	401
05:45 PM	22	192	63	277	25	6	2	33	3	47	5	55	12	12	11	**35**	400
Total Volume	80	808	224	1112	94	37	5	136	13	270	19	302	36	42	36	114	1664
% App. Total	7.2	72.7	20.1		69.1	27.2	3.7		4.3	89.4	6.3		31.6	36.8	31.6		
PHF	.800	.914	.889	.924	.839	.617	.625	.756	.650	.823	.679	.868	.750	.875	.750	.814	.937
Cars	78	796	224	1098	94	33	5	132	13	258	16	287	34	39	32	105	1622
% Cars	97.5	98.5	100	98.7	100	89.2	100	97.1	100	95.6	84.2	95.0	94.4	92.9	88.9	92.1	97.5
Heavy Vehicles	2	12	0	14	0	4	0	4	0	12	3	15	2	3	4	9	42
% Heavy Vehicles	2.5	1.5	0	1.3	0	10.8	0	2.9	0	4.4	15.8	5.0	5.6	7.1	11.1	7.9	2.5



2 H Street

H Street and West First Street PM Peak Hour Traffic Counts

Howard/Stein-Hudson Associates

December 2, 2011

Count Date: November 15, 2011

	H STREET From North				FIRST STREET From East				H STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Cars																
07:00 AM	1	0	1	0	6	14	0	0	4	2	8	2	0	33	8	0
07:15 AM	3	0	1	0	4	14	0	1	0	6	10	0	0	17	14	0
07:30 AM	7	0	0	0	3	20	0	0	5	9	13	0	0	19	14	0
07:45 AM	7	0	2	1	3	15	0	0	5	4	6	1	0	27	5	0
08:00 AM	10	0	5	0	3	27	0	0	5	4	13	0	0	26	7	0
08:15 AM	4	0	2	0	0	26	0	0	2	2	7	0	0	20	3	0
08:30 AM	8	0	3	0	0	37	0	0	1	1	8	2	0	16	4	0
08:45 AM	7	0	1	0	1	18	0	0	1	0	5	0	0	20	0	0

	H STREET From North				FIRST STREET From East				H STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Heavy Vehicles																
07:00 AM	0	0	0	0	0	3	0	0	0	0	1	0	0	6	0	0
07:15 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0	0
07:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	6	1	0
07:45 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	8	0	0
08:00 AM	1	0	0	0	0	5	2	0	0	0	0	0	0	4	0	0
08:15 AM	0	0	0	0	0	8	0	0	0	0	1	0	0	6	0	0
08:30 AM	0	0	0	0	0	6	0	0	1	0	0	0	0	6	1	0
08:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0

	H STREET From North				FIRST STREET From East				H STREET From South				FIRST STREET From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
Combined																
07:00 AM	1	0	1	0	6	17	0	0	4	2	9	2	0	39	8	0
07:15 AM	3	0	1	0	4	20	0	1	0	6	10	0	0	23	14	0
07:30 AM	7	0	0	0	3	25	0	0	5	9	13	0	0	25	15	0
07:45 AM	7	0	2	1	3	21	0	0	5	4	6	1	0	35	5	0
08:00 AM	11	0	5	0	3	32	2	0	5	4	13	0	0	30	7	0
08:15 AM	4	0	2	0	0	34	0	0	2	2	8	0	0	26	3	0
08:30 AM	8	0	3	0	0	43	0	0	2	1	8	2	0	22	5	0
08:45 AM	7	0	2	0	1	19	0	0	1	0	5	0	0	24	0	0
Peak Hour Total	**28**	**0**	**8**	**1**	**13**	**98**	**2**	**1**	**15**	**23**	**42**	**1**	**0**	**113**	**41**	**0**
HV	1	0	0	0	0	22	2	0	0	0	0	0	0	24	1	0
HV%	4%	0%	0%	0%	0%	22%	100%	0%	0%	0%	0%	0%	0%	21%	2%	0%
PHF	0.64	0.00	0.40	#DIV/0!	1.08	0.57	0.25	#DIV/0!	0.75	1.44	0.81	0.13	0.00	0.94	1.46	0.00

N/S: Parking Lot/ H Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 A
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Parking Lot From North			East 1st Street From East			H Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	9	0	4	2	15	0	3	1	12	0	36	1	83
04:15 PM	9	0	4	1	20	0	4	0	5	0	41	3	87
04:30 PM	10	0	2	4	24	1	7	1	4	0	31	3	87
04:45 PM	4	0	4	2	35	0	1	1	10	0	45	0	102
Total	32	0	14	9	94	1	15	3	31	0	153	7	359
05:00 PM	2	0	3	0	32	0	2	2	8	0	30	2	81
05:15 PM	6	0	2	0	19	0	2	0	5	0	36	1	71
05:30 PM	5	0	2	1	23	1	2	0	4	0	36	1	75
05:45 PM	2	0	1	0	22	0	1	0	5	0	36	2	69
Total	15	0	8	1	96	1	7	2	22	0	138	6	296
Grand Total	47	0	22	10	190	2	22	5	53	0	291	13	655
Apprch %	68.1	0	31.9	5	94.1	1	27.5	6.2	66.2	0	95.7	4.3	
Total %	7.2	0	3.4	1.5	29	0.3	3.4	0.8	8.1	0	44.4	2	
Cars	47	0	21	9	165	2	21	5	50	0	273	12	605
% Cars	100	0	95.5	90	86.8	100	95.5	100	94.3	0	93.8	92.3	92.4
Heavy Vehicles	0	0	1	1	25	0	1	0	3	0	18	1	50
% Heavy Vehicles	0	0	4.5	10	13.2	0	4.5	0	5.7	0	6.2	7.7	7.6

	Parking Lot From North				East 1st Street From East				H Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	9	0	**4**	**13**	2	15	0	17	3	**1**	**12**	**16**	0	36	1	37	83
04:15 PM	9	0	4	13	1	20	0	21	4	0	5	9	0	41	**3**	44	87
04:30 PM	**10**	0	2	12	**4**	24	**1**	29	**7**	1	4	12	0	31	3	34	87
04:45 PM	4	0	4	8	2	**35**	0	**37**	1	1	10	12	0	**45**	0	**45**	**102**
Total Volume	32	0	14	46	9	94	1	104	15	3	31	49	0	153	7	160	359
% App. Total	69.6	0	30.4		8.7	90.4	1		30.6	6.1	63.3		0	95.6	4.4		
PHF	.800	.000	.875	.885	.563	.671	.250	.703	.536	.750	.646	.766	.000	.850	.583	.889	.880
Cars	32	0	13	45	8	81	1	90	14	3	28	45	0	145	7	152	332
% Cars	100	0	92.9	97.8	88.9	86.2	100	86.5	93.3	100	90.3	91.8	0	94.8	100	95.0	92.5
Heavy Vehicles	0	0	1	1	1	13	0	14	1	0	3	4	0	8	0	8	27
% Heavy Vehicles	0	0	7.1	2.2	11.1	13.8	0	13.5	6.7	0	9.7	8.2	0	5.2	0	5.0	7.5

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Parking Lot/ H Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

File Name : 112711 A
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Cars

	Parking Lot From North			East 1st Street From East			H Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	9	0	3	1	13	0	3	1	9	0	34	1	74
04:15 PM	9	0	4	1	18	0	4	0	5	0	39	3	83
04:30 PM	10	0	2	4	20	1	6	1	4	0	29	3	80
04:45 PM	4	0	4	2	30	0	1	1	10	0	43	0	95
Total	32	0	13	8	81	1	14	3	28	0	145	7	332
05:00 PM	2	0	3	0	30	0	2	2	8	0	26	2	75
05:15 PM	6	0	2	0	16	0	2	0	5	0	35	1	67
05:30 PM	5	0	2	1	20	1	2	0	4	0	33	1	69
05:45 PM	2	0	1	0	18	0	1	0	5	0	34	1	62
Total	15	0	8	1	84	1	7	2	22	0	128	5	273
Grand Total	47	0	21	9	165	2	21	5	50	0	273	12	605
Apprch %	69.1	0	30.9	5.1	93.8	1.1	27.6	6.6	65.8	0	95.8	4.2	
Total %	7.8	0	3.5	1.5	27.3	0.3	3.5	0.8	8.3	0	45.1	2	

	Parking Lot From North				East 1st Street From East				H Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	9	0	**4**	**13**	1	18	0	19	4	0	5	9	0	39	**3**	42	83
04:30 PM	**10**	0	2	12	**4**	20	**1**	25	**6**	1	4	11	0	29	3	32	80
04:45 PM	4	0	4	8	2	**30**	0	**32**	1	1	**10**	**12**	0	**43**	0	**43**	**95**
05:00 PM	2	0	3	5	0	30	0	30	2	**2**	8	12	0	26	2	28	75
Total Volume	25	0	13	38	7	98	1	106	13	4	27	44	0	137	8	145	333
% App. Total	65.8	0	34.2		6.6	92.5	0.9		29.5	9.1	61.4		0	94.5	5.5		
PHF	.625	.000	.813	.731	.438	.817	.250	.828	.542	.500	.675	.917	.000	.797	.667	.843	.876

N/S: Parking Lot/ H Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 A
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Heavy Vehicles

	Parking Lot From North			East 1st Street From East			H Street From South			East 1st Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	0	0	1	1	2	0	0	0	3	0	2	0	9
04:15 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
04:30 PM	0	0	0	0	4	0	1	0	0	0	2	0	7
04:45 PM	0	0	0	0	5	0	0	0	0	0	2	0	7
Total	0	0	1	1	13	0	1	0	3	0	8	0	27
05:00 PM	0	0	0	0	2	0	0	0	0	0	4	0	6
05:15 PM	0	0	0	0	3	0	0	0	0	0	1	0	4
05:30 PM	0	0	0	0	3	0	0	0	0	0	3	0	6
05:45 PM	0	0	0	0	4	0	0	0	0	0	2	1	7
Total	0	0	0	0	12	0	0	0	0	0	10	1	23
Grand Total	0	0	1	1	25	0	1	0	3	0	18	1	50
Apprch %	0	0	100	3.8	96.2	0	25	0	75	0	94.7	5.3	
Total %	0	0	2	2	50	0	2	0	6	0	36	2	

	Parking Lot From North				East 1st Street From East				H Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	**1**	**1**	**1**	2	0	3	0	0	**3**	**3**	0	**2**	0	**2**	**9**
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
04:30 PM	0	0	0	0	0	4	0	4	**1**	0	0	1	0	2	0	2	7
04:45 PM	0	0	0	0	0	**5**	0	**5**	0	0	0	0	0	2	0	2	7
Total Volume	0	0	1	1	1	13	0	14	1	0	3	4	0	8	0	8	27
% App. Total	0	0	100		7.1	92.9	0		25	0	75		0	100	0		
PHF	.000	.000	.250	.250	.250	.650	.000	.700	.250	.000	.250	.333	.000	1.00	.000	1.00	.750

N/S: Parking Lot/ H Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 A
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

Groups Printed- Peds and Bicycles

	Parking Lot From North				East 1st Street From East				H Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Total	0	0	0	1	0	0	0	0	0	0	0	10	0	0	0	0	11
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3
Total	0	0	0	0	0	3	0	0	0	0	0	5	0	1	0	0	9
Grand Total	0	0	0	1	0	3	0	0	0	0	0	15	0	1	0	0	20
Apprch %	0	0	0	100	0	100	0	0	0	0	0	100	0	100	0	0	
Total %	0	0	0	5	0	15	0	0	0	0	0	75	0	5	0	0	

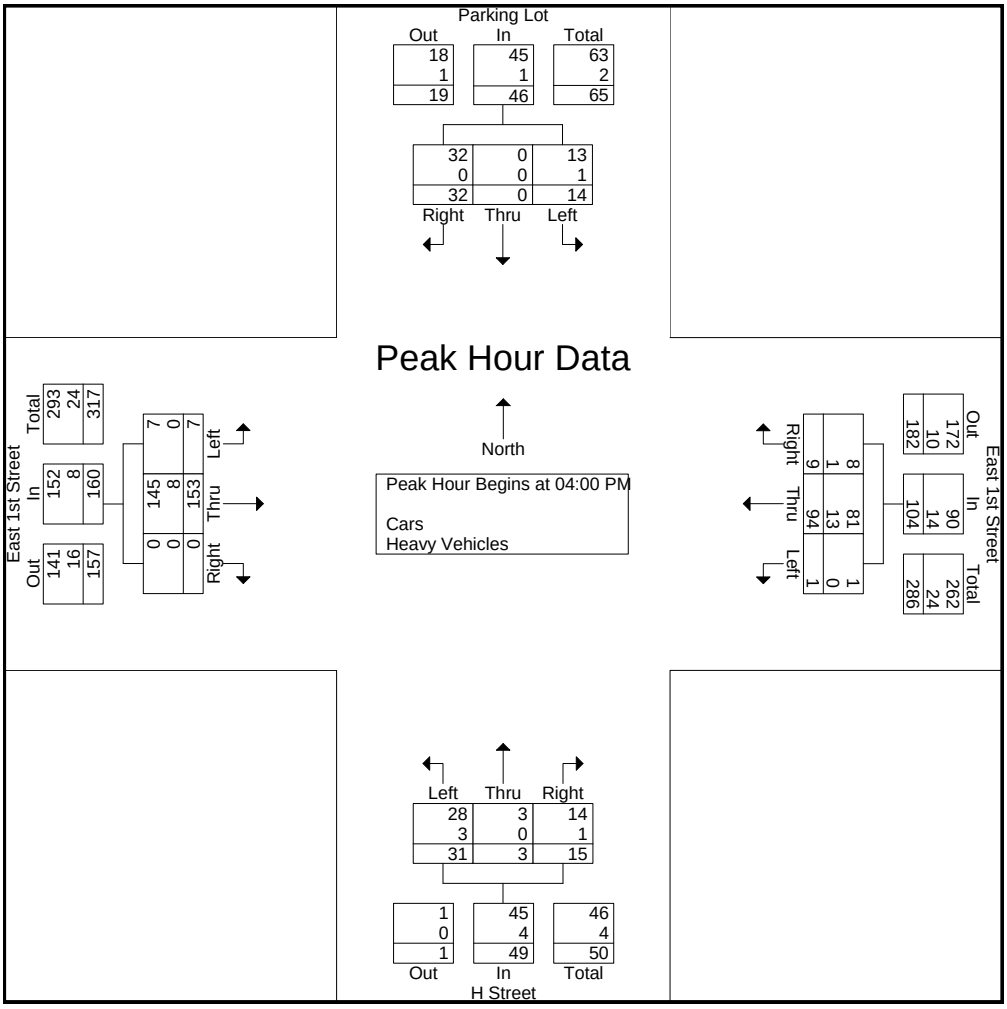
	Parking Lot From North					East 1st Street From East					H Street From South					East 1st Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 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	0	0	0	**4**	**4**	0	0	0	0	0	**4**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
04:45 PM	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Total Volume	0	0	0	1	1	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	11
% App. Total	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	0		
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.625	.625	.000	.000	.000	.000	.000	.688

N/S: Parking Lot/ H Street
E/W: East 1st Street
City, State: South Boston, MA
Client: HSH/J. SanClemente

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112711 A
Site Code : 2011164
Start Date : 11/29/2011
Page No : 1

	Parking Lot From North				East 1st Street From East				H Street From South				East 1st Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	9	0	**4**	**13**	2	15	0	17	3	**1**	**12**	**16**	0	36	1	37	83
04:15 PM	9	0	4	13	1	20	0	21	4	0	5	9	0	41	**3**	44	87
04:30 PM	**10**	0	2	12	**4**	24	**1**	29	**7**	1	4	12	0	31	3	34	87
04:45 PM	4	0	4	8	2	**35**	0	**37**	1	1	10	12	0	**45**	0	**45**	**102**
Total Volume	32	0	14	46	9	94	1	104	15	3	31	49	0	153	7	160	359
% App. Total	69.6	0	30.4		8.7	90.4	1		30.6	6.1	63.3		0	95.6	4.4		
PHF	.800	.000	.875	.885	.563	.671	.250	.703	.536	.750	.646	.766	.000	.850	.583	.889	.880
Cars	32	0	13	45	8	81	1	90	14	3	28	45	0	145	7	152	332
% Cars	100	0	92.9	97.8	88.9	86.2	100	86.5	93.3	100	90.3	91.8	0	94.8	100	95.0	92.5
Heavy Vehicles	0	0	1	1	1	13	0	14	1	0	3	4	0	8	0	8	27
% Heavy Vehicles	0	0	7.1	2.2	11.1	13.8	0	13.5	6.7	0	9.7	8.2	0	5.2	0	5.0	7.5



Lane Group	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 (ft)	11	11	11	12	12	11	9	13	9	12	14	13
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.972				0.850		0.997			0.973	
Flt Protected		0.978			0.981			0.999		0.950		
Satd. Flow (prot)	0	1400	0	0	1750	1516	0	3384	0	1228	1851	0
Flt Permitted		0.716			0.790			0.649		0.168		
Satd. Flow (perm)	0	1025	0	0	1410	1516	0	2199	0	217	1851	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				436		3			18	
Headway Factor	1.04	1.19	1.04	1.00	1.00	1.04	1.14	1.03	1.14	1.00	0.94	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1653			513			920			335	
Travel Time (s)		37.6			11.7			20.9			7.6	
Volume (vph)	72	45	30	26	65	398	23	879	11	129	231	27
Peak Hour Factor	0.82	0.70	0.75	0.59	0.90	0.90	0.82	0.94	0.55	0.79	0.85	0.45
Heavy Vehicles (%)	3%	22%	17%	4%	8%	3%	9%	2%	64%	47%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	4
Parking (#/hr)		0	2					0	2			
Adj. Flow (vph)	88	64	40	44	72	442	28	935	20	163	272	60
Lane Group Flow (vph)	0	192	0	0	116	442	0	983	0	163	332	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	21.0	21.0	0.0	21.0	21.0	21.0	48.0	48.0	0.0	11.0	59.0	0.0
Total Split (%)	21.0%	21.0%	0.0%	21.0%	21.0%	21.0%	48.0%	48.0%	0.0%	11.0%	59.0%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0	17.0	44.0	44.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.1			17.1	17.1		44.4		51.4	55.4	
Actuated g/C Ratio		0.20			0.20	0.20		0.51		0.59	0.64	
v/c Ratio		0.91			0.41	0.68		0.87		0.77	0.28	
Control Delay		77.7			37.6	9.9		30.6		37.5	8.3	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	

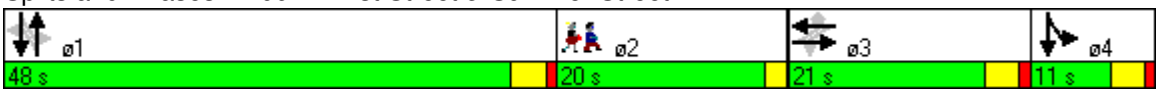
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		77.7			37.6	9.9		30.6		37.5	8.3	
LOS		E			D	A		C		D	A	
Approach Delay		77.7			15.7			30.6			17.9	
Approach LOS		E			B			C			B	
Queue Length 50th (ft)		88			50	2		194		25	50	
Queue Length 95th (ft)		#170			120	97		#448		#99	133	
Internal Link Dist (ft)		1573			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		212			280	650		1131		212	1194	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.91			0.41	0.68		0.87		0.77	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 86.4			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.99		1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1533	1739	0	0	1739	1524	0	1826	1432	1479	0	1358
Flt Permitted	0.333							0.999		0.950		
Satd. Flow (perm)	536	1739	0	0	1739	1502	0	1825	1432	1442	0	1358
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						164			68			96
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1114			1146			921			2348	
Travel Time (s)		25.3			26.0			20.9			53.4	
Volume (vph)	8	32	0	0	170	143	2	178	58	116	0	85
Confl. Peds. (#/hr)	1					1	20		12	12		20
Peak Hour Factor	0.67	0.62	0.92	0.92	0.92	0.87	0.50	0.82	0.85	0.74	0.92	0.89
Heavy Vehicles (%)	6%	2%	0%	0%	2%	6%	0%	4%	9%	18%	0%	11%
Adj. Flow (vph)	12	52	0	0	185	164	4	217	68	157	0	96
Lane Group Flow (vph)	12	52	0	0	185	164	0	221	68	157	0	96
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	14.0				16.0	14.0	22.0	22.0	22.0	14.0		
Total Split (s)	18.0	34.0	0.0	0.0	16.0	22.0	44.0	44.0	44.0	22.0	0.0	40.0
Total Split (%)	18.0%	34.0%	0.0%	0.0%	16.0%	22.0%	44.0%	44.0%	44.0%	22.0%	0.0%	40.0%
Maximum Green (s)	14.0				12.0	18.0	40.0	40.0	40.0	18.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	18.3	21.5			12.0	25.8		52.7	52.7	13.8		21.3
Actuated g/C Ratio	0.18	0.22			0.12	0.26		0.53	0.53	0.14		0.21
v/c Ratio	0.07	0.14			0.89	0.32		0.23	0.09	0.77		0.26

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	29.4	30.5			83.2	5.6		15.5	4.4	66.4		5.8
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	29.4	30.5			83.2	5.6		15.5	4.4	66.4		5.8
LOS	C	C			F	A		B	A	E		A
Approach Delay		30.3			46.7			12.9				
Approach LOS		C			D			B				
Queue Length 50th (ft)	6	27			118	0		75	0	105		3
Queue Length 95th (ft)	15	37			#244	39		127	22	131		15
Internal Link Dist (ft)		1034			1066			841			2268	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	256	378			209	569		962	787	266		500
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.05	0.14			0.89	0.29		0.23	0.09	0.59		0.19

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 81 (81%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 45.2% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1484: West First & D Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	113	0	0	98	13	42	23	15	8	0	28
Peak Hour Factor	0.68	0.81	0.92	0.92	0.25	0.77	0.81	0.64	0.75	0.40	0.92	0.64
Hourly flow rate (vph)	60	140	0	0	392	17	52	36	20	20	0	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	409			140			704	669	140	699	661	400
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	409			140			704	669	140	699	661	400
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			84	90	98	94	100	93
cM capacity (veh/h)	1161			1456			317	361	914	310	365	645

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	200	409	108	64
Volume Left	60	0	52	20
Volume Right	0	17	20	44
cSH	1161	1700	378	482
Volume to Capacity	0.05	0.24	0.28	0.13
Queue Length 95th (ft)	4	0	29	11
Control Delay (s)	2.8	0.0	18.3	13.6
Lane LOS	A		C	B
Approach Delay (s)	2.8	0.0	18.3	13.6
Approach LOS			C	B

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	16	11	12	12	9	13	9	12	14	13
Storage Length (ft)	20		0	0		0	0		0	0		0
Storage Lanes	0		0	0		1	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.956				0.850		0.992			0.984	
Flt Protected		0.983			0.995			0.996		0.950		
Satd. Flow (prot)	0	1438	0	0	1721	1615	0	3345	0	1805	1955	0
Flt Permitted		0.874			0.970			0.647		0.481		
Satd. Flow (perm)	0	1278	0	0	1678	1615	0	2173	0	914	1955	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				112		7			9	
Headway Factor	1.20	1.19	0.85	1.04	1.00	1.00	1.14	1.02	1.14	1.00	0.92	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1663			513			920			335	
Travel Time (s)		37.8			11.7			20.9			7.6	
Volume (vph)	36	42	36	5	37	94	19	270	13	224	808	80
Peak Hour Factor	0.67	0.81	0.71	0.63	0.55	0.84	0.67	0.80	0.65	0.89	0.92	0.78
Heavy Vehicles (%)	11%	7%	6%	0%	11%	0%	16%	4%	0%	0%	2%	2%
Parking (#/hr)		0	0					0	0			
Adj. Flow (vph)	54	52	51	8	67	112	28	338	20	252	878	103
Lane Group Flow (vph)	0	157	0	0	75	112	0	386	0	252	981	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	24.0	24.0	0.0	24.0	24.0	24.0	46.0	46.0	0.0	11.0	57.0	0.0
Total Split (%)	24.0%	24.0%	0.0%	24.0%	24.0%	24.0%	46.0%	46.0%	0.0%	11.0%	57.0%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	42.0	42.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.4			13.4	13.4		43.2		50.4	54.5	
Actuated g/C Ratio		0.16			0.16	0.16		0.52		0.61	0.66	
v/c Ratio		0.69			0.27	0.31		0.34		0.40	0.76	
Control Delay		45.7			34.5	9.5		15.2		11.5	19.0	

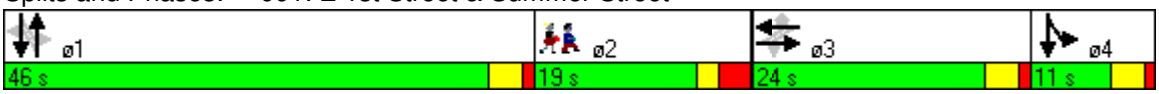
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	19%
Maximum Green (s)	14.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay		45.7			34.5	9.5		15.2		11.5	19.0	
LOS		D			C	A		B		B	B	
Approach Delay		45.7			19.5			15.2			17.5	
Approach LOS		D			B			B			B	
Queue Length 50th (ft)		58			30	0		43		31	204	
Queue Length 95th (ft)		128			48	37		110		130	#855	
Internal Link Dist (ft)		1583			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		308			383	455		1142		636	1296	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.51			0.20	0.25		0.34		0.40	0.76	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 82.4
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 78.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

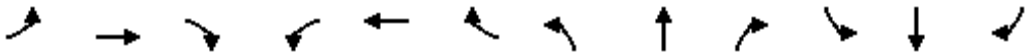
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.998		0.950		
Satd. Flow (prot)	1624	1722	0	0	1598	1482	0	1826	1459	1711	0	1478
Flt Permitted	0.661							0.998		0.950		
Satd. Flow (perm)	1130	1722	0	0	1598	1482	0	1824	1459	1677	0	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						68			60			169
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1095			878			915			2360	
Travel Time (s)		24.9			20.0			20.8			53.6	
Volume (vph)	5	37	0	0	70	56	1	77	54	275	0	135
Confl. Peds. (#/hr)							12		8	8		12
Peak Hour Factor	0.63	0.71	0.92	0.92	0.76	0.82	0.25	0.92	0.90	0.92	0.92	0.80
Heavy Vehicles (%)	0%	3%	0%	0%	11%	9%	0%	4%	7%	2%	0%	2%
Adj. Flow (vph)	8	52	0	0	92	68	4	84	60	299	0	169
Lane Group Flow (vph)	8	52	0	0	92	68	0	88	60	299	0	169
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	10.0				17.0	22.0	22.0	22.0	22.0	22.0		
Total Split (s)	10.0	27.0	0.0	0.0	17.0	46.0	27.0	27.0	27.0	46.0	0.0	56.0
Total Split (%)	10.0%	27.0%	0.0%	0.0%	17.0%	46.0%	27.0%	27.0%	27.0%	46.0%	0.0%	56.0%
Maximum Green (s)	6.0				13.0	42.0	23.0	23.0	23.0	42.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	15.8	22.2			12.2	43.2		38.8	38.8	30.2		37.0
Actuated g/C Ratio	0.16	0.22			0.12	0.43		0.39	0.39	0.30		0.37
v/c Ratio	0.04	0.14			0.47	0.10		0.12	0.10	0.58		0.26

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	30.8	32.3			49.5	2.8		26.5	8.6	26.2		2.1
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	30.8	32.3			49.5	2.8		26.5	8.6	26.2		2.1
LOS	C	C			D	A		C	A	C		A
Approach Delay		32.1			29.6			19.2				
Approach LOS		C			C			B				
Queue Length 50th (ft)	4	27			56	0		38	0	92		1
Queue Length 95th (ft)	12	45			88	14		88	32	120		5
Internal Link Dist (ft)		1015			798			835			2280	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	208	396			208	846		709	603	719		808
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.04	0.13			0.44	0.08		0.12	0.10	0.42		0.21

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 45.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1484: West First & D Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	153	0	0	94	9	31	3	15	14	0	32
Peak Hour Factor	0.58	0.85	0.92	0.92	0.67	0.56	0.65	0.75	0.54	0.88	0.92	0.80
Hourly flow rate (vph)	12	180	0	0	140	16	48	4	28	16	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	156			180			392	361	180	382	352	148
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	156			180			392	361	180	382	352	148
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.6	4.0	3.3
p0 queue free %	99			100			91	99	97	97	100	96
cM capacity (veh/h)	1436			1408			525	565	850	542	571	904

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	192	156	79	56
Volume Left	12	0	48	16
Volume Right	0	16	28	40
cSH	1436	1700	608	759
Volume to Capacity	0.01	0.09	0.13	0.07
Queue Length 95th (ft)	1	0	11	6
Control Delay (s)	0.5	0.0	11.8	10.1
Lane LOS	A		B	B
Approach Delay (s)	0.5	0.0	11.8	10.1
Approach LOS			B	B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

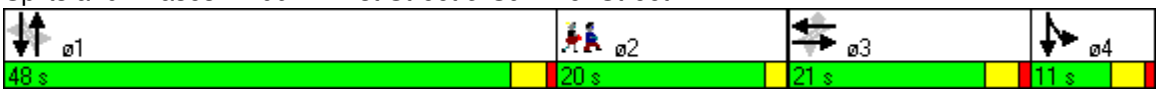
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	9	13	9	12	14	13
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.972				0.850		0.997			0.975	
Flt Protected		0.978			0.982			0.999		0.950		
Satd. Flow (prot)	0	1399	0	0	1752	1516	0	3387	0	1289	1855	0
Flt Permitted		0.714			0.789			0.649		0.143		
Satd. Flow (perm)	0	1022	0	0	1408	1516	0	2201	0	194	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				428		2			16	
Headway Factor	1.04	1.19	1.04	1.00	1.00	1.04	1.14	1.03	1.14	1.00	0.94	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1653			513			920			335	
Travel Time (s)		37.6			11.7			20.9			7.6	
Volume (vph)	73	46	30	26	66	442	23	943	11	140	255	27
Peak Hour Factor	0.82	0.70	0.75	0.59	0.90	0.90	0.82	0.94	0.55	0.79	0.85	0.45
Heavy Vehicles (%)	3%	22%	17%	4%	8%	3%	9%	2%	64%	40%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	4
Parking (#/hr)		0	2					0	2			
Adj. Flow (vph)	89	66	40	44	73	491	28	1003	20	177	300	60
Lane Group Flow (vph)	0	195	0	0	117	491	0	1051	0	177	360	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	21.0	21.0	0.0	21.0	21.0	21.0	48.0	48.0	0.0	11.0	59.0	0.0
Total Split (%)	21.0%	21.0%	0.0%	21.0%	21.0%	21.0%	48.0%	48.0%	0.0%	11.0%	59.0%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0	17.0	44.0	44.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.1			17.1	17.1		44.4		51.4	55.4	
Actuated g/C Ratio		0.20			0.20	0.20		0.51		0.59	0.64	
v/c Ratio		0.92			0.42	0.76		0.93		0.86	0.30	
Control Delay		80.9			37.8	15.3		37.0		52.1	8.6	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		80.9			37.8	15.3		37.0		52.1	8.6	
LOS		F			D	B		D		D	A	
Approach Delay		80.9			19.6			37.0			22.9	
Approach LOS		F			B			D			C	
Queue Length 50th (ft)		90			51	26		220		27	56	
Queue Length 95th (ft)		#174			120	#191		#497		#140	146	
Internal Link Dist (ft)		1573			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		212			279	644		1131		205	1196	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.92			0.42	0.76		0.93		0.86	0.30	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 86.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 33.0		Intersection LOS: C	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

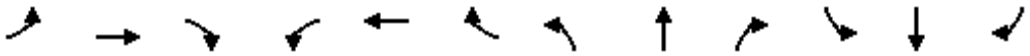
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.99		1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1533	1739	0	0	1739	1524	0	1826	1432	1479	0	1383
Flt Permitted	0.333							0.999		0.950		
Satd. Flow (perm)	536	1739	0	0	1739	1502	0	1825	1432	1447	0	1383
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						253			68			136
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1114			1146			921			2348	
Travel Time (s)		25.3			26.0			20.9			53.4	
Volume (vph)	24	34	0	0	179	220	2	257	61	181	0	121
Confl. Peds. (#/hr)	1					1	20		12	12		20
Peak Hour Factor	0.67	0.62	0.92	0.92	0.92	0.87	0.50	0.82	0.85	0.75	0.92	0.89
Heavy Vehicles (%)	6%	2%	0%	0%	2%	6%	0%	4%	9%	18%	0%	9%
Adj. Flow (vph)	36	55	0	0	195	253	4	313	72	241	0	136
Lane Group Flow (vph)	36	55	0	0	195	253	0	317	72	241	0	136
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	14.0				16.0	14.0	22.0	22.0	22.0	14.0		
Total Split (s)	18.0	34.0	0.0	0.0	16.0	22.0	44.0	44.0	44.0	22.0	0.0	40.0
Total Split (%)	18.0%	34.0%	0.0%	0.0%	16.0%	22.0%	44.0%	44.0%	44.0%	22.0%	0.0%	40.0%
Maximum Green (s)	14.0				12.0	18.0	40.0	40.0	40.0	18.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	19.9	23.9			12.0	29.4		46.7	46.7	17.4		25.3
Actuated g/C Ratio	0.20	0.24			0.12	0.29		0.47	0.47	0.17		0.25
v/c Ratio	0.19	0.13			0.93	0.40		0.37	0.10	0.93		0.30

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	31.4	30.0			92.3	5.2		19.5	5.1	85.8		5.8
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	31.4	30.0			92.3	5.2		19.5	5.1	85.8		5.8
LOS	C	C			F	A		B	A	F		A
Approach Delay		30.5			43.1			16.8				
Approach LOS		C			D			B				
Queue Length 50th (ft)	18	28			125	0		125	1	149		3
Queue Length 95th (ft)	31	38			#261	46		186	24	#223		55
Internal Link Dist (ft)		1034			1066			841			2268	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	266	409			209	632		853	705	266		535
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.14	0.13			0.93	0.40		0.37	0.10	0.91		0.25

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 81 (81%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 55.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

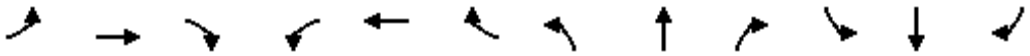
Splits and Phases: 1484: West First & D Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	43	27	0	0	103	14	44	24	16	8	0	29
Peak Hour Factor	0.68	0.81	0.92	0.92	0.25	0.77	0.81	0.64	0.75	0.40	0.92	0.64
Hourly flow rate (vph)	63	33	0	0	412	18	54	38	21	20	0	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	430			33			626	590	33	621	581	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430			33			626	590	33	621	581	421
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			85	91	98	94	100	93
cM capacity (veh/h)	1140			1592			355	399	1046	351	404	628

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	97	430	113	65
Volume Left	63	0	54	20
Volume Right	0	18	21	45
cSH	1140	1700	423	506
Volume to Capacity	0.06	0.25	0.27	0.13
Queue Length 95th (ft)	4	0	27	11
Control Delay (s)	5.6	0.0	16.6	13.2
Lane LOS	A		C	B
Approach Delay (s)	5.6	0.0	16.6	13.2
Approach LOS			C	B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	16	11	12	12	9	13	9	12	14	13
Storage Length (ft)	20		0	0		0	0		0	0		0
Storage Lanes	0		0	0		1	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.956				0.850		0.993			0.985	
Flt Protected		0.983			0.995			0.997		0.950		
Satd. Flow (prot)	0	1438	0	0	1721	1615	0	3355	0	1805	1957	0
Flt Permitted		0.873			0.970			0.647		0.445		
Satd. Flow (perm)	0	1277	0	0	1678	1615	0	2177	0	846	1957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				133		6			8	
Headway Factor	1.20	1.19	0.85	1.04	1.00	1.00	1.14	1.02	1.14	1.00	0.92	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1663			513			920			335	
Travel Time (s)		37.8			11.7			20.9			7.6	
Volume (vph)	37	43	37	5	38	112	19	311	13	270	880	81
Peak Hour Factor	0.67	0.81	0.71	0.63	0.55	0.84	0.67	0.80	0.65	0.89	0.92	0.78
Heavy Vehicles (%)	11%	7%	6%	0%	11%	0%	16%	4%	0%	0%	2%	2%
Parking (#/hr)		0	0					0	0			
Adj. Flow (vph)	55	53	52	8	69	133	28	389	20	303	957	104
Lane Group Flow (vph)	0	160	0	0	77	133	0	437	0	303	1061	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	24.0	24.0	0.0	24.0	24.0	24.0	46.0	46.0	0.0	11.0	57.0	0.0
Total Split (%)	24.0%	24.0%	0.0%	24.0%	24.0%	24.0%	46.0%	46.0%	0.0%	11.0%	57.0%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	42.0	42.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.6			13.6	13.6		43.2		50.4	54.5	
Actuated g/C Ratio		0.16			0.16	0.16		0.52		0.61	0.66	
v/c Ratio		0.70			0.28	0.35		0.38		0.50	0.82	
Control Delay		46.2			34.6	9.2		15.9		13.9	22.1	

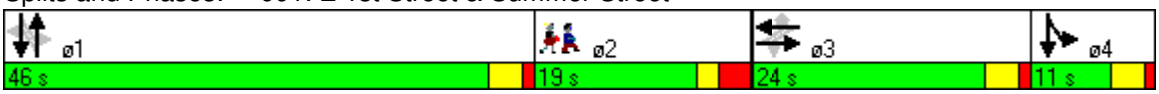
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	19%
Maximum Green (s)	14.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay		46.2			34.6	9.2		15.9		13.9	22.1	
LOS		D			C	A		B		B	C	
Approach Delay		46.2			18.5			15.9			20.2	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)		59			31	0		51		39	245	
Queue Length 95th (ft)		130			49	40		126		157	#968	
Internal Link Dist (ft)		1583			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		308			383	471		1141		600	1294	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.52			0.20	0.28		0.38		0.51	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 82.6
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

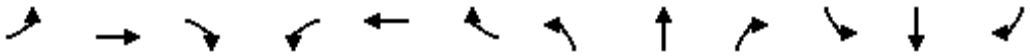
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1624	1722	0	0	1598	1524	0	1827	1459	1711	0	1478
Flt Permitted	0.643							0.999		0.950		
Satd. Flow (perm)	1100	1722	0	0	1598	1524	0	1825	1459	1680	0	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137			63			201
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1095			878			915			2360	
Travel Time (s)		24.9			20.0			20.8			53.6	
Volume (vph)	17	39	0	0	74	112	1	134	57	410	0	207
Confl. Peds. (#/hr)							12		8	8		12
Peak Hour Factor	0.63	0.71	0.92	0.92	0.76	0.82	0.25	0.92	0.90	0.92	0.92	0.80
Heavy Vehicles (%)	0%	3%	0%	0%	11%	6%	0%	4%	7%	2%	0%	2%
Adj. Flow (vph)	27	55	0	0	97	137	4	146	63	446	0	259
Lane Group Flow (vph)	27	55	0	0	97	137	0	150	63	446	0	259
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	10.0				17.0	22.0	22.0	22.0	22.0	22.0		
Total Split (s)	10.0	27.0	0.0	0.0	17.0	46.0	27.0	27.0	27.0	46.0	0.0	56.0
Total Split (%)	10.0%	27.0%	0.0%	0.0%	17.0%	46.0%	27.0%	27.0%	27.0%	46.0%	0.0%	56.0%
Maximum Green (s)	6.0				13.0	42.0	23.0	23.0	23.0	42.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	15.8	22.2			12.2	43.2		38.8	38.8	30.2		37.0
Actuated g/C Ratio	0.16	0.22			0.12	0.43		0.39	0.39	0.30		0.37
v/c Ratio	0.13	0.14			0.49	0.19		0.21	0.10	0.86		0.38

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	32.4	32.3			50.3	2.6		25.3	7.7	44.9		3.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	32.4	32.3			50.3	2.6		25.3	7.7	44.9		3.6
LOS	C	C			D	A		C	A	D		A
Approach Delay		32.3			22.4			20.1				
Approach LOS		C			C			C				
Queue Length 50th (ft)	14	28			59	0		67	0	177		7
Queue Length 95th (ft)	25	47			91	19		133	32	224		23
Internal Link Dist (ft)		1015			798			835			2280	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	205	396			208	900		709	605	719		824
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.13	0.14			0.47	0.15		0.21	0.10	0.62		0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 12 (12%), Referenced to phase 1:NBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1484: West First & D Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	161	0	0	99	9	33	3	16	15	0	34
Peak Hour Factor	0.58	0.85	0.92	0.92	0.67	0.56	0.65	0.75	0.54	0.88	0.92	0.80
Hourly flow rate (vph)	12	189	0	0	148	16	51	4	30	17	0	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	164			189			412	377	189	401	369	156
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	164			189			412	377	189	401	369	156
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.6	4.0	3.3
p0 queue free %	99			100			90	99	96	97	100	95
cM capacity (veh/h)	1427			1397			508	553	840	525	558	895

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	201	164	84	60
Volume Left	12	0	51	17
Volume Right	0	16	30	42
cSH	1427	1700	592	745
Volume to Capacity	0.01	0.10	0.14	0.08
Queue Length 95th (ft)	1	0	12	6
Control Delay (s)	0.5	0.0	12.1	10.3
Lane LOS	A		B	B
Approach Delay (s)	0.5	0.0	12.1	10.3
Approach LOS			B	B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	9	13	9	12	14	13
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.972				0.850		0.997			0.974	
Flt Protected		0.978			0.982			0.999		0.950		
Satd. Flow (prot)	0	1400	0	0	1752	1516	0	3387	0	1289	1853	0
Flt Permitted		0.713			0.789			0.649		0.143		
Satd. Flow (perm)	0	1021	0	0	1408	1516	0	2201	0	194	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				428		2			17	
Headway Factor	1.04	1.19	1.04	1.00	1.00	1.04	1.14	1.03	1.14	1.00	0.94	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1453			513			920			335	
Travel Time (s)		33.0			11.7			20.9			7.6	
Volume (vph)	74	46	30	26	66	442	23	943	11	140	255	28
Peak Hour Factor	0.82	0.70	0.75	0.59	0.90	0.90	0.82	0.94	0.55	0.79	0.85	0.45
Heavy Vehicles (%)	3%	22%	17%	4%	8%	3%	9%	2%	64%	40%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	4
Parking (#/hr)		0	2					0	2			
Adj. Flow (vph)	90	66	40	44	73	491	28	1003	20	177	300	62
Lane Group Flow (vph)	0	196	0	0	117	491	0	1051	0	177	362	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	21.0	21.0	0.0	21.0	21.0	21.0	48.0	48.0	0.0	11.0	59.0	0.0
Total Split (%)	21.0%	21.0%	0.0%	21.0%	21.0%	21.0%	48.0%	48.0%	0.0%	11.0%	59.0%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0	17.0	44.0	44.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.1			17.1	17.1		44.4		51.4	55.4	
Actuated g/C Ratio		0.20			0.20	0.20		0.51		0.59	0.64	
v/c Ratio		0.92			0.42	0.76		0.93		0.86	0.30	
Control Delay		81.9			37.8	15.3		37.0		52.1	8.6	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	

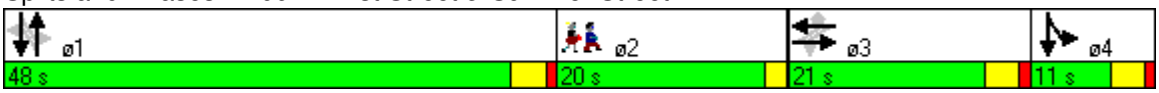
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		81.9			37.8	15.3		37.0		52.1	8.6	
LOS		F			D	B		D		D	A	
Approach Delay		81.9			19.6			37.0			22.9	
Approach LOS		F			B			D			C	
Queue Length 50th (ft)		90			51	26		220		27	56	
Queue Length 95th (ft)		#176			120	#191		#497		#140	147	
Internal Link Dist (ft)		1373			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		212			279	644		1131		205	1195	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.92			0.42	0.76		0.93		0.86	0.30	

Intersection Summary

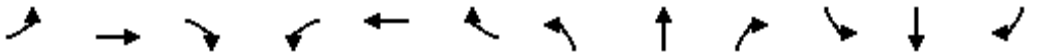
Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 86.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



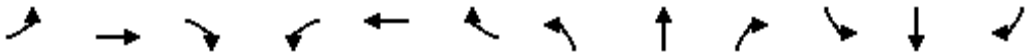
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.99		1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1533	1739	0	0	1739	1524	0	1826	1432	1479	0	1383
Flt Permitted	0.333							0.999		0.950		
Satd. Flow (perm)	536	1739	0	0	1739	1502	0	1825	1432	1447	0	1383
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						254			68			136
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1114			1146			921			2348	
Travel Time (s)		25.3			26.0			20.9			53.4	
Volume (vph)	24	34	0	0	180	221	2	257	61	181	0	121
Confl. Peds. (#/hr)	1					1	20		12	12		20
Peak Hour Factor	0.67	0.62	0.92	0.92	0.92	0.87	0.50	0.82	0.85	0.75	0.92	0.89
Heavy Vehicles (%)	6%	2%	0%	0%	2%	6%	0%	4%	9%	18%	0%	9%
Adj. Flow (vph)	36	55	0	0	196	254	4	313	72	241	0	136
Lane Group Flow (vph)	36	55	0	0	196	254	0	317	72	241	0	136
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	14.0				16.0	14.0	22.0	22.0	22.0	14.0		
Total Split (s)	18.0	34.0	0.0	0.0	16.0	22.0	44.0	44.0	44.0	22.0	0.0	40.0
Total Split (%)	18.0%	34.0%	0.0%	0.0%	16.0%	22.0%	44.0%	44.0%	44.0%	22.0%	0.0%	40.0%
Maximum Green (s)	14.0				12.0	18.0	40.0	40.0	40.0	18.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	19.9	23.9			12.0	29.4		46.7	46.7	17.4		25.3
Actuated g/C Ratio	0.20	0.24			0.12	0.29		0.47	0.47	0.17		0.25
v/c Ratio	0.19	0.13			0.94	0.41		0.37	0.10	0.93		0.30

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	31.4	30.0			93.3	5.2		19.5	5.1	85.8		5.8
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	31.4	30.0			93.3	5.2		19.5	5.1	85.8		5.8
LOS	C	C			F	A		B	A	F		A
Approach Delay		30.5			43.6			16.8				
Approach LOS		C			D			B				
Queue Length 50th (ft)	18	28			126	0		125	1	149		3
Queue Length 95th (ft)	31	38			#262	47		186	24	#223		55
Internal Link Dist (ft)		1034			1066			841			2268	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	266	409			209	632		853	705	266		535
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.14	0.13			0.94	0.40		0.37	0.10	0.91		0.25

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 81 (81%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 38.6 Intersection LOS: D
Intersection Capacity Utilization 55.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1484: West First & D Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	43	119	0	0	103	14	44	24	16	8	0	29
Peak Hour Factor	0.68	0.81	0.92	0.92	0.25	0.77	0.81	0.64	0.75	0.40	0.92	0.64
Hourly flow rate (vph)	63	147	0	0	412	18	54	38	21	20	0	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	430			147			740	704	147	735	694	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430			147			740	704	147	735	694	421
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			82	89	98	93	100	93
cM capacity (veh/h)	1140			1447			298	344	905	290	348	628

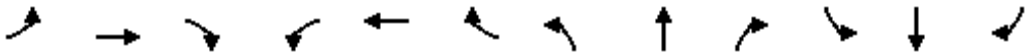
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	210	430	113	65
Volume Left	63	0	54	20
Volume Right	0	18	21	45
cSH	1140	1700	359	463
Volume to Capacity	0.06	0.25	0.31	0.14
Queue Length 95th (ft)	4	0	33	12
Control Delay (s)	2.9	0.0	19.6	14.1
Lane LOS	A		C	B
Approach Delay (s)	2.9	0.0	19.6	14.1
Approach LOS			C	B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	31.9%	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)	142	5	1	117	6	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	5	1	127	7	2
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			160		286	157
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			160		286	157
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	100
cM capacity (veh/h)			1419		703	888

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	160	128	9
Volume Left	0	1	7
Volume Right	5	0	2
cSH	1700	1419	742
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	16	11	12	12	9	13	9	12	14	13
Storage Length (ft)	20		0	0		0	0		0	0		0
Storage Lanes	0		0	0		1	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.957				0.850		0.993			0.985	
Flt Protected		0.983			0.995			0.997		0.950		
Satd. Flow (prot)	0	1439	0	0	1721	1615	0	3355	0	1805	1957	0
Flt Permitted		0.869			0.970			0.647		0.445		
Satd. Flow (perm)	0	1272	0	0	1678	1615	0	2177	0	846	1957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				133		6			8	
Headway Factor	1.20	1.19	0.85	1.04	1.00	1.00	1.14	1.02	1.14	1.00	0.92	0.96
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1453			513			920			335	
Travel Time (s)		33.0			11.7			20.9			7.6	
Volume (vph)	38	43	37	5	38	112	19	311	13	270	880	83
Peak Hour Factor	0.67	0.81	0.71	0.63	0.55	0.84	0.67	0.80	0.65	0.89	0.92	0.78
Heavy Vehicles (%)	11%	7%	6%	0%	11%	0%	16%	4%	0%	0%	2%	2%
Parking (#/hr)		0	0					0	0			
Adj. Flow (vph)	57	53	52	8	69	133	28	389	20	303	957	106
Lane Group Flow (vph)	0	162	0	0	77	133	0	437	0	303	1063	0
Turn Type	Perm			Perm		Perm	Perm			D.P+P		
Protected Phases		3			3			1		4	1 4	
Permitted Phases	3			3		3	1			1		
Detector Phases	3	3		3	3	3	1	1		4	1 4	
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	10.0	10.0		5.0		
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	14.0	14.0		9.0		
Total Split (s)	24.0	24.0	0.0	24.0	24.0	24.0	46.0	46.0	0.0	11.0	57.0	0.0
Total Split (%)	24.0%	24.0%	0.0%	24.0%	24.0%	24.0%	46.0%	46.0%	0.0%	11.0%	57.0%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	42.0	42.0		7.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0		
Lead/Lag	Lead	Lead		Lead	Lead	Lead	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		1.0		
Recall Mode	None	None		None	None	None	Max	Max		None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.7			13.7	13.7		43.2		50.4	54.5	
Actuated g/C Ratio		0.17			0.17	0.17		0.52		0.61	0.66	
v/c Ratio		0.71			0.28	0.35		0.38		0.51	0.82	
Control Delay		47.1			34.4	9.2		16.0		14.0	22.3	

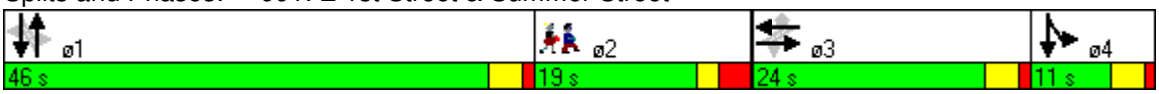
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	19.0
Total Split (s)	19.0
Total Split (%)	19%
Maximum Green (s)	14.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay		47.1			34.4	9.2		16.0		14.0	22.3	
LOS		D			C	A		B		B	C	
Approach Delay		47.1			18.4			16.0			20.4	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)		61			31	0		52		39	249	
Queue Length 95th (ft)		132			49	40		126		157	#972	
Internal Link Dist (ft)		1373			433			840			255	
Turn Bay Length (ft)												
Base Capacity (vph)		306			383	471		1139		599	1292	
Starvation Cap Reductn		0			0	0		0		0	0	
Spillback Cap Reductn		0			0	0		0		0	0	
Storage Cap Reductn		0			0	0		0		0	0	
Reduced v/c Ratio		0.53			0.20	0.28		0.38		0.51	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 82.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 84.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 991: E 1st Street & Summer Street



Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	11	11	10	12	11	12	11	11	11	10
Storage Length (ft)	100		0	0		100	0		100	0		100
Storage Lanes	1		0	0		1	0		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50	50		50
Trailing Detector (ft)	0	0			0	0	0	0	0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		0.98		
Frt						0.850			0.850			0.850
Flt Protected	0.950							0.999		0.950		
Satd. Flow (prot)	1624	1722	0	0	1598	1524	0	1827	1459	1711	0	1478
Flt Permitted	0.636							0.999		0.950		
Satd. Flow (perm)	1088	1722	0	0	1598	1524	0	1825	1459	1680	0	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						138			63			201
Headway Factor	1.14	1.09	1.04	1.04	1.09	1.00	1.04	1.00	1.04	1.04	1.04	1.09
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1095			878			915			2360	
Travel Time (s)		24.9			20.0			20.8			53.6	
Volume (vph)	17	40	0	0	75	113	1	134	57	411	0	207
Confl. Peds. (#/hr)							12		8	8		12
Peak Hour Factor	0.63	0.71	0.92	0.92	0.76	0.82	0.25	0.92	0.90	0.92	0.92	0.80
Heavy Vehicles (%)	0%	3%	0%	0%	11%	6%	0%	4%	7%	2%	0%	2%
Adj. Flow (vph)	27	56	0	0	99	138	4	146	63	447	0	259
Lane Group Flow (vph)	27	56	0	0	99	138	0	150	63	447	0	259
Turn Type	D.P+P					pm+ov	Split		Prot	Prot		custom
Protected Phases	2	2 3			3	4	1	1	1	4		2 4
Permitted Phases	3					3						
Detector Phases	2	2 3			3	4	1	1	1	4		2 4
Minimum Initial (s)	6.0				12.0	6.0	14.0	14.0	14.0	6.0		
Minimum Split (s)	10.0				17.0	22.0	22.0	22.0	22.0	22.0		
Total Split (s)	10.0	27.0	0.0	0.0	17.0	46.0	27.0	27.0	27.0	46.0	0.0	56.0
Total Split (%)	10.0%	27.0%	0.0%	0.0%	17.0%	46.0%	27.0%	27.0%	27.0%	46.0%	0.0%	56.0%
Maximum Green (s)	6.0				13.0	42.0	23.0	23.0	23.0	42.0		
Yellow Time (s)	3.0				3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0				1.0	1.0	1.0	1.0	1.0	1.0		
Lead/Lag	Lag				Lead	Lag	Lead	Lead	Lead	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Recall Mode	None				None	None	C-Min	C-Min	C-Min	None		
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					5.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					5		5	5	5			
Act Effct Green (s)	15.9	22.3			12.3	43.3		38.7	38.7	30.2		37.0
Actuated g/C Ratio	0.16	0.22			0.12	0.43		0.39	0.39	0.30		0.37
v/c Ratio	0.13	0.15			0.51	0.19		0.21	0.10	0.86		0.38

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	32.3	32.3			50.6	2.6		25.4	7.8	44.9		3.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	32.3	32.3			50.6	2.6		25.4	7.8	44.9		3.6
LOS	C	C			D	A		C	A	D		A
Approach Delay		32.3			22.6			20.2				
Approach LOS		C			C			C				
Queue Length 50th (ft)	14	29			60	0		67	0	177		7
Queue Length 95th (ft)	25	48			93	19		134	32	224		23
Internal Link Dist (ft)		1015			798			835			2280	
Turn Bay Length (ft)	100					100			100			100
Base Capacity (vph)	205	396			208	901		707	603	719		824
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.13	0.14			0.48	0.15		0.21	0.10	0.62		0.31

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 57.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1484: West First & D Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	168	0	0	105	9	33	3	16	15	0	34
Peak Hour Factor	0.58	0.85	0.92	0.92	0.67	0.56	0.65	0.75	0.54	0.88	0.92	0.80
Hourly flow rate (vph)	12	198	0	0	157	16	51	4	30	17	0	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	173			198			429	395	198	418	387	165
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			198			429	395	198	418	387	165
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.6	4.0	3.3
p0 queue free %	99			100			90	99	96	97	100	95
cM capacity (veh/h)	1416			1387			494	541	831	511	546	885

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	210	173	84	60
Volume Left	12	0	51	17
Volume Right	0	16	30	42
cSH	1416	1700	579	732
Volume to Capacity	0.01	0.10	0.15	0.08
Queue Length 95th (ft)	1	0	13	7
Control Delay (s)	0.5	0.0	12.3	10.4
Lane LOS	A		B	B
Approach Delay (s)	0.5	0.0	12.3	10.4
Approach LOS			B	B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	26.9%	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)	191	8	2	108	7	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	208	9	2	117	8	2
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			216		334	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			216		334	212
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	100
cM capacity (veh/h)			1365		664	833

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	216	120	10
Volume Left	0	2	8
Volume Right	9	0	2
cSH	1700	1365	696
Volume to Capacity	0.13	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.2	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	10.2
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

2 H Street, South Boston

Detailed Trip Generation Estimation - Proposed Project

Howard/Stein-Hudson Associates
December 2, 2011

Component	Size	Category	Trip Rates (Trips/ksf or unit)	Directional Split	Unadjusted Vehicle Trips	National vehicle occupancy rate[1]	**Converted to Person trips**	Capture Rate	Person Trips less Capture Rate	Transit Share[2]	**Transit Trips**	Walk/Bike/ Other Share[2]	**Walk/ Bike/ Other Trips**	Vehicle Share[2]	Vehicle Person Trips	Local vehicle occupancy rate[3]	**Total Adjusted Vehicle Trips**
Daily Trip Generation																	
Residential [4]	118	Total	5.42	100%	639	1.13	**722**	0%	722	19%	**137**	34%	**245**	47%	339	1.1	**308**
	units	In	2.71	50%	320	1.13	**362**	0%	362	19%	**69**	34%	**123**	47%	170	1.1	**155**
		Out	2.71	50%	320	1.13	**362**	0%	362	19%	**69**	34%	**123**	47%	170	1.1	**155**
AM Peak-hour Trip Generation																	
Residential [4]	118	Total	0.30	100%	35	1.13	**40**	0%	40		**8**		**15**		15	1.1	**14**
	units	In	0.09	31%	11	1.13	**12**	0%	12	16%	**2**	36%	**4**	48%	6	1.1	**6**
		Out	0.21	69%	24	1.13	**27**	0%	27	24%	**6**	42%	**11**	34%	9	1.1	**8**
PM Peak-hour Trip Generation																	
Residential [4]	118	Total	0.39	100%	46	1.13	**52**	0%	52		**10**		**21**		21	1.1	**19**
	units	In	0.23	58%	27	1.13	**31**	0%	31	24%	**7**	42%	**13**	34%	11	1.1	**10**
		Out	0.16	42%	19	1.13	**21**	0%	21	16%	**3**	36%	**8**	48%	10	1.1	**9**

Notes:

1. National vehicle occupancy rates based on the 2009 National Household Travel Survey.
2. Mode shares based on BTD data for Area 13
3. Local vehicle occupancy rates based on 2000 Census and 2009 National Household Travel Survey.
4. ITE Trip Generation, 8th Edition, LUC 222 (High-Rise Apartment), fitted curve equation - the daily rate for LUC 223 (Mid-Rise Apartment) is not available.
5. ITE Trip Generation, 8th Edition, LUC 223 (Mid-Rise Apartment), fitted curve equations.

2 H Street, South Boston

Detailed Trip Generation Estimation - Existing Use (100% Occupancy)

Howard/Stein-Hudson Associates
December 2, 2011

Component	Size	Category	Trip Rates (Trips/ksf or unit)	Directional Split	Unadjusted Vehicle Trips	National vehicle occupancy rate[1]	**Converted to Person trips**	Capture Rate	Person Trips less Capture Rate	Transit Share[2]	**Transit Trips**	Walk/Bike/ Other Share[2]	**Walk/ Bike/ Other Trips**	Vehicle Share[2]	Vehicle Person Trips	Local vehicle occupancy rate[3]	**Total Adjusted Vehicle Trips**
Daily Trip Generation																	
***Light Industrial*[4]**	20	Total	6.97	100%	139	1.13	**157**	0%	157	19%	**30**	34%	**53**	47%	74	1.1	**67**
	ksf	In	3.49	50%	70	1.13	**79**	0%	79	19%	**15**	34%	**27**	47%	37	1.1	**34**
		Out	3.48	50%	70	1.13	**79**	0%	79	19%	**15**	34%	**27**	47%	37	1.1	**34**
AM Peak-hour Trip Generation																	
***Light Industrial*[4]**	20	Total	0.92	100%	18	1.13	**20**	0%	20		**4**		**9**		7	1.1	**6**
	ksf	In	0.81	88%	16	1.13	**18**	0%	18	24%	**4**	42%	**8**	34%	6	1.1	**5**
		Out	0.11	12%	2	1.13	**2**	0%	2	16%	**0**	36%	**1**	48%	1	1.1	**1**
PM Peak-hour Trip Generation																	
***Light Industrial*[4]**	20	Total	0.97	100%	19	1.13	**21**	0%	21		**5**		**9**		7	1.1	**6**
	ksf	In	0.12	12%	2	1.13	**2**	0%	2	16%	**0**	36%	**1**	48%	1	1.1	**1**
		Out	0.85	88%	17	1.13	**19**	0%	19	24%	**5**	42%	**8**	34%	6	1.1	**5**

Notes:

1. National vehicle occupancy rates based on the 2009 National Household Travel Survey.
2. Mode shares based on BTD data for Area 13
3. Local vehicle occupancy rates based on 2000 Census and 2009 National Household Travel Survey.
4. ITE Trip Generation, 8th Edition, LUC 110 (General Light Industrial), average rates per 1,000 sf.

APPENDIX D - LEED Checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

Project Name

Date

Sustainable Sites — Possible Points: 26

Y	?	N			
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
		x	Credit 4.4	Alternative Transportation—Parking Capacity	2
	x		Credit 5.1	Site Development—Protect or Restore Habitat	1
		x	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
	x		Credit 7.2	Heat Island Effect—Roof	1
	x		Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y	?	N			
Y			Prereq 1	Water Use Reduction—20% Reduction	
2			Credit 1	Water Efficient Landscaping	2 to 4
		x	Credit 2	Innovative Wastewater Technologies	2
2			Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
12			Credit 1	Optimize Energy Performance	1 to 19
	x		Credit 2	On-Site Renewable Energy	1 to 7
		x	Credit 3	Enhanced Commissioning	2
	x		Credit 4	Enhanced Refrigerant Management	2
	x		Credit 5	Measurement and Verification	3
	x		Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
		x	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		x	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
	x		Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
	x		Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
	x		Credit 6	Rapidly Renewable Materials	1
	x		Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
	x		Credit 1	Outdoor Air Delivery Monitoring	1
	x		Credit 2	Increased Ventilation	1
	x		Credit 3.1	Construction IAQ Management Plan—During Construction	1
	x		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	x		Credit 5	Indoor Chemical and Pollutant Source Control	1
	x		Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
	x		Credit 7.1	Thermal Comfort—Design	1
	x		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

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
	x		Credit 1.3	Innovation in Design: Specific Title	1
	x		Credit 1.4	Innovation in Design: Specific Title	1
	x		Credit 1.5	Innovation in Design: Specific Title	1
	x		Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

Y	?	N			
1			Credit 1.1	Regional Priority: Specific Credit	1
	x		Credit 1.2	Regional Priority: Specific Credit	1
	x		Credit 1.3	Regional Priority: Specific Credit	1
	x		Credit 1.4	Regional Priority: Specific Credit	1

Total — Possible Points: 110

51				Total	

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